

**THE THOLIAN WEB: THE POLITICAL/INSTITUTIONAL CONTEXT OF
REGIONAL CLUSTER-BASED ECONOMIC DEVELOPMENT**

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The Tholian Web: The Political/Institutional Context of Regional Cluster-Based Economic Development

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Abstract

This is an exploratory study that applies the dominant theories of the community power structure literature to the trend of regional cluster-based economic development policy in order to develop a conceptual framework of the political/institutional context of this “new” approach. In order to develop a framework that can be utilized by practitioners, field studies were conducted in Austin, Texas; Portland, Oregon; Greenville/Spartanburg, South Carolina; Lynchburg, Virginia; and Roanoke, Virginia. The findings are that the major community power structure theories (i.e., market model, economic forces, civic culture, regime theory, the growth machine, and civic entrepreneurs) all provide important insights for the adoption of cluster-based policies. Other important factors that need to be considered are the importance of public administrators, performance metrics, state context, institutional arrangements, elected officials, tax structure, and historical path dependency. The implication for public administration is that the role of public administrators is contingent on the nature of the network governance structure.

Acknowledgements

I would like to express recognition of and appreciation to Harvard Business School Publishing for granting permission to reprint on page 26 in this dissertation the following:

Figure 7-11 Government Influences on Cluster Upgrading in Porter, Michael. *On Competition*. Boston: Harvard Business School Press, 1998. p.251

About the Title of This Dissertation

In the third season of the original *Star Trek* series, Captain James T. Kirk, the ultimate public administrator, and his crew attempt to ascertain the fate of the *U.S.S. Defiant*, which vanished 3 weeks ago. While searching for the lost spaceship, they visually detect the *Defiant*, but sensors indicate it is not there. Undaunted by this strange phenomenon, Kirk, and some of his fellow public administrators, beam aboard the missing ship. They determine that the entire crew had gone mad and killed each other.

The landing party attempts to beam back to the *U.S.S. Enterprise*, but due to technology problems, Kirk is left alone on the *Defiant*. Kirk and the ship are trapped in a parallel universe by the weakening of the surrounding fabric of space. Spock is left in command of the *Enterprise*. Meanwhile, the crew of the *Enterprise* begins suffering from a state of insanity caused by a weakening of the fabric of space.

The appearance of hostile Tholian ships disrupts the attempts to save Kirk from the time warp in which he is stuck. The Tholians are a hive-minded, non-humanoid species that expects timeliness. Discourse fails with the Tholians and they respond by surrounding the *Enterprise* with an energy network.

As insanity descends, Spock and Doctor McCoy are forced to work together to get the crew out of their predicament, Spock tempering his logical decisions with politics and McCoy trying to think more rationally. Working together they determine that a therigram derivative (therigram, in its pure form, is a deadly nerve gas used by the Klingons) acts as a cure for the dementia. With the insanity under control, the *Enterprise* is able to hold Kirk in the transporter beam at the next spatial interphase and then escape from the nearly

completed Tholian web by using ship's power to disrupt space-time and throw them out of the web.

The *Tholian Web* (Alexander, 1966) metaphor is used for the political/institutional context of cluster based economic development, not just because I enjoy *Star Trek*, but because it highlights some important aspects of economic development. It brings up the issue of time (e.g., history matters) and time warps (e.g., smokestack chasing), insanity (e.g., industrial incentives), and the need for the “rational” business world and the political to work together. It also raises the question of whether the network governance of regional economic development is a Tholian web that might trap and crush public administration. I do not want to take the metaphor too far and get the reader distracted from the stated objective of this study, but would just like to present the parable of a public administrator caught in a time warping network as a way to introduce my story.

Table of Contents

Abstract.....	i
Acknowledgements.....	ii
About the Title.....	iii
List of Tables.....	xi
List of Figures.....	xii

Chapter	Page
---------	------

Part I. Setting the Stage

One: Introduction.....	1
The Context and Problem Statement	1
Literature.....	2
Research Design.....	3
Key Findings.....	5
Limitations.....	8
Organization of the Dissertation.....	9
Two: Literature Review.....	11
Introduction to the Literature Review.....	11
Literature Gap.....	12
Community Power Structure Literature.....	12
Economic Development Literature.....	19
Cluster-Based Development Literature.....	22
Porter’s Model.....	25
Critique of Clusters.....	29
Combining the Literatures.....	31
Three: Methodology.....	33
Case Selection.....	34
Research Design.....	37
Secondary Research Data Collection.....	38
Academic resources.....	38
Professional resources.....	38
Newspaper and periodical resources.....	39
Data Collection and Analysis.....	39
Interviews.....	39
Coding.....	43
Cluster-based economic development policies.....	43
Actor-Centered Independent Variables.....	45
Regime theory.....	45
Growth machine theory.....	46
Civic entrepreneurs.....	46

Structural Factors Independent Variables.....	47
Market model theory.....	47
Civic culture.....	48
Triangulating the Data Collection.....	48
Limitations.....	49
Part II. Field Studies	
Four: Field Study of Austin, Texas.....	51
Organization of This Chapter.....	51
Introduction to the Trials and Tribulations of Creating a Technopolis.....	52
Economic Developers Perspective on Cluster-Based Economic Development...	52
Austin believes it is doing cluster-based economic development.....	52
Hindrances to cluster-based economic development	54
Historical Evolution of Austin.....	55
Vision to be more than a center of education and politics.....	55
Federal investment leads to a constitutive moment.....	55
Civic entrepreneurs struggle against anti-industrialization regime.....	56
Civic entrepreneurs' vision for a technopolis.....	58
Technopolis and civic entrepreneurship validated.....	60
Cluster concept takes root.....	62
Economic forces impel change.....	65
Austin reorganizes after the technology crash.....	66
High-technology regime changes their vision.....	69
Economic Development Example: Keeping Freescale in Austin.....	70
Structural Versus Actor Center Drivers.....	72
Market model.....	73
Economic forces.....	74
Civic culture.....	75
Civic entrepreneurs.....	76
Economic development regimes.....	76
Growth machine.....	78
Broad Implications From Austin.....	79
Facilitating dimensions.....	79
Common themes.....	80
Concluding Remarks on Austin.....	80
Five: Field Study of Portland, Oregon.....	82
Organization of This Chapter.....	82
Introduction to Trying to Manage Economic Development.....	83
Economic Developers' Perspective on Economic Development.....	83
Starting to take a cluster-based approach.....	83
Hindrances to cluster-based economic development in Portland.....	84
Historical Evolution of Portland.....	87
Distinct culture founded in scenic beauty.....	87
Rise of middle class values.....	88

Shipbuilding creates a constitutive moment	88
Attempts to diversify from a lumber economy	89
Dambuilding a constitutive moment.....	90
Planning for the post-war future.....	91
Post-war industrial recruitment efforts.....	93
Constitutive moment for the Silicon Forest.....	94
Government-led economic development.....	95
Civic culture of no trash in the Shangri-la-in-the-Rainforest.....	96
Creative destruction of the fall of lumber.....	98
State context influencing regional economic development.....	99
Economic forces impelling economic development.....	102
Economic crisis leads to reorganization.....	103
Economic Development Example: A Not So Business-Friendly Civic Culture..	106
Structure Versus Actor-Center Drivers.....	107
Civic culture.....	108
Economic forces.....	109
Civic entrepreneurs.....	109
Growth machine.....	110
Regime theory.....	111
Broad Implications From Portland.....	111
Facilitating dimensions.....	111
Common themes.....	112
Concluding Remarks for Portland.....	112
Six: Field Study of Greenville/Spartanburg, South Carolina.....	113
Organization of This Chapter.....	113
Introduction to the Fall of the Cotton Kings and Rise of the Makers.....	114
Economic Developers on Cluster-Based Economic Development.....	115
We have always taken a cluster-based approach.....	115
Hindrances for taking a cluster-based approach.....	116
Historical Evolution of Greenville/Spartanburg.....	118
Development of a textile cluster and corporate paternalism.....	118
Anti-union civic culture.....	120
Military spending creates a constitutive moment.....	120
Civic entrepreneurs and boosterism.....	121
Civic entrepreneurs attract Europeans.....	122
BMW growth pole of the automotive cluster.....	123
Creative destruction wrought by the demise of the textile cluster.....	124
Economic development organizations and a coup.....	125
State of South Carolina context.....	129
Economic Development Example: Parochialism and Competition.....	130
Structure Versus Actor-Centered Drivers.....	130
Market model.....	131
Economic forces.....	131
Civic culture.....	132
Regime theory.....	132

Civic entrepreneurs.....	133
Growth machine.....	134
Broad Implications From Greenville/Spartanburg.....	134
Facilitating dimensions.....	134
Common themes.....	135
Concluding Remarks for Greenville/Spartanburg.....	136
Seven: Field Study of Lynchburg, Virginia.....	138
Organization of This Chapter.....	138
Introduction to an Average Joe Mid-Sized Manufacturing City.....	139
Economic Developers on Cluster-Based Economic Development.....	139
Trying to take a cluster-based approach.....	139
Hindrances to taking a cluster-based approach.....	140
Historical Evolution of Lynchburg.....	142
Tobacco cluster.....	142
Creative destruction of the tobacco cluster.....	143
Anti-growth elite.....	145
Second northern invasion creates a constitutive moment.....	145
Diversification rather than clusters.....	147
Local economy evolves.....	148
Nuclear cluster.....	150
Wireless cluster.....	151
Economic development organizations in Lynchburg.....	152
Lynchburg’s gone, but not forgotten regime.....	153
Economic development example: Creation of a Cluster Organization.....	154
Structure versus Human Agency.....	156
Market model.....	157
Economic forces.....	157
Civic entrepreneurs.....	158
Regime theory.....	158
Growth machine.....	159
Broad Implications from Lynchburg.....	160
Facilitating dimensions.....	160
Common themes.....	161
Concluding Remarks for Lynchburg.....	161
Eight: Field Study of Roanoke, Virginia.....	163
Organization of This Chapter.....	163
Introduction to Location Rather than Strategy.....	164
Economic Developers on Cluster-Based Economic Development.....	164
More target marketing than cluster development.....	164
Hindrances faced in Roanoke to a cluster-based approach.....	166
Historical Evolution of Roanoke.....	168
Business-friendly civic culture.....	168
Creative destruction from the demise of rayon.....	171
Cluster growth poles arrive.....	172

Interlude from active economic development.....	173
Economic development institutional arrangements.....	174
Creation of an economic development partnership.....	175
Civic culture of Roanoke hinders regionalism.....	175
Private sector starts to organize.....	177
Consultants develop strategies.....	178
Mechatronics cluster.....	179
Automotive cluster.....	180
Economic future of Roanoke is not clear.....	182
Economic Development Example: Losing in the Game.....	183
Economic Development Example: Winning in the Game.....	184
Economic Development Example: The Problem with Tax Incentives.....	185
Structure Versus Human Agency.....	186
Market model.....	187
Economic developers.....	187
Regime theory.....	188
Growth machine.....	189
Civic entrepreneurs.....	189
Broad Implications from Roanoke.....	190
Facilitating dimensions.....	190
Common themes.....	191
Concluding Remarks on Roanoke.....	192

Part III. Findings and Implications

Nine: Findings From the Field Studies.....	195
Extent of Cluster-Based Economic Development.....	196
Political/Institutional Predictors.....	199
Performance measurement.....	199
Institutional arrangements.....	201
State context.....	203
Elected officials.....	203
Tax structure.....	205
Structural Factors and Propositions.....	207
Network Governance and Human Agency Factors.....	210
Supplements to the Literature.....	213
Important Role of Professional Economic Developers.....	214
Changing economic development game.....	214
Impact of the Internet on the game.....	215
Site location consultants.....	215
Economic development consultants.....	216
Economic development performance metrics.....	217
Economic developers as a community of practice.....	217
Application of Evolutionary Economics.....	220
History matters.....	220
Biology rather than physics as a metaphor.....	222

Revision of the Conceptual Framework.....	224
Propositions underlying the revised conceptual framework.....	225
Concluding Remarks on the Findings.....	228
Ten: Implications.....	229
Introduction to Chapter.....	229
Review and Summary of Research Questions.....	229
Further Empirical Testing of the Framework.....	234
Implications for Public Administration.....	235
Measurement of Economic Development Programs.....	240
Public-private partnerships.....	242
Future Research.....	247
Implications Summary.....	247
Postscript.....	249
References.....	250
Appendixes	
Appendix A: Summary of Statistical Studies.....	270
Appendix B: Interview Questionnaire and List of Confidential Interviews.....	274
Appendix C: Detailed Early Histories of the Field Study Communities.....	277

List of Tables

Table		Page
Table 1.	Various Structural Factors from the Literature.....	13
Table 2.	Summary of Theories from the Community Power Literature.....	19
Table 3.	Socio-Economic Comparison of the Regions.....	35
Table 4.	Structural Factors from the Literature Review.....	47
Table 5.	Performance Metrics of the Technopolis.....	64
Table 6.	Summary of the Community Power Theories Applied to Austin.....	72
Table 7.	Summary of Facilitating Dimensions in Austin.....	79
Table 8.	Common Economic Development Themes in Austin.....	80
Table 9.	Clusters Identified in Portland’s Comprehensive Regional Plans.....	104
Table 10.	Summary of the Community Power Theories Applied to Portland.....	107
Table 11.	Summary of the Facilitating Dimensions in Portland.....	111
Table 12.	Common Economic Development Themes in Portland.....	112
Table 13.	Summary of the Community Power Theories Applied to Greenville/Spartanburg.....	131
Table 14.	Summary of the Facilitating Dimensions in Greenville/Spartanburg....	135
Table 15.	Common Economic Development Themes in Greenville/Spartanburg...	136
Table 16.	Summary of the Community Power Theories Applied to Lynchburg....	156
Table 17.	Summary of the Facilitating Dimensions in Lynchburg.....	160
Table 18.	Common Economic Development Themes in Lynchburg.....	161
Table 19.	Summary of the Community Power Theories Applied to Roanoke.....	187
Table 20.	Summary of the Facilitating Dimensions in Roanoke.....	191
Table 21.	Common Economic Development Themes in Roanoke.....	191
Table 22.	Summary of Interview Findings.....	198
Table 23.	Comparisons of Performance Metrics From the Field Studies	200
Table 24.	Regional Economic Development Organizations.....	202
Table 25.	Summary of the Structural Forces From the Field Studies.....	209
Table 26.	Summary of the Actor-Centered Forces From the Field Studies.....	212
Table 27.	Network Governance Leadership.....	238
Table 28.	Traditional Performance Indicators.....	240
Table 29.	Summary of Future Research.....	247

List of Figures

Figure		Page
Figure 1.	Revised Framework Requiring Further Empirical Testing.....	5
Figure 2.	Evolution of the Conceptual Framework.....	6
Figure 3.	Example of a Cluster: Honey Cluster Map.....	23
Figure 4.	Porter’s Model, Government Influences on Cluster Upgrading	26
Figure 5.	Conceptual Framework Based on the Literature Review.....	32
Figure 6.	Historical Population Trends	36
Figure 7.	Conceptual Framework Driving the Data Collection.....	42
Figure 8.	Revised Conceptual Framework.....	195
Figure 9.	Revised Conceptual Framework with Propositions.....	226
Figure 10.	Conceptual Framework Revealed from Literature.....	230
Figure 11.	Conceptual Framework for Empirical Testing.....	233

Chapter One

Introduction

The Context and Problem Statement

States and local governments in the U.S. spend well over \$50 billion a year on economic development (Fisher & Peters, 2004). In a 2004 survey of local government officials in Virginia, next to providing good public education, promoting economic growth and bringing in higher-paying jobs were rated far ahead of the other goals for local government (Wood & Guterbock, 2004). Likewise, jobs and the economy continue to be the most important issues for citizens (Krugman, 2005). Clearly, promoting a community's future by striving for economic viability and sustainability is perceived as one of the most important issues for local and regional public administrators.

Cluster-based economic development has become the sine qua non of regional efforts to promote a community's future economic viability and sustainability. Rosenfeld (2005) points out that "Virtually every nation, every U.S. state, and every large city by now has conducted or contracted for an analysis of its clusters" (p. 2). U.S. regions from Maine (Colgan & Baker, 2003) to California (Walcott, 2002) have embraced a cluster-based approach to promoting economic growth and bringing in higher-paying jobs. It is rare to have a conversation with an economic developer and not have the term "cluster" roll off his or her lips. The concept has become ubiquitous.

Communities pay consultants, and I have to admit that my office is one of those consultants, tens of thousands of dollars to develop cluster-based strategies. However,

recommendations on politics and governance institutions are generally ancillary and not grounded in theory. This is the problem being addressed by this study.

Literature

There is a literature gap between the community power structure theories about factors impelling economic development in general and cluster-based economic development that this study is attempting to fill. The community power literature review reveals a rich debate between structural versus human agency drivers of economic development. The study of the relationship between economic and political factors in local economic development policy has tended to be polarized over the issue of whether local development policy is best explained by broader economic and political systems (structure) or on the actions of local political and economic actors (agency). The dominant competing theories include the market model (Peterson, 1981), civic culture (Reese & Rosenfeld, 2002), regime theory (Stone, 1989), growth machine theory (Logan & Molotch, 1987), and civic entrepreneurs (Henton et al., 1997). However, these theories examine development policy in general and not the adoption of cluster-based economic development, so this study utilizes these theories to guide the research. This research, then, will try to fill the gaps in our knowledge about the relationship of forces affecting cluster-based economic development strategies through an initial development of a conceptual framework that combines the public policy literature with Porter's framework. Then, through empirical study of different field studies, including perceptions of economic developers, the framework is refined in order to begin to fill the politics and institutional governance gap in the cluster-based economic development literature.

Research Design

The purpose of this exploratory study is to uncover plausible factors driving cluster-based economic development and plausible factors facilitating or hindering taking this approach. In order to accomplish this, I attempt to understand the perception of economic developers about the political/institutional context of cluster-based economic development. Their perceptions are triangulated with commercial publications and academic research to paint a probable scenario. Deep economic histories are conducted of each of the field studies in order to show the origins of the current political/institutional contexts and industrial clusters. It is important to note that most of the industrial clusters' roots go back fifty or more years. Cluster development is a long-term process.

Further, twenty-eight confidential interviews of economic developers were conducted in the five field study locations and, in addition to site visits, extensive use was made of secondary material including newspapers, academic writings, and professional resources. The data collection was guided by a conceptual framework derived from the literature review. After analyzing the primary and secondary data, the conceptual framework was modified. The framework was then used to narrate the findings and lay the groundwork for further empirical testing.

Specifically, the questions to be answered are:

1. What conceptual framework of the relationship between economic and political factors in cluster-based economic development policy is revealed in the literature?
2. What relationships among the roles of government, political forces, and economic forces in cluster-based economic development can be understood from contrasting field studies?

This question has two subsidiary questions:

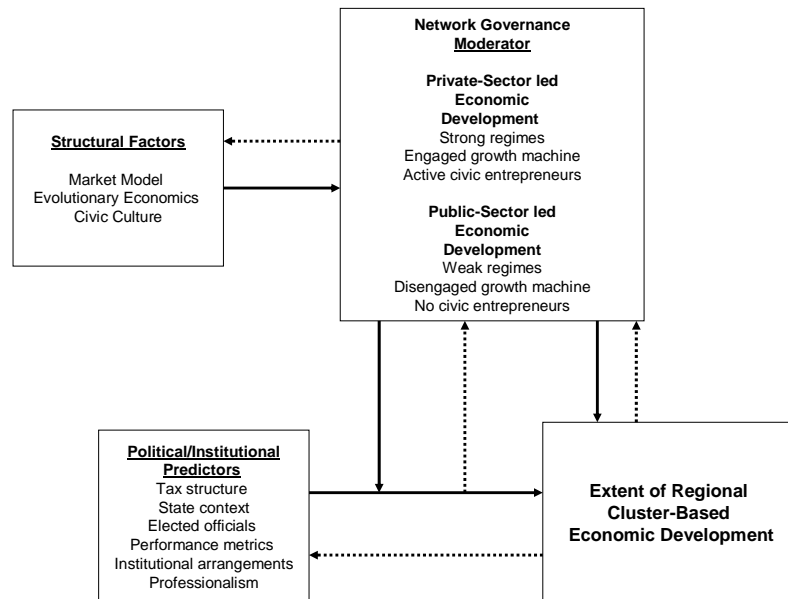
- a) In these cases, what do economic developers identify as helping or hindering them from taking a cluster-based economic development approach?
 - b) What do economic developers see as the drivers of the adoption or lack of adoption of different cluster-based economic development strategies in these cases?
3. What conceptual framework for the political/institutional context of cluster-based economic development can be developed?

Therefore in this exploratory study, the political/institutional context of cluster-based economic development in: 1) Austin, Texas; 2) Greenville/Spartanburg, South Carolina; 3) Portland, Oregon; 4) Lynchburg, Virginia; and 5) Roanoke, Virginia are examined in order to develop a conceptual framework that can be utilized as a tool for developing more effective cluster-based development strategies. The outcome of effective policy is globally competitive geographic concentrations of highly specialized knowledge and skills embedded in institutions, rivals, related businesses, and sophisticated customers in a particular region that are more productive and competitive by being interrelated.

This is complementary to methodologies, such Heike Mayer's *Cluster Monitor: A Guide for Analyzing Industry Clusters in Regional Economies* (2005) and Porter's "diamond model" (1998), which assist communities to understand the characteristics and performance of specific industry clusters. The conceptual framework from this study, used in conjunction with specific industrial cluster analysis methodology, provides a tool to help understand the political and institutional milieu in which clusters are embedded.

The final framework is presented in Figure 1.

Figure 1. Revised Conceptual Framework Requiring Further Empirical Testing



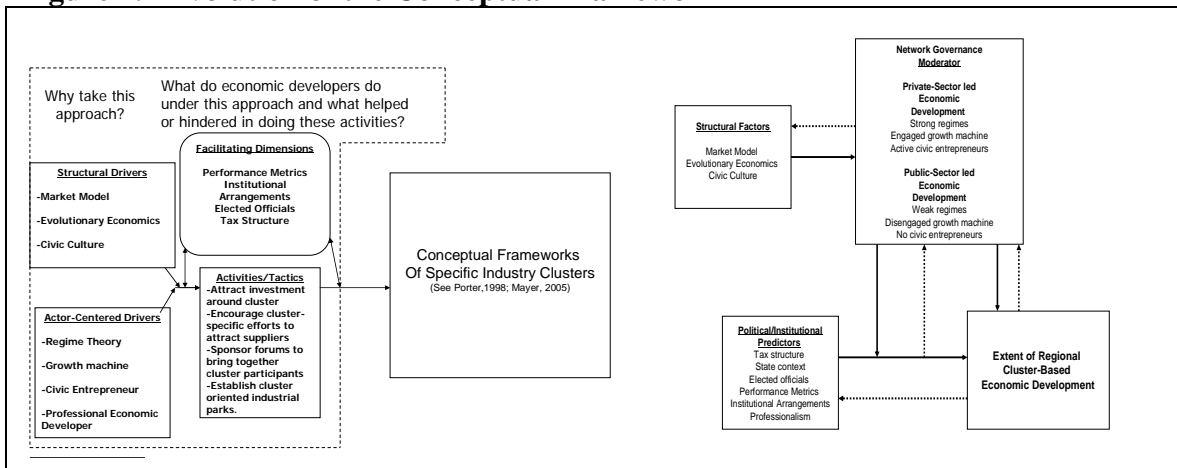
This conceptual framework, derived from a study of local/regional economic developers and their regions' economic history used a theoretically informed multiple-case studies approach. The framework requires further empirical testing and would be strengthened with additional research. This future research includes examination of performance metrics for cluster development, institutional governance structures in clusters, the influence of the state context on regional clusters, elected officials' perceptions of clusters, and the impact of various tax structures in a cluster-based economic development context. Nevertheless, the framework should be a useful start for those who want to better understand the important political/institutional context that cluster-based economic development strategies need to be built upon.

Key Findings

One of the most important findings was that the framework with which this study began needed to be revised (see Figure 2). Based on the literature, a variance model

(outcome-driven explanation of the input factors, independent variables, that explain variations in some outcome criteria, dependent variables) was conceived that would include variables that could be measured quantitatively and that follow the logic of independent and dependent variables in somewhat of a linear fashion (Mohr, 1982). Variance theory guided the data collection. The revised conceptual framework has a variance-theory outlook, but there is a process-theory aspect with the addition of evolutionary economics-based variables. In the revised conceptual framework above in Figure 1, some casual forces (e.g., market model) operate continuously while others (e.g., evolutionary economics with creative destruction) influence the sequence of events only at particular points in time.

Figure 2. Evolution of the Conceptual Framework



To understand the difference between a model and a framework, it is informative to consider Ostrom’s clarification of theories, models, and frameworks (Ostrom, 1999, p. 39-41). A *theory*, such as regime or growth machine theory, applies a “denser” and more coherent set of relationships. A *model* makes precise, often mathematical, assumptions about the variables related to a limited set of outcomes to a specific situation. A *framework* helps to identify the elements and relationships among elements that should

guide analysis of the phenomenon. A framework captures the variation and dimensionality of a phenomenon with the fewest dimensions. Frameworks help to generate the questions that are used in the analysis and one of the objectives of this research is to help practitioners ask the right questions regarding the political/institutional context of cluster-based economic development. The result of this exploratory study is a conceptual framework rather than a model ready for statistical testing.

Specific findings are that all these theories have value in understanding the political/institutional context of cluster-based economic development. The contrasting case studies reveal a number of common themes in the relationships among the roles of government, political forces, and economic forces in cluster-based economic development. These themes are that 1) economic development is becoming more professional and analytic; 2) there has been an institutional isomorphism of economic development organizations toward public-private partnerships, or at least a balance of public and private driven policy; and 3) evolutionary economics is useful for understanding cluster-based economic development. In particular, evolutionary concepts, such as path dependency, historical accidents, and industrial transformation, provide important insights. “Creative destruction” (Schumpeter, 1942) and “Constitutive Moments” (Starr, 2005) shape a region’s political economy. These themes need to be incorporated into the conceptual framework.

Economic developers identified a number of factors that hinder them from taking a cluster-based economic development approach. These include outdated performance metrics, inefficient institutional structures, non-enlightened elected officials, and an

antiquated tax structure. These factors do not prevent taking a cluster-based approach, but impede its implementation.

In conclusion, despite the case studies being selected in order to have varying values on key dimensions/variables similar, all of the regions claimed to be taking a cluster-based approach and claimed to be doing basically the same activities. The research does lead to speculation that Harrison's (1992) claim that clusters are "old wine in new bottles" has a ring of truth. Nevertheless, the basic concept of cluster-based economic development is extremely popular and seems to be more than just a fad. As a Virginia economic developer remarked about the future of clusters, "The name might change, but the concept will still be there." Thus, it is important to develop a conceptual framework for cluster-based economic development governance.

Martin and Sunley (2003) proclaim that cluster-based economic development should come with a "public health warning." The conclusions here do not go this far, but it does appear that communities need to proceed with caution when following Porter's prescriptions. They need to include political economic realities and public administration complexities in their calculations of how to proceed. Economic development is a complex context-driven phenomenon that defies standardized, cookie cutter formulas.

Limitations

Because this is an exploratory study, there are a number of limitations. First, this research included only five regions and there are several hundred other regions in the United States that deserve similar study to strengthen the conceptual framework. Second, it is likely that the factors are not all applicable in a different country context. Third, the confidential interviews were only conducted with economic developers and did not

include the myriad of other actors involved with economic development, for example, businesses, educators, and elected officials. Economic developers have the most in depth understanding of the political/institutional context so they were selected for the research. Nevertheless, they cannot tell the whole economic development story. Finally, there is significant research that needs to be done on the relationships and linkages between the various factors identified. Until that is done, this study can only be considered exploratory, identifying plausible political/institutional propositions regarding cluster-based economic development.

Organization of the Dissertation

Chapter Two is a literature review that elaborates the theoretical basis for this dissertation. It includes a review of relevant literature on community power structures, economic development, and industrial clusters. In particular, the work of Michael Porter, the most popular cluster theorist, is examined. In this chapter a conceptual framework is developed to guide the data collection.

Chapter Three discusses research methodology. Justifications for using a theoretically informed multiple-case studies approach are covered along with the reasons the five field study sites were selected. Details are given on the data sources, as well as how the explanatory theories are operationalized.

Part Two covers Chapters Four through Eight, which are the five field studies. The better known regions are presented first in the order in which the research was conducted. Chapter Four, titled “Trial and Tribulations of Creating a Technopolis,” discusses Austin from its origins as a seat of state government and higher education to the fabled “Silicon Hills.” Chapter Five, titled “Trying to Manage Economic Development,”

is the story of Portland's rise from a lumber center to the "Silicon Forest." Chapter Six is titled "The Fall of the Cotton Kings and the Rise of the Makers," and it reviews Greenville/Spartanburg's history from a textile center to an automotive manufacturing center. Chapter Seven titled "Average Joe Mid-Sized Manufacturing City," tells the story of Lynchburg's transition from "Tobacco City" to a home of nuclear services, wireless, and evangelicals. Finally, Chapter Eight, titled "Location Rather than Strategy," discusses Roanoke's start as a railroad to a place in need of a vision.

Part Three starts off with Chapter Nine, which focuses on the themes that were found running through the five field studies and presents propositions based on the field studies. These four themes include the changing nature of economic development, the emergence of economic developers as a community of practice, public/private partnerships, and the application of evolutionary economics. The implications of the themes are incorporated into the revised conceptual framework.

Chapter Ten concludes the dissertation, offering a comprehensive conceptual framework ready for further empirical testing. Implications for public administration based on the research are presented in the form of a bifurcated typology. In addition to further research directly on the revised conceptual framework, research conducted in the areas of cluster-based economic development as regards performance measurement, institutional structure, elected officials, state context, and tax structure is recommended.

Chapter Two

Literature Review

Introduction to the Literature Review

Due to the holistic and complex nature of economic development, it is important to recognize the limit of any single traditional academic discipline in providing an all-round theoretical understanding of such a dynamic process as cluster-based economic development policy. Therefore, in this research two literatures are woven together: the community power structure literature from political science/urban affairs and the cluster-based development literature from business and economic geography. Cluster-based development is also pervasive in the newly emerging academic fields of economic development and international development. These literatures will form the basis for this inquiry of the political/institutional context of cluster-based development.

This chapter is organized into four parts. First, the literature gap in the cluster-based development literature will be discussed. Second, the community power structure literature will be explored. This is broken into a discussion of whether economic development policy is structure or human-agency driven. The explanatory theories from this literature will form the basis for my research. Third, will be a discussion of the evolution of economic development literature. Fourth, the cluster development literature will be explored and in particular, the work of Michael Porter, who has done the most to popularize the subject. It is noted that Porter is not without his critics, such as Martin and Sunley (2003), who cynically label the fuzzy concept of clusters, the “Porter brand” and note a growing skepticism with the cluster concept. This chapter will then lead into the methodology chapter.

Literature Gap

The gap that this dissertation is attempting to fill is a framework to ground the discussion of politics and governance institutions in the cluster-based development literature. It is not that politics and governance institutions are not mentioned in this literature, but these factors are usually mentioned as an aside and are not explored in detail. For example, in a Rockefeller Institute Briefing Paper, *A Framework for Cluster-based Economic Development Policies* (Turner, 2001), the recommendations for governance institutions are that, “State and local policymakers should play a catalytic role in organizing key firms, nonprofits, and public institutions to create cluster councils at the state and regional levels. While the public sector can play a catalytic role, private sector leadership is essential in providing the necessary credibility and direction” (p. 32). There is not a theoretical grounding for this catalytic role. The framework from this exploratory study could provide this grounding. The assumptions going into this research are that the community power structure literature can enhance the cluster development literature and provide the basis for a framework.

Community Power Structure Literature

Extensive research chronicles the struggle of American communities to maintain their fiscal viability in the wake of global restructuring of markets that has been occurring since the end of the Second World War. Scholars note that localities compete with other localities to attract industry, jobs, and capital investment, and this observation raises important questions for public administration. The study of this question has tended to be polarized over the issue of whether local economic development policy is best explained by broader economic and political systems (structure) or by the actions of local political

and economic actors (agency). The underlying premise of structural theories is that development is shaped by economic and social conditions beyond the control of local policymakers (see Table 1 for some examples). On the other hand, theories that emphasize human agency attribute development to specific actors and their interests. This debate underlies the community power structure literature.

Table 1 Various Structural Factors From the Literature (Sources in Appendix A)

Partisanship of elections, city manager, executive veto, and ward system
Citizens' needs, urban capacity, fiscal need, and process of growth
Occupational interest strength (e.g., lawyers, unions, business establishments, bankers)
Registered business interest groups and proportion of business lobbyist
Economic distress (e.g., fiscal stress, unemployment) and accessibility (i.e., citizen participation, locus of decision-making)
Property tax stress (tax per capita, tax dependence)
Participation, locus of policymaking, and government structure
State level enabling legislation
Residential need (average income, poverty rates, unemployment) and governmental structure

An early theme of local economic development policy was the importance of local political arrangements. For example, Floyd Hunter's *Community Power Structure* (1953) inspired a host of other important community power studies, such as Robert Dahl's classic *Who Governs?* (1961). Nevertheless, this once fruitful avenue of inquiry diverted to a sterile debate between proponents of the elitist and the pluralist schools. In response to this perceived excessive reliance on political variables and the inadequate recognition of the economic factors that constrain local public policy, the market model for local development, which can be traced to Tiebout (1956), was developed.

One of the most influential theories in the community power literature posits that behavior is market driven and interprets the policy choices of local governments as rational responses to economic imperatives. In essence, localities pursue development

policies for economic reasons. Political factors internal to the region are mostly irrelevant as a force shaping local policymaking. Paul Peterson views cities operating like corporations in competition with other cities to attract mobile capital. In his book *City Limits* (1981), he argues that as the firm has a corporate interest apart from the interests and preferences of its employees, the city has a unitary interest apart from the interests and preferences of its individual residents. While individual and group preferences within a city may be diverse and conflicting, there is nevertheless a common understanding as to what constitutes the interest of the city per se. He argues that this policy not only maximizes profits for local businesses, but, more important, is essential for the unitary good of the whole community. Economically dependent on private investment, cities are driven to pursue a policy of courting outside industry by creating a "favorable business climate" that is conducive to capital accumulation and economic growth. Scholars continue this economic imperative line of research and intensely debate its critics (Schneider, 1989; Kantor & David, 1988; Imbroscio, 2003; Davies, 2004; Pagano & Bowman, 1997).

Critics of the market model, however, point out that market forces, far from resulting in an overarching public good, often inflict social and material harm on some groups, while conferring inordinate benefits on others. Further, empirical studies did not consistently support the economic constraints model. For example, a study by Basolo and Huang (2001) using data from a sample survey of U.S. local economic developers revealed virtually no support for the market model theory. However, the population needs, the support of elected officials, and the existence of formal economic development planning did influence support for economic development. This is corroborated by the

findings of Wong (1988), who found that local economic development policymaking operates within the general context of structural constraint, but that politics matter. (See Wong 1998 and Appendix A for a more comprehensive list of statistical studies of the debate.)

Finally, case studies, such as John Mollenkopf's examination of Boston and San Francisco in *The Contested City* (1983), showed that "political entrepreneurs" were crucial in establishing constituencies that allowed development policies to move forward. Therefore, economic rationality, by itself, cannot adequately explain development policy. Clearly, political forces must be involved and economic development policy is not deterministic (Goetz, 1994). For Peterson, despite the appearance of conflict and the pursuit of particularistic agendas, developmental policymaking is still overwhelmingly in the unitary interest of the community.

In response to critiques of the market model, regime theory developed in the 1980s from the intellectual roots of the community power tradition. Clarence Stone's study of Atlanta in *Regime Politics* (1989) is the seminal work laying out this theory. By adopting a political economy approach, it moves the study of local politics beyond the pluralist-elitist debate. While retaining a critical distance from rational choice theory, Stone finds the problem of collective action to be centrally important. The local government condition is one of weak and diffuse authority, and this situation favors any group that can act cohesively and control a substantial body of resources. Those endowed with a capacity to promote cooperation can attract allies and overcome oppositional forces. This paradigm offers a broad explanatory framework that assigns central importance to the informal processes of collaboration between those who control

investment capital (and other privately held resources) and those who control government authority. Urban regime theory has become the dominant paradigm in the field of urban politics and policy for more than a decade. Many scholars have further refined regime analysis (Dowding, 2001; Mossberger & Stoker, 2001; Leo, 1998; Purcell, 1997; Green & Grenell, 2001; Imbroscio, 2003).

Related to regime theory is the growth machine thesis, as developed by Logan and Molotch in *Urban Fortunes* (1987). These scholars also stress the informal, collusive aspects of local governance. In an earlier article, Molotch (1976) dubbed this “apparatus of interlocking pro-growth associations and governmental units” (p. 310), the “growth machine.” Logan and Molotch view land-based elites as colluding with each other and government officials to achieve land-use intensification and thus enhanced rents for personal gain. People who are drawn into local politics tend to be businessmen whose motives, at least initially, are to “wheel and deal” to affect land usage and resource distribution, which is the essence of local politics, in this view. Those who participate in local affairs, particularly local government, and those to whom they are most responsive once in office, are the people who have the most to gain or lose in decisions affecting land use. The growth machine thesis is consistent with regime theory in its focus on the informal, coalition aspect of local governance and its rejection of the naive view that policy is determined by votes.

The concept of political culture has been explored in political science literature for decades (Almond & Verba, 1963; Elazar, 1970). However, with the exception of Richard DeLeon's book *Left Coast City* (1992), which focuses on the centrality of civic culture in the progressive politics in San Francisco, little weight had been given to

cultural variables by scholars who work with regime theory until recently. Based on a study of two rural Maryland counties, Meredith Ramsay in *Community, Culture, and Economic Development* (1996) argues that contrary to the market paradigm, the goals of economic policy are ultimately derived from cultural values and ways of life. Economic development policy must be understood contextually and that a variety of non-economic values (e.g., security, identity, status, and role) may matter as much as or more than economic growth to community members. In *The Civic Culture of Local Economic Development* (2002) Laura Reese and Raymond Rosenfeld show that there are distinct local factors shaping the context of economic development decision-making. These factors, taken together, constitute a community's local civic culture. The authors make the case that different cultures will produce different types of economic development policies and that local civic culture will affect the whole array of local policies. This civic culture perspective holds that potential differences in local civic culture are more important than many surface similarities in structure and even economics (Reese & Rosenfeld, 2001).

Recently, others have tried to use the concept of social capital to explain the type of economic development policies pursued (Woolcock, 1998; Francois, 2001). Putnam (1993) insists that there is a connection between the degree of social capital accumulated within a region and its economic performance. Social capital is embodied in what Putnam calls "networks of civic engagement" that evolve over time owing to historical traditions of citizen involvement in a broad range of social, economic, and political activities. This axiomatically leads to a cluster-based approach. Thus, the nebulous concepts of culture and social capital, basically examining the shared vision or essence of a community,

seem to be a current popular line of research and can be viewed as a structural factor impacting economic development approaches.

A perspective that often gets lost in the regime versus structural debate is the role of individual leaders as drivers of economic development policy. The seminal work on this perspective is Henton et al's *Grassroots Leaders: How Civic Entrepreneurs Are Building Prosperous Communities* (1997). They argue that key individuals from private, public, social, and civic organizations forge powerfully productive linkages at the intersection of business, government, education, and community to create collaborative advantages that make it possible for their economic communities to successfully compete. The process of building local innovation networks is led by high profile leaders from the companies and institutions with the greatest stake in cluster success. This perspective is the pinnacle of human agency being a driver of economic development policy.

Civic entrepreneurs have a vision for their city, and economic development is a large part of that vision. Pagano and Bowman (1997) in their study of ten medium-sized cities demonstrate the critical role played by civic leaders in molding a community's future and in forging coalitions to ensure success. Community leaders, as a group share a collective vision of what the city could, or should become. In pursuit of this vision, communities mobilize public capital. Pagano and Bowman explain that they do this in an effort to move the city forward to a desired state. They contend that market failures do not explain why city governments get involved in economic development; rather, governments intervene in response to changing fiscal conditions and political leaders' perceptions of their city's image and its place in the hierarchy of cities.

Based on the community power structure literature, the institutional/political factors that should be incorporated into a model of cluster-based economic development are structural factors (e.g., economic forces, the market model, and culture) and actor-centered factors (e.g., regimes, growth machines, and civic entrepreneurs). These perspectives form the conceptual framework used to examine the case studies and are summarized in Table 2.

Table 2. Summary of Primary Theories From the Community Power Literature

<i>Structural Theories</i>	
Market Model	The community as a rational economic actor with a unitary interest. Civic entrepreneurs and governing regimes are subordinate to the overall economic principles that force communities to compete to capture new investment and capital
Economic Forces	Forces such as economic distress, global competition, and macro economic forces that drive policy
Civic Culture	Community value and public decision-making system
<i>Human Agency Theories</i>	
Regime Theory	Informal yet relatively stable group with access to institutional resources, and which has a significant impact on local economic development policy and implementation
Growth Machine	Individuals or institutions who directly benefit from economic development activity (e.g., bankers, developers, lawyers)
Civic Entrepreneurs	Primarily private-sector business people who bring their vision and commitment into the arena of regional cluster development

Economic Development Literature

Most scholars trace the origins of modern local economic development to the efforts of southern states to mitigate the effects of the Great Depression (Kotler, 1993; Cobb, 1982; Eisinger, 1988; Fisher & Peters, 1998). These efforts are often referred to as “traditional” economic development approaches. The first wave of economic development policy began in the south during the 1930s with industrial recruitment, known as smokestack chasing, which was designed to lure branch plants from the industrial north. Mississippi’s Balance Agriculture with Industry Act was the pioneering

example. These policies consist of giving cash to companies in the form of subsidies, loans, and tax abatements. The idea is that the companies receiving the cash from the government would use the capital to create jobs. The more jobs the firms created, the more public money they could receive. The public benefit from these jobs was supposed to outweigh the public cost. Since the 1970s, local and state practitioners and researchers have widely used targeted industry strategies—matching industry competitive requirements with regional economic comparative advantages—in their industrial recruitment efforts (Buss, 1999).

By the 1970s, however, many began to criticize the indirect approach of conventional industrial recruitment (Pressman & Wildavsky, 1973; Goodman, 1979; Lynch, 1992; Reed, 1996). The debate over the competition between states and local areas that use public subsidies and tax abatement as incentives to attract and retain businesses continues to this day (Sweeney, 2006). Many economists maintain that this is a “negative-sum” or at best a “zero-sum” game¹ (Fisher, 1998; Mahtesian, 1996; Reed, 1996; Peters and Fisher 2004; Rondinelli & Burpitt, 2000). Despite 75 percent to 80 percent of new jobs being created by existing industry, attracting new industry remains a primary focus of economic development (Gongwer, 1996). Some claim this predilection toward industrial recruiting is due to non-economic factors, such as the associated publicity of new business attraction (Mahtesian, 1996; Bachelor, 1994). Perhaps the most comprehensive work on the effectiveness of traditional economic development approaches is Timothy Bartik’s *Who Benefits from State and Local Economic Development Policies?* (1991). Bartik concluded that industrial recruitment is sound

¹ Many authors have referred to local economic development as a “game” and have applied game theory to local economic development (Wolkoff, 1992; Wolman, 1988; Spindler & Forrester, 1993). Even some of the economic developers interviewed referred to the “game.”

policy for high unemployment areas. Thus, the debate continues, but industrial recruitment remains a major part of economic development policy despite the fact that the economy is becoming more global, networked, and knowledge-based.

The debate over industrial recruitment sparked the second wave of economic development during the late 1970s and early 1980s (Eisinger, 1988; Fosler, 1991). In *The Rise of the Entrepreneurial State: State and Local Economic Development Policy in the United States* (1988), Peter Eisinger claims that a second wave of economic development involves filling perceived gaps and imperfections through government programs that directly provide economic development services to individual businesses. These policies provide services to promote various forms of innovation, such as applied research, industrial modernization, entrepreneurship, and business expansion into export markets. They have a common willingness to involve government in business decisions. Rather than just providing cash, they propose that the government offer services to businesses to help them determine their best market or technology. These policies also use economic incentives to strengthen the basic foundations of the local economy (e.g., workforce training) rather than firm-specific incentives.

During the 1990s, the “New Economy” led many to seek the third wave of economic development policy (Fosler, 1991; Friedman, 1998; Pilcher, 1991; Plosila, 1990; Olberding, 2002). This approach calls for a radical restructuring of economic development programs based on the principles of increased scale, flexibility, leverage, and accountability. Building social capital and networks (e.g., strategic clusters) is key to the third wave. Energizing strategic clusters requires communities to demonstrate core capabilities that reflect the priorities of high productivity businesses. The requirements of

industry are a skilled workforce, transportation and communications infrastructure, research facilities, quality of life, and social capital. Economic developers are expected to facilitate these requirements by forming, organizing, and managing network organizations.

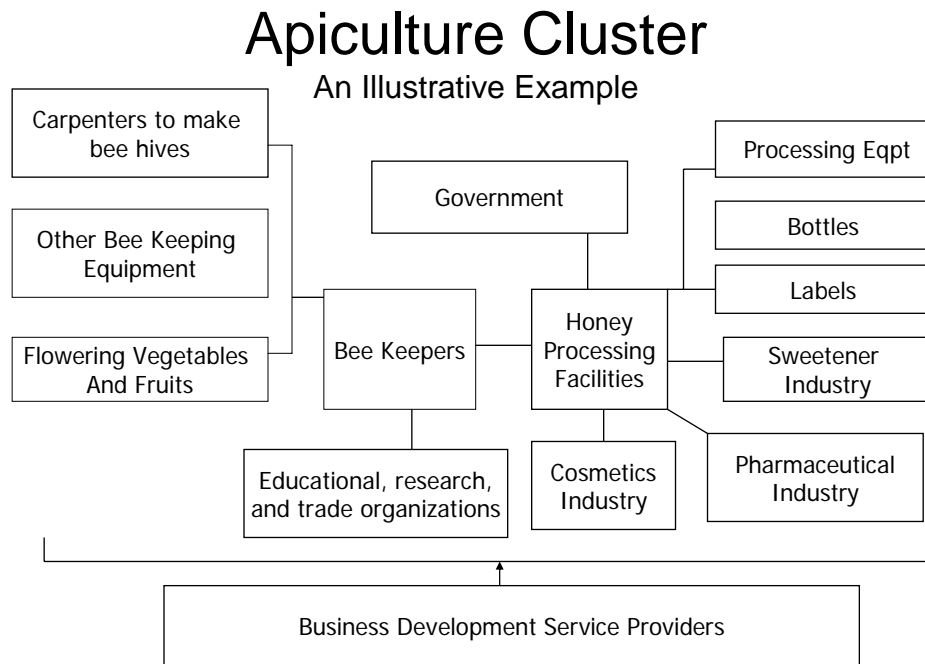
Thus, important factors to be considered in developing a model of the economic drivers of cluster-based development from the economic literature should include, but not be limited to, global competition, knowledge as the key resource for success, and the rise of network organizations. These economic forces are all structural factors (i.e., factors that local actors cannot control) that lead to cluster-based economic development.

Cluster-Based Development Literature

An important aspect of this current trend in the economic development literature is cluster-based development policies. These policies represent a major shift from traditional economic development programs, which focused on individual firm-oriented policies. Cluster policies, on the other hand, are based on the recognition that firms and industries are interrelated in both direct and indirect ways. They each contribute to a region's "collective efficiency"—that combination of external economies and joint actions by which a number of analysts explain the higher returns that accrue to firms that are spatially clustered (Krugman, 1991). This trend represents a confluence of various streams of economic development theory and practice: inter-firm cooperation (networks), agglomeration (external economies), social capital (associative behavior), and technology transfer and diffusion (knowledge spillover). An illustrative example of a cluster is the apiculture industry map (see Figure 3). The interactions amongst the firms and

institutions are essential factor in clusters rather than a critical mass of unconnected firms and institutions. It is a shift toward thinking of a regional economy as networks.

Figure 3. Example of a Cluster: Honey Cluster Map



Cluster-based economic development has received significant attention in current literature. Examples of industry clusters that have been studied range from the imaging equipment cluster in Rochester, New York and the golf equipment cluster in Carlsbad, to Silicon Valley, an entire region of computer and related electronics firms. However, there is considerable debate in the literature in three main areas: 1) the actual definition of a cluster, 2) how to identify a cluster, and 3) what factors drive the development of cluster.

The first main area of research focuses on the different definitions and typologies of clusters, and much of the literature consists of case studies illustrating different types of clusters (Held, 1996; Ryan, 2001; Lundequist & Power, 2002; Walcott, 2002; Colgan & Baker, 2003). A second focus in the literature is the identification and description of clusters (Amin & Thrift, 1992; Anderson, 1994; Raco, 1999; Weijland, 1999; Schmitz &

Nadvi, 1999; Feser & Bergman, 2000; Austrian, 2000; Hill & Brennan, 2000; Sonobe et al., 2002). Given the many variations in the definitions of clusters, it is not surprising that there are several different approaches to identifying them. A third common theme in the literature is cluster policy and how these policies can be incorporated into economic development programs (Humphrey & Schmitz, 1996; Bergman & Feser, 2001; Clancy et al., 2001; Felbinger & Robey, 2001; Cortright & Mayer, 2002; Newland, 2003; Feldman & Francis, 2004). This third theme is the area that this research explores.

Traditional economic development policy has focused on individual needs of specific firms and industries. Cluster policies deal with firms and industries as a system. Proponents of cluster policies focus on developing a strategy that will encourage an efficient allocation of limited resources available for regional economic development, provide a tool for industry recruitment, and encourage diversification of the industry base. Given limited resources available for economic development, it is critical that government allocate these resources in the most efficient way possible in order to meet the needs of established and growing industries. By identifying clusters and understanding specific needs (e.g., infrastructure or work force needs) of the industries within the clusters, government can build on existing strengths in the region and provide more appropriate assistance to businesses. This is in contrast to many current policies, which direct resources at the industries the region hopes to attract, regardless of whether the existing environment is conducive to the development of these industries (Doeringer & Terkla, 1995).

Porter's Model²

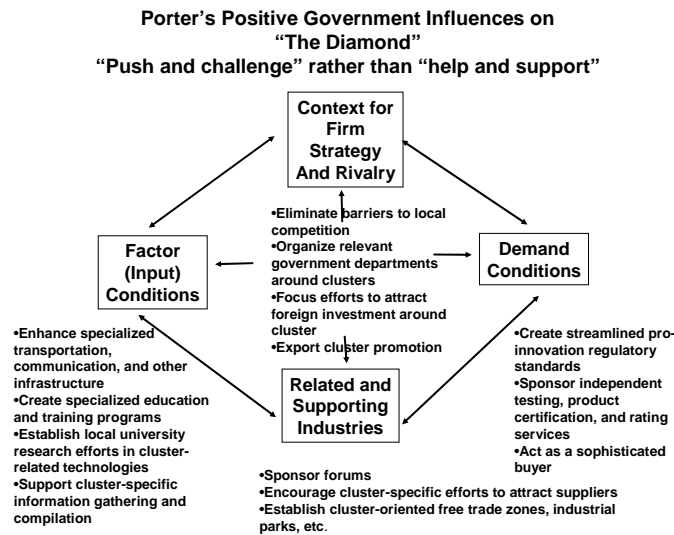
Michael Porter popularized the concept of clusters in his book *The Competitive Advantage of Nations* (1990), so his theories on cluster-based economic development will be explored in some detail. Then some of the criticism of cluster theory will be discussed. According to Porter, business has traditionally gone to government to ask for subsidies, protective tariffs, or special financing schemes. The typical government role is to attempt to "direct" the economy and to allocate capital. In the modern economy, Porter envisions five basic roles for government: 1) to maintain economic and political stability, 2) to improve public goods institutions, such as roads, schools and telecommunications, 3) to create incentives and rules of the game that stimulate productivity and innovation, 4) to establish a positive, distinctive, and challenging long-term economic vision, and 5) to foster and reinforce the cluster formation process (Porter, 2002). These are the roles that governments would fill in regions taking a cluster-based approach.

Based on an extensive study of world economies, Porter determined that "a nation's competitiveness depends on the capacity of its industry to innovate and upgrade" (Porter, 1998, p. 155). The government's role at all levels is to push and challenge industries to innovate and upgrade. Competition rather than cooperation is essential because rivalry forces industries, regions, and nations to shift unproductive resources to uses that are more productive. The principal goal of a nation or region is to produce a high and rising standard of living for its citizens. The ability to do so depends on the productivity with which labor and capital are employed. Porter calls for a new paradigm with regard to determinants of national competitiveness or, more accurately, "the determinants of productivity and the rate of productivity growth" (Porter, 1998, p. 161).

² Birdsall (2004) notes that Porter's Model is really a framework.

Instead of Heckscher and Ohlin’s classical determinants of competitive advantage (e.g., labor costs, abundant resources, and economies of scale) that might have been applicable in the “Old Economy,” economists supporting clusters, such as Krugman (1991), point to externalities as being key. The predicted externalities include knowledge spillover and a shared labor pool. But, empirical support is lacking for external economies (Kim, 1995). Nevertheless, Porter has developed an elaborate model, the Determinants of National Advantage or the Diamond (see Figure 4).

Figure 4. Porter’s Model, Government Influences on Cluster Upgrading (Porter, 2000, p. 251)



In Porter’s model, four interrelated attributes influence productivity in a particular industry: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure, and rivalry.

1. **Factor conditions.** The region’s position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry.
2. **Demand conditions.** The nature of the region’s demand for the industry’s products or services.
3. **Related and supporting industries.** The presence or absence in the region of internationally competitive supplier industries and related industries.
4. **Firm strategy, structure, and rivalry.** The conditions in the region governing how companies are created, organized, and managed, and the nature of domestic rivalry (Porter, 1990, p. 71).

Each of these broad attributes has a mix of categories that contributes to the overall influence of the attribute depending on how efficiently and effectively they are deployed. For example, factor endowment contains categories such as human resources, physical resources, knowledge resources, capital resources, and infrastructure. Firm strategy, structure, and rivalry include goals (both company and individual), the national priority/prestige of business, sustained commitment, and intensity of domestic rivalry. Because most of these attributes are external to the firms, Marshallian external economies of scale are a significant factor in competitiveness, which gives rise to spatial clusters despite the forces of globalization. (Porter refers to this as the global/local paradox.) Hence, many of the most successful firms are located in geographic concentrations of interconnected firms where the factors of the diamond are strong. While many of these factors are innate, some are developed. Therefore, factor development is where government plays an important, but partial role that can have either beneficial or harmful effects.

Porter's theories incorporate some aspects of traditional and second wave economic development (e.g., attracting foreign investment and suppliers, export promotion). However, the target participants are clusters rather than individual companies. Many of the second wave services that economic developers currently provide directly should be offered through networks, such as associations. Porter states that most subsidies and assistance to individual firms distorts the market, so assistance, such as market information, should be supplied to clusters. Thus, Porter is a strong believer in the beneficial power of the market. The government's role is to be a stringent

regulator, prevent negative externalities, and correct market imperfections. Ultimately, undistorted market forces will enhance social welfare.

Cluster-based policies represent a major shift from traditional economic development programs, which focused on individual firm oriented policies. Cluster policies, on the other hand, are based on the recognition that firms and industries are interrelated in both direct and indirect ways. According to Porter (2000), the following policies are cluster-based policies:

- Develop advertisements geared to a particular business cluster
- Conduct promotion activities (e.g., trade shows) targeted at a specific industry sector
- Create specialized transportation, communication, and other infrastructure related to a particular cluster
- Develop cluster specific workforce training programs
- Establish local university research efforts in cluster-related technologies
- Support cluster-specific information gathering and compilation
- Organize relevant government activities around clusters (e.g., hire industry specialists related to a cluster)
- Focus efforts to attract investment around clusters
- Conduct export promotion activities related to specific clusters
- Encourage cluster-specific efforts to attract suppliers
- Sponsor forums or workshops of interest to specific clusters
- Establish cluster-oriented free trade zones, industrial parks, etc.
- Work to streamline regulatory standards for specific clusters

Traditional economic development policy has focused on the individual needs of specific firms and industries. Cluster policies deal with firms and industries as a system.

Proponents of cluster policies focus on developing a strategy that will encourage an efficient allocation of limited resources available for regional economic development.

Despite cluster-based economic development's popularity, there is little research regarding effective performance metrics for this approach. The traditional measures of economic development are the number of new jobs created and tax revenue generated, but it does not appear that these metrics are well suited to cluster-based economic

development. Rosenfeld (1997) presents several criteria that could be used for evaluating the overall success of industry clusters. These include the number of new spin-off business firms generated, the development of new technology and increased research and development capacity, the improvement of labor force skills, and the intensity and quality of firm networks created. Patents are another popular metric. This is an area that requires further research.

Thus, it is important to note that the study of cluster-based economic development is on going. There are contentious and unresolved issues. Nevertheless, Porter's work is the most studied and tested perspective. Therefore, Porter's model will serve as a base and an institutional/political context framework will be added to his model.

Critique of Clusters

It important to note that cluster-based economic development has not been without criticism in research literature. Rosenfeld (1997) discusses of some of the general criticism of cluster policies. The major concern is that cluster policies encourage over-specialization in the economy. If the industries in the cluster fail, then the economy in the entire region is damaged. Many leaders choose to encourage diversification of the economy, and fear that the use of a cluster policy will run counter to this effort.

Secondly, cluster policies are criticized for being more applicable to small, specialized firms, particularly because of the level of trust and cooperation required for a successful cluster. Critics claim that in reality large, multi-national companies dominate the current economy, and these companies will undermine the trust that is required for a cluster to be successful (Harrison, 1994). A third criticism of cluster policies is that they only apply to urban areas and that rural areas lack the necessary scale for a cluster. In their study of

clusters in Maine, Colgan and Baker (2003) found this urban/rural equity to be an issue. Finally, critics claim that new telecommunications technology is replacing the need for spatial clustering so that firms no longer receive a competitive advantage from close geographic proximity. In addition to practitioner based criticism, there are a number of academic critics of cluster-based economic development.

There is social equity-based and theoretical criticism of cluster-based policies, which are worth noting. Some pundits argue that cluster-based economic development will not necessarily lead to societal objectives (America, 1995; Blakely, 1995; Henry, 1995). In fact, these policies could potentially lead to greater inequality, negative externalities, and lower quality of life for the uncompetitive. For example, in a reply to Porter's call to use his model in the inner cities, Henry (1995) writes, "development involves considerably more than provision of a hospitable environment for private profit-seeking enterprises. This approach per se will simply add to the sum of human misery...development requires a broad, innovative and refreshing approach in which the socioeconomic well-being of the residentiary is paramount" (p. 153). Further, Harrison and Glasmeier (1997) critiqued Porter's cluster theories on two points. First, they claim that cluster development is more appropriate in areas where there is already an existing, diverse economic base that can support new markets and diversification. A second criticism is that industry clusters are only capable of responding to small, incremental changes in technology and market demand. However with larger changes, Harrison and Glasmeier claim that clusters can be resistant to new information because a radically transformed context may introduce changes that are drastically different from the

processes used for previous successes. Thus, many scholars contend that clusters should come with extreme caveats (Martin & Sunley, 2003).

It is interesting to note that some of the critiques leveled against cluster-based economic development are compatible with the public policy and local political perspective presented in much of the political economy literature. Nevertheless, the insights from this literature are somewhat neglected in the economic cluster-based literature, including Porter's model.

Combining the Literatures

There has been no attempt to combine the cluster-based economic development literature with the community power structure literature; nor are there comprehensive empirical studies of how public policy factors may interact with economic factors around the decisions to employ cluster-based economic development strategies. This research will try to fill the gaps in our knowledge about the relationship of forces affecting cluster-based economic development strategies through an initial development of a conceptual framework that combines the community power structure literature with Porter's framework (see Figure 5). Then, through empirical investigation of different five different regions, including the perceptions of economic developers, the framework will be refined in order to begin to fill the politics and institutional governance gap in the cluster-based economic development literature.

Figure 5. Conceptual Framework Based on the Literature Review

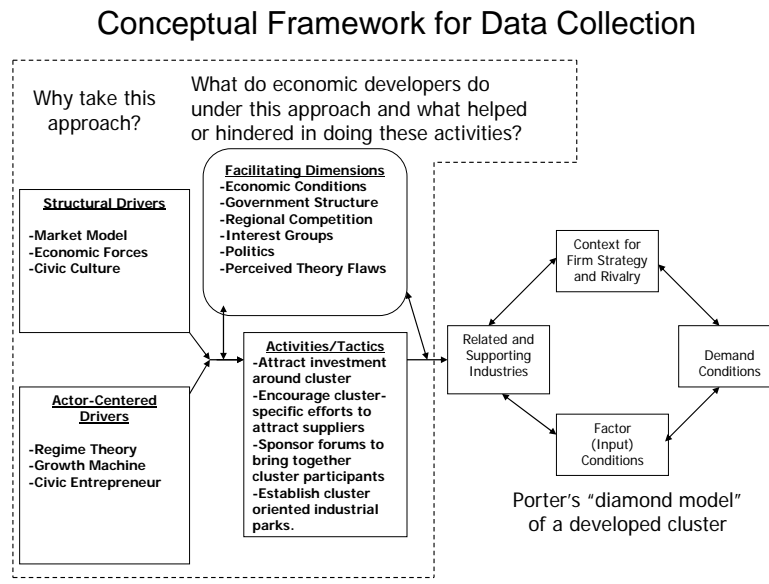


Figure 5 pulls together the literature into a conceptual framework which will inform the data collection. On the left hand side of the framework are the dominant theories used to explain why communities adopt economic development policies. There have been extensive empirical studies to test the various theories on economic development in general so it is presumed that they would have explanatory potential for cluster-based economic development (see Appendix A). However, these theories have not been applied to cluster-based economic development. The studies in Appendix A include a number of controlling dimensions, or dummy variables, in the statistical analyses. These are factors would be expected to help or hinder implementing a cluster-based economic development strategy, but not be a driving force. These are facilitating dimensions of the actual cluster-based activities called for by Porter. If Porter is correct, then these economic development activities would lead toward a successful cluster. Thus, the literature was the basis for the conceptual framework, and its operationalization will be presented in the next chapter.

Chapter Three

Methodology

This is an exploratory study of local/regional economic developers in the United States and the relatively new trend of cluster-based economic development. It uses qualitative triangulation of interviews of economic developers with a study of commercial publications and academic research to paint a probable scenario for the drivers and facilitating dimensions of cluster-based economic development policy. A conceptual framework is used to narrate the findings and lay the groundwork for further empirical testing of this framework.

Yin's (1994) theoretically informed multiple-case studies approach examining the influences on local economic development strategies was used for this research. The research followed Eisenhardt's (1989) process of deducing theory using case studies. The mode of analysis is rival explanations (i.e., community power structure theories) as patterns. The focal level of analysis is economic regions. Although the focal level of analysis is the economic region, the study examines dynamics at numerous levels including the individual, organizational, local government jurisdictional, network, and state. The unit of observation is individual economic developers in regional economic development organizations and embedded county/municipal economic development organizations. Markusen (1994) points out that individual firms' geographic strategies shape the character and vigor of regional economies hosting them so individual firms were observed via secondary data. Cases were selected in order to have varying values on key dimensions/variables that could tease out influencing variables. All five cases have officials who claim to be engaged in "cluster-based economic development" but they

differ substantially on what that means in practice, on how it has been implemented and evolved over time, on the primary drivers and facilitators/restraints, and on apparent “effectiveness.”

Case Selection

The potential population of regional economic development organizations is large. For example, Wagner and Forman (2000) identified between 30,000 and 60,000 organizations nationwide dedicated to promoting local, state, and regional economic growth. The U.S. Census (2005) has designated 362 metropolitan statistical areas and 560 micropolitan statistical areas in the United States. Each of these jurisdictions probably has at least one regional economic development organization so the potential population is likely to be approximately a thousand. Given the limited number of cases that could be studied in the required detail, cases were selected where the economic development process was accessible for study. Cases were selected in order to have varying values on key dimensions/variables (King et al, 1994). The goal of the theoretical sampling was to choose cases which are likely to replicate or extend the emergent theories and lessen selection bias.

The economic development regions selected for the field studies are: 1) Austin, Texas; 2) Portland, Oregon; 3) Greenville/Spartanburg, South Carolina; 4) Lynchburg, Virginia; and 5) Roanoke, Virginia. See Table 3 for a comparison of general population, social, economic, and housing characteristics of the five field study regions. This table highlights that Austin and Portland are considerably larger and wealthier than the other field study cases. Greenville/Spartanburg is in the middle. Figure 5 shows the historic population growth of the field studies’ core cities. In the 1880s, all five of the field study

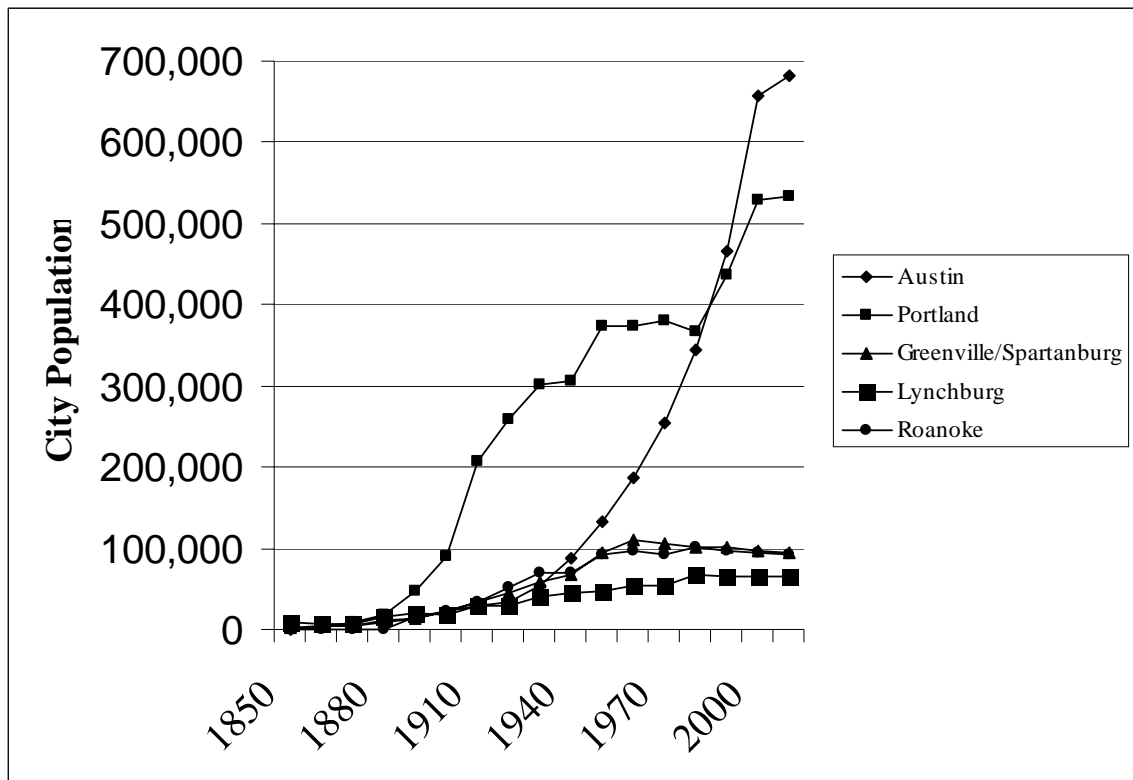
cities had populations of approximately 20,000. Until Austin’s population exploded in the 1940s, Portland and Roanoke experienced the most significant growth since the 1880s, each increasing over 300% (90,426 to 301,815 and 21,495 to 69,206 respectively from 1900 to 1930). As we shall see in the field studies, the regions were economically similar a hundred years ago, but each region followed different economic trajectories. It is this economic trajectory of the long term phenomena of industrial clusters that needs to be understood in order to make sense of the context in which regional economic development policy is forged. Thus, one of the assumptions of this research is that we cannot understand where a region is going until we understand where it has been.

Table 3. Socio-Economic Comparison of the Regions (Source: U.S. Census Bureau, 2005)

	Austin	Portland	Greenville/ Spartanburg	Roanoke	Lynchburg
General Characteristics					
MSA population (2000)	1,249,763	2,265,223	962,441	235,932	214,911
Population growth (10 yrs)	48%	26%	16%	5%	11%
Net migration rate for the young, single, and college educated	44	268	-104	47	-156
White race	68%	79%	62%	69%	67%
18 years and over	76%	78%	80%	77%	78%
65 years and over	6%	11%	14%	16%	16%
Social Characteristics (2004)					
High school graduate or higher	82%	88%	79%	76%	78%
Bachelor's degree or higher	40%	37%	34%	19%	25%
Foreign-born	20%	14%	4%	3%	3%
Economic Characteristics (2004)					
Median household	\$40,921	\$40,885	\$33,144	\$30,719	\$32,234

income (dollars)					
Individuals below poverty level	16%	16%	16%	16%	16%
Unemployment rate	5%	6.1%	5.6%	3.4%	2.6%
Housing Characteristics (2004)					
Median value (dollars)	\$163,027	\$182,054	\$118,100	\$80,300	\$85,300

Figure 6. Historical Population Trends



Austin, Portland, and Greenville/Spartanburg were selected because they are high profile cases known for their differing perspectives on economic development. Perhaps the only region that receives more attention in the literature is the Silicon Valley. Austin, dubbed the “Silicon Hills,” exemplifies a university/business partnership approach to high technology-led economic development. On the other hand, Portland is nicknamed the “Silicon Forest” and has a reputation of also being a high technology mecca without a major research university, but one that puts great emphasis on environmental and quality

of life issues. Greenville/Spartanburg is not a silicon anything. Instead, this landlocked region in the old south has a reputation as a world leader in traditional, albeit highly agile, manufacturing. This community is known to have taken a more traditional approach to attracting industry to its region. Thus, these three cases are well-known and researched areas that have taken apparently very different approaches to economic development.

Lynchburg and Roanoke would appear to be dissimilar from Austin, Portland, and Greenville/Spartanburg. These mid-size cities in the Shenandoah Valley of Virginia get little if any attention in economic development literature. They are not known for particularly innovative approaches to economic development and would appear to be typical second tier cities. This gives them an interesting contrast to the three main field studies of first tier city regions. In addition to accessibility, Lynchburg and Roanoke are in the same state so this will provide some control for the context in which these regions operate. Previous research has pointed to the importance of state legislation on local economic development policy choice (Reese & Malmer, 1994). The field studies were expected to have varying values on key dimensions. Portland, Austin, and Greenville/Spartanburg are considered prime examples of cluster-based economic development, albeit with different perspectives on how to develop their clusters, while the second tier cities of Lynchburg and Roanoke are considered to follow more traditional economic development approaches.

Research Design

Research consisted of extensive secondary data analysis, semi-structured interviews of economic developers, and field visits to the regions. This was conducted in an iterative process. Prior to conducting the interviews and site visits, articles and books

on the cities were reviewed in order to gather a basic understanding of the region's economic development efforts. Interviews and field visits were conducted from summer 2004 to summer 2005. Newspaper research was conducted after the interviews and field visits. Follow-up telephone calls were made as required to clarify certain points. The data analysis and write-up were completed in the fall of 2005.

Secondary Research Data Collection

Academic resources. In order to analyze the history and socioeconomic characteristics of the locality over time, research was conducted primarily using books, academic journal articles, and dissertations. Each case had several books written by local authors on the history of the city. Some of these books were very recent while others were written over one hundred years ago. Additionally, other books used the major case study regions as examples. Many academic journal articles have been written about Austin, Portland, and Greenville/Spartanburg that were insightful for the research. Finally, dissertations were particularly useful resources for insights on the regions.

Professional resources. Economic development strategies and planning documents were helpful resources for better understanding economic development policies. Typically, these reports were prepared by economic development consultants. It was particularly intriguing to review economic development strategies from the early 20th century that are remarkably similar to more recent professional studies. Although the term "clusters" was not used, the concept of interrelated firms in an industry group was prevalent. Websites, press releases, and newsletters of the economic development organizations were also reviewed. Finally, promotional pamphlets, dating from the 19th

century to today, developed by community boosters were perused. Chamber of commerce magazines were particularly useful.

Newspaper and periodical resources. Local newspapers were especially valuable for understanding local economic development activities. They regularly had extensive stories on economic development organizations. The coverage was certainly biased toward industrial attraction rather than more mundane activities of economic development. Many of the smaller local papers were not electronic so use was made of microfilm and interlibrary loans. Virginia Tech's short lived subscription to ProQuest historical newspaper data base was an effective resource for piecing together the historical path of economic development. Finally, regional business magazines were reviewed.

Data Collection and Analysis

Primary data was collected using personal and telephone interviews as well as through field visits to the locations. In addition to conducting interviews during the field visits, industrial sites, research centers, incubators, and local history museums were toured. Initial field visits were made to Roanoke, Virginia in 2004 because of its proximity. In 2005, field visits were made to Austin from May 11 to 15, Portland from June 15 to 19, Greenville/Spartanburg from June 22 to 24, and Lynchburg in a series of trips in July.

Interviews. Building a framework based on field studies of the interpretation of economic developers, the "elite" perspective as described by Marshall and Rossman (1999), is the most efficient method to begin the process of developing an overall conceptual framework for cluster-based economic development. However, concentrating

on the perspective of economic developers may be a major limitation of this dissertation. Twenty-eight semi-structured confidential interviews were conducted using a standard questionnaire in the five case study regions. Based on the methodology laid out by Babbie (2001) for conducting interviews, representatives from the regional and local economic development organizations were interviewed. Appendix B has the interview questions and a list of the confidential interviewees. Because the interviewees were questioned confidentially, the quotes will not be credited in this dissertation. The purpose of the interview was to determine: 1) what economic developers see as impelling the adoption of a cluster-based economic development strategy; 2) what cluster-based economic development tools do economic developers adopt and why they believe that they chose those particular tools; and 3) what factors helped or hindered their taking a cluster-based approach. A uniform script of questions from an interview guide was asked of each economic developer, although the particular order and emphasis varied by exigencies.

The interviewees were selected in order to represent the organizations in the region whose main focus was economic development. The statutory economic development organizations were the targets. Therefore, economic developers were selected from the regional economic development organization and most of the county or city economic developers in the region. If there was more than one regional economic development organization then someone from each regional development organization was interviewed. Promoting regional economic growth involves a plethora of public, private, and non-profit organizations so it would have been difficult to interview every

organization involved with economic development. Thus, the choice was made to interview the main regional and local economic development organizations.

The half-hour to one and a half hour semi-structured interviews were based on the conceptual framework developed from the literature review (see Figure 6). Most of the interviews were face-to-face, but some were done via teleconference. The economic developers were asked about the structural and human agency factors that the literature predicted would be drivers of economic development. For example, we discussed whether they saw a unitary interest for growth and how economic forces shaped policy. We also spoke about key individuals, as well as expected players in the economic development process, such as bankers and land developers. Further, what helped or hindered their taking a cluster-based approach was investigated. The conversations often digressed, but I assured the points on the interview sheets were covered.

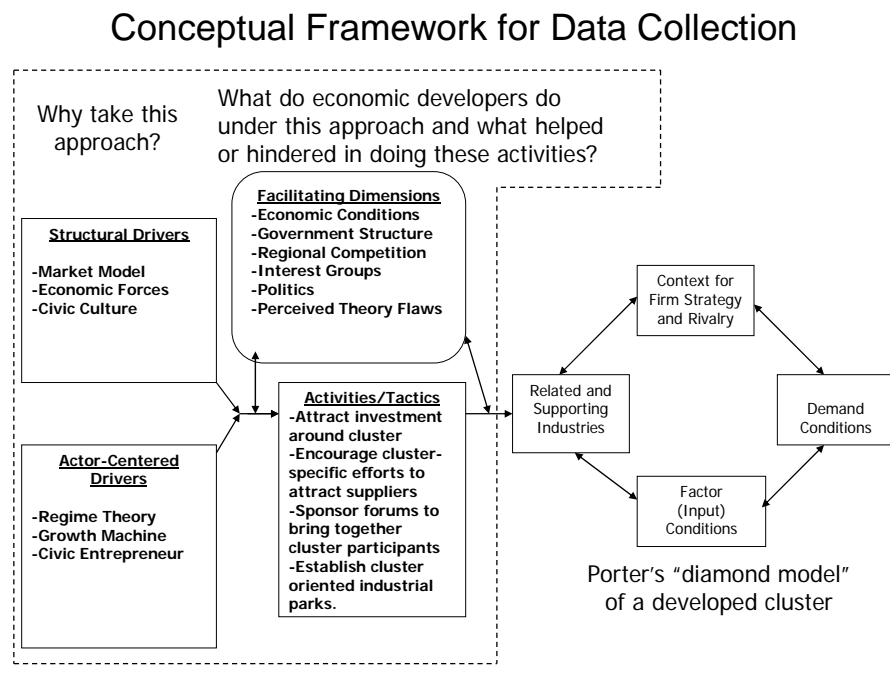
Every individual asked for an interview agreed to the confidential interview. The interviews were cordial and the economic developers seemed to enjoy discussing their activities. Several noted that they appreciated the chance to put their efforts in perspective. They seemed forthright in their answers and seemed to intuitively understand the community power structure theories when presented in basic terms. Most were familiar with the work of Michael Porter. Richard Florida and Stuart Rosenfeld were other economic development pundits commonly mentioned in the interviews.

The interviews were digitally recorded. I transcribed them in to a MS Word document. IBM ViaVoice for Windows was used for some of the transcription. The data were then analyzed for themes and coded with the assistance of QSR's N6 (formerly NUD*IST) qualitative data analysis software. However, this software package was far

more elaborate than required for analyzing 28 interviews and provided limited value for this exploratory study.

The coding closely followed the questions posed, which in turn was based on the conceptual framework. For example, the response to the question, “Has the ‘growth machine,’ that is the bankers, lawyers, real-estate developers that directly benefit from economic development been influential?” was coded as “growth machine.” It was a very straightforward coding process because of how the interview was structured; however, interpreting the findings was more complex.

Figure 7. Conceptual Framework Driving the Data Collection



Data collection was conducted under the erroneous assumption that the model-like framework could eventually be statistically tested. The dependent variable was the economic developers’ perceptions of whether the region had adopted a cluster-based economic approach, and the independent variables were derived from the literature review. If the economic developers claimed they were taking a cluster-based approach

and reported they performed the activities recommended by Porter (1998), then they were coded as taking a cluster-based approach. It was planned to be dichotomous coding with the possibility of using the activities/tactics in the box in the middle of the framework to develop a possible intervallevel dependent variable. Wolman and Spitzley (1996) describe the issues with attempting to operationalize the extent of economic development activities using these types of measures. The rival theories from the community power structure literature were to be the independent variables or drivers on the left side of Figure 7. On the top of the framework are the moderators. The exploratory framework was then to be flushed out so that a testable hypothesis could be stated (e.g., tested with data from a survey or more interviews).

Coding

It is often difficult to define the theoretical propositions of the conceptual framework. Where possible, the operationalization protocols from prior studies of the community power structures and economic development were employed. The following are the rules that were utilized to tap into the various rival theories of the conceptual framework.

Cluster-based development policies. The dependent variable in the variance theory driven conceptual framework from the literature was the presence and level of cluster-based policies. The economic developers were asked whether they believed they were taking a cluster-based approach and asked to identify which of the following of Porter's (2000) cluster-based activities were present in their region.

- Advertisements geared to a particular business cluster
- Promotion activities (e.g., trade shows) targeted at a specific industry sector
- Specialized transportation, communication, and other infrastructure related to a particular cluster

- Cluster specific workforce training programs
- Local university research efforts in cluster-related technologies
- Cluster-specific information gathering and compilation
- Government activities organized around clusters (e.g., hire industry specialists related to a cluster)
- Efforts to attract investment around clusters
- Export promotion activities related to specific clusters
- Cluster-specific efforts to attract suppliers
- Forums or workshops of interest to specific clusters
- Cluster-oriented free trade zones, industrial parks, etc.
- Streamlined regulatory standards for specific clusters

This did not turn out to be a reliable means to operationalize variation in cluster-based economic development because each region claimed to be doing cluster-based economic development, as well as the activities mentioned above. Clearly, more research is required on how to operationalize cluster-based economic development.

Wolman and Spitzley (1996) present some of the difficulties and recommendations regarding the operationalization of economic development as a dependent variable. The first issue with operationalizing cluster-based economic development is defining what this strategic policy entails. This study used Porter's (2000) outline of cluster-based policies.

The next challenge is determining what aspects of the approach are being emphasized in the region. This could be done with a survey asking community leaders to rate the importance of the various activities mentioned above in order to see if they continue to deem the more traditional activities (e.g., recruiting new firms) as the emphasis of economic development. Another method would be to see how much is budgeted for the various activities, but economic budgets are often difficult to disaggregate into useful categories. The objective of both these approaches is to evaluate whether and to what extent the economic development efforts are geared toward

networking the members of the cluster and developing the positive externalities of the cluster. Clearly, operationalizing the extent of cluster-based economic development can be challenging and requires further research.

Actor-Centered Independent Variables

Regime theory. Elkins (1987) purports that regime theory rejects structuralism, and emphasizes the importance of agency in politics, so this theory is considered an actor-centered theme. According to Stone (1989), the regime is an informal yet relatively stable group with access to institutional resources, and which has a significant impact on local policy and administration. It is not a coherent organization or association, but an informal group of influential persons who derive their power from different sources, who share some policy objectives, such as promoting economic development, and who can gain economic, political or social rewards from their involvement. The regime is formed on an informal basis for coordination and without an all-encompassing command structure. According to regime theory, economic development policy is dependent on institutional arrangements, business interest mediation, and some degree of popular control. What is essential is the fact that all the key institutions and actors are involved in an extremely complex web of relationships. Social control and effective management are limited to particular aspects of local development and policy choices. Collaboration is achieved not only through formal institutions but also through informal networks.

Mossberger and Stoker (2001) pointed out the challenges of operationalizing regime theory and thus developed core criteria of an urban regime that was utilized

1. The network must include government and non-government actors and in particular, business actors;
2. None of the participating entities could achieve their social goal on their own;
3. There are identifiable policy agendas;

4. There is a continued pattern of cooperation.

Growth Machine Theory. According to Molotch (1976), local economic development is the expression of a land-based elite. Such an elite (e.g., bankers, real estate, and property developers) is seen to profit through the increasing intensification of the land use of the area in which its members hold a common interest. Governmental authority is utilized to assist in achieving this growth at the expense of competing localities.

The growth machine thesis argues that cities are ruled by a coalition of local business and local government that comes together to pursue an agenda of growth and intensification of land use. This growth coalition dominates local politics through creating the political consensus that growth is good for all. Once consensus is established, the growth machine is able to go about creating economic development policy.

Cox and Mair (1989) have developed the Logan and Molotch model further, rejecting what they see as a narrow emphasis on property for a wider notion of local dependency on economic development. This perspective was utilized in this dissertation. The core criterion is whether the individuals or institutions directly benefit from economic development activity and not just from land use intensification. Thus, consultants and lawyers could be considered part of the growth machine.

Civic entrepreneurs. Civic entrepreneurs or policy entrepreneurs are individual leaders. These are the private-sector business owners and managers who bring their vision and commitment into the arena of regional cluster development. Civic entrepreneurs are generally CEOs and business owners, but can also be government officials, educators, union officials, or non-profit leaders (Hansen, 2002). As Henton

(1997) writes, “When others see problems and gridlock, civic entrepreneurs see opportunity and mobilize their communities on a path forward” (p. 87). Individual leaders who were identified as being important to economic development policy by economic developers were considered to be civic entrepreneurs.

Structural Factor Independent Variables

These are factors generally outside an economic developer’s direct control. Examples from the literature review are in Table 4. If these factors (e.g., civic culture) were identified in the interviews as driving economic development policy choices, then they were considered structural factors influencing policy.

Table 4. Structural Factors From the Literature Review (see Appendix A for specific citations)

Structural Factors
Partisanship of elections, city manager, executive veto, and ward system
Citizens’ needs, urban capacity, fiscal need, and process of growth
Economic distress (i.e., fiscal stress, unemployment) and accessibility (i.e., citizen participation, locus of decision-making)
Property tax stress (tax per capita, tax dependence)
State level enabling legislation
Residential need (average income, poverty rates, and unemployment) and governmental structure
Global competition
New Economy

Market model theory. Peterson (1981) argues that civic entrepreneurs and governing regimes are subordinate to the overall economic principles that force communities to compete to capture new investment and capital. He writes that the competitive nature of cities encourages the business elite and politicians to favor new development projects, concluding that successful cities require a local infrastructure that is supportive of the needs of business and economic development. Despite the appearance

of conflict and the pursuit of particularistic agendas, developmental policymaking is still overwhelmingly in the unitary interest of the community.

This economically-based theory is built on the belief that communities should seek to upgrade their economic standing by competing against other communities to attract new businesses and jobs through economic development. Communities are successful when they entice new jobs and development projects to their boundaries following the logic that what is good for business becomes good for the community. Framing development in strictly economic terms, Peterson claims that the decisions are governed by rational principles designed to increase public utility. Thus, if economic developers talked as if the community was forced to act as a rational economic actor with a unitary interest rather than a political actor with multiple interests, then this was coded as supporting the market model theory.

Civic culture. This is a rather nebulous concept. Coding relied on the operationalization protocols of Reese and Rosenfeld (2001). They have an elaborate schema covering community values, public decision-making systems, and how communities balance power among groups.

Triangulating the Data Collection

The secondary research material and interviews were used to cycle between theory and data in order to develop a revised conceptual framework. Prior to visiting each field site and conducting interviews, extensive reading was done on the region's economic history. While visiting the regions, interviews, guided by the theories developed in the literature review, were conducted and relevant sites toured, including local history museums and industrial parks. While analyzing the interview data,

extensive secondary research was conducted in the context of situations that the economic developers described. For example, local newspaper accounts of the struggle between the Greenville Chamber of Commerce and the Greenville local government were examined to compare with the interview accounts of this incident. This kind of triangulation technique allowed plausible findings to be uncovered. The findings were then narrated into a modified conceptual framework. In sum, the research started with theory from the literature review to gather data and then this data was cycled back to revise the theory. This revised theory is presented as a framework; after empirical testing, it will fill the literature gap, which is a missing perspective of the political/institutional context of cluster-based economic development.

Limitations

The methodology in this exploratory study is not without limitations. In particular, interviewing four to six economic developers in each region is likely to result in bias. The problem is not the *number* of economic developers. It was found after the second economic developer interview that they were painting the same pictures. Where the greatest bias is likely to occur was from not interviewing other actors in the economic development process, such as elected officials, business owners, and educators. These actors might have given a more complete picture of the economic development process.

Other limitations include the number of field studies conducted and not selecting a great enough variation in cases. Three of the five field studies were selected because they are high profile cases. It would have been insightful to examine more second tier regions to see if the findings in Roanoke and Lynchburg applied to other less studied communities.

Part II. Field Studies

Chapter Four

Field Study of Austin, Texas

Austin was selected for a field study because it was purportedly a community where economic development policy made a difference. As one Austin economic developer noted,

Austin as you have gathered did not organically become a technopolis. It was created. It was created by a small handful of people including, George Kozmetsky, and a few other civic and political leaders, industrial leaders. Not a large group of people. They provided the vision and the motivation for what Austin was going to be. I think in some respects Austin is not unlike other cities in that it is uncoordinated and everyone does their own thing.

The capital of Texas is noted for having a high technology cluster of world class microelectronic companies that would not have developed without economic developers, so it seems an appropriate place to start this exploration of community power structures and cluster-based economic development.

Organization of This Chapter

The chapter is divided into seven sections. The first section gives a brief introduction to Austin's economic situation. The second section presents the findings from the confidential interviews of Austin economic developers on their perspectives on cluster-based economic development in Austin. The third section covers Austin's historical evolution. Details of its early history prior to 1940 can be found in Appendix C. The fourth section is an illustrative example of economic development. The next section presents findings on the application of the community power structure theories to Austin. The sixth section presents broad implications from Austin regarding economic development. The final section is concluding remarks on Austin.

Introduction to the Trials and Tribulations of Creating a Technopolis

Most of the economic histories of Austin start from the latter part of the 20th century, but to understand the political and institutional context of economic development in Austin today, it is important to go back to Austin's beginnings in the 19th century. From this perspective, the political/ institutional themes for Austin's development become clearer. First, Austin has struggled, and continues to struggle, with achieving consensus regarding the need for industrialization. Second, Austin's development has been led by key strong civic leaders. Third, the federal government has played an important role. Fourth, the local government and, until recently, the state government has played a more marginal role. Finally, the political and institutional context is changing toward a greater balance between public and private-driven economic development.

Economic Developers' Perspective on Cluster-Based Economic Development

Austin believes it is doing cluster-based economic development. Austin's economic developers stated four primary reasons for adopting a cluster-based approach. First, consultants make the recommendation to the community to take a cluster-based approach. Second, clusters can more quickly generate "low-hanging fruit," especially for cluster suppliers. Third, it is easier to coordinate activities and programs among similar industries that benefit a greater constituency. Finally, there is a greater return on investment using this approach. A Chamber of Commerce official elaborated on Austin's approach,

I think Austin attempts to take a cluster-based approach. By definition, a cluster-based approach is industries that feed off one another. Maybe that's labor or something that ties these companies together. Austin practices a cluster-based approach based upon the existing industry that is here, I do not think Austin went out to try to do cluster-based development... Today, we are diligently pursuing a mature industry. Austin has never had a

mature industry like Houston with its oil and gas. Even though semiconductors is mature, you can go back to 1985 and it was not a tenth of what it is today. I think Austin is going out to attract semiconductor, high-tech, nanotechnology and as a result of what we have, these industries are feeding upon what we have here.

The Chamber official went on to describe how Austin's cluster-based approach had its roots in history, "Traditionally, Austin was state government and a university. It always was a large university. A lot of that talent of the university was high-tech back in the 1970s era that became the semiconductor industry. Of course, Dell computer was headquartered here. This allowed semiconductor equipment companies to cluster." He went on to describe how human agency then played a role, "You definitely have a cluster of the semiconductor type companies and I do believe that Austin went out to make that happen. There are a lot of people here who were very key in nurturing that once it got going and capitalized on it." Austinites believe that skilled labor is their strength and catalyst for economic development growth, so taking a cluster-based approach is a pragmatic response of civic entrepreneurs to this contextual factor.

The general consensus among the economic developers interviewed was that only after the high technology economic crash of 2001, and a subsequent consultant's report, did Austin start taking a cluster-based approach to economic development. Prior to the crash, they had a cluster-based strategy in place, but because the economy was so good, they got away from cluster-based economic development.

Austin's rise as a high technology mecca was built on a variation of cluster-based economic development, the technopolis model, which is a utopian concept for a government-business-academia industrial technology complex. The economic developers interviewed generally felt that a cluster-based approach was needed to revive

from the recent recession. When Austin's economy was humming in the late 1990s, the economic developers got away from strategic economic development and concentrated on solving short term economic problems, such as finding workers for the semiconductor industry. They did not prepare for the technology crash. Today, they are concentrating on more than just semiconductors. In addition to developing a more diverse group of clusters, they are trying to look to the next generation of clusters, which the Austin economic developers referred to as "super clusters."

Hindrances to cluster-based economic development. The economic developers identified a number of hindrances they face in taking a cluster-based approach to economic development. First, Austin's phenomenal growth was perceived to be inspired by key civic leaders; however, these leaders are geriatric and a new generation of leaders has not emerged. Second, there is no consensus in the community for continued industrial growth. Third, elected officials have a short-time horizon. This makes it difficult to carry out long term cluster-based development.

Finally, there is a tension between traditional business-led economic development and political entities. The economic developers in the Greater Austin Chamber of Commerce perceived local government as being an obstacle to innovative economic development because political leaders wanted more control than Austin's Chamber-led economic development approach allows. As one Chamber official commented, "Austin's government had a reputation for not being business-friendly for new businesses coming in and there are certain industries that the city does not want in certain areas. So we have been working diligently with the City of Austin on the business climate for us, the city, and the community that fits the city's overall growth plans with the land use, while being

sensitive with the environment, while being sensitive to attract those businesses that we believe will attract Austin to its next stage as leadership in high-tech.” These factors hinder, but are not preventing Austin from taking a cluster-based approach to economic development. In order to understand how these factors currently play out, it is essential to understand Austin’s humble beginnings and non-organic growth to become the Silicon Hills.

Historical Evolution of Austin

Vision to be more than a center of education and politics. The commissioners who selected the site for Austin in 1839 envisioned not just a political city, but rather an entrepôt for the rich fertile lands and the trade routes that converged there (Humphrey, 1997). Regardless of these early aspirations to be a center of business, it would take over one hundred years for Austin to become more than a governmental center. An uneven period of growth began with the arrival of the railroad in 1871 and the founding of the University of Texas (UT) in 1881. Nevertheless, industrialization continued to elude Austin and the economy remained sluggish into the early 20th century. The Chamber of Commerce and its President, Walter E. Long pursued and defended Austin’s no-industry growth plan (Bridges, 1997). Clearly, many Austinites were content to remain in a placid non-industrial community, and despite rapid growth, this tension still remains (see Appendix C for details of Austin’s early historical development).

Federal investment leads to a constitutive moment. Thanks to its twin foundations of state government and education along with large infusions of federal government funds, Austin was spared the devastation of the Great Depression faced by industrial and commercial centers. Utilizing the political skills of Mayor Tom Miller and

a young U.S. Congressman, Lyndon Johnson, Austin received an overwhelming share of New Deal funds (Humphrey, 1997). This included putting dams on the Colorado River to promote industry, which many Austinites opposed, especially the Chamber of Commerce, because of the perception that manufacturing attracted the wrong type of people (Orum, 1987). Despite the resistance, this federal largesse allowed Austin to ride out the Depression and started the trend of federal funds being the catalyst for Austin economic development.

During World War II, Bergstrom Air Force Base was opened and a magnesium mill was built to refine dolomite for the military. After the war, UT, with the support of Representative Johnson, was deeded the dolomite plant and turned it into the Balcones Research Laboratory (now called the J.J. Pickle Research Campus) for the emerging field of electronics. This effort was spearheaded by a small group of businessmen and was the first indication that the power of the old generation no-industrial growth coalition was slipping (Orum, 1987). The military contracts for radar, sonar, and other defense-related businesses helped train hundreds of scientists and technicians. Balcones proceeded to serve as an incubator for many companies, including Radian Corporation and Tracor. The latter became the first Austin-based Fortune 500 company, and at one point, one of its largest employers. In turn, over twenty Austin companies were spin-offs of Tracor and Radian (Smilor et al., 1988). It was clearly not foreseen that the “historical accident” of establishing a small electronics research center in the late 1940s would fifty years later lead to the development of the Silicon Hills.

Civic entrepreneurs struggle against anti-industrialization regime. However, by the 1950s Austin was still primarily a sleepy college town of 130,000 residents whose

principal employers were the university and the state government. Industrialization was not a priority with Austin's business community (Robbins, 2003). C.B. Smith, the owner of an auto dealership, decided to change this, and created the Austin Area Economic Development Foundation with 400 members and a staff of four, whose purpose was to promote Austin as a site for industrial relocation and make the area business friendly. After some success, the organization folded in 1951, and its remaining resources went to the Austin Chamber of Commerce, which was not an enthusiastic supporter of industrial recruitment at the time (Orum, 1987). The anti-industrial development forces were still too strong.

This began to change in 1956 when the Chamber hired Vic Mathias as president, who was concerned about the lack of jobs in the area for UT graduates and the massive amount of tax-exempt government property in Austin (Robbins, 2003). In 1957, the Austin Chamber of Commerce hired a full time industrial recruiter and consultants from UT's Bureau of Economic Geology to make recommendations on how to grow the economy. The report recommended that Austin develop, in addition to poultry and air conditioning equipment, light manufacturing with a focus on the electronics industry. The latter would build on the externalities of the Balcones Research Laboratory.

The first success from this plan came in the early 1960s when IBM opened a plant to manufacture Selectric typewriters. IBM was followed by Texas Instruments (1966), Westinghouse (1971), Motorola (1974), and Advanced Micro Design (1979). By 1978, 11% of all jobs in the area were manufacturing related, up from an estimated 2% when the industrial recruitment effort started. These branch plants chose Austin for the typical locational factors of low land costs, low-cost educated workforce, decent infrastructure,

and access to the growing southwestern markets (Davis, 1994). The Chamber-led targeted industrial recruitment effort was paying off.

Rapid growth in the 1970s contributed to more civic and cultural activity. Strong neighborhood, environmental, and historic preservation communities sprang up, and remain an integral part of Austin's civic life. These groups are often at odds with the economic development community. The "Town and Gown" network was established to strengthen ties between businesses and the university. Austin's musical rebirth began in the 1970s at a now defunct music emporium known as the Armadillo World Headquarters. Artists such as Stevie Ray Vaughn and Willie Nelson, seeking to escape the music industry's corporate domination in Nashville, drew national attention to Austin. The city became a music mecca, attracting the creative class to the self-proclaimed Live Music Capital of the World. Although these quality of life developments were not a conscious part of Austin's economic development effort, they were important to its economic growth.

Civic entrepreneurs' vision for a technopolis. One of the most influential individuals in Austin's early economic development was Dr. George Kozmetsky, who was one of the co-founders of Teledyne in Silicon Valley. Kozmetsky came to Austin in 1966 to become Dean of UT's College of Business Administration. He also came because he wanted a place to test his theories on capitalism and technology. Austin was small and unfettered by regulations, so he felt that he could try social experiments and measure results. Many of the organizations that would be integral to Austin's economic growth were conceived by Kozmetsky. Clearly, human agency was an important factor in Austin's development.

Kozmetsky helped found many institutions to see his experiments through. The main vehicle for his tests was the IC2 Institute at The University of Texas at Austin, which was founded in 1977. It is an international, transdisciplinary "think and do" tank devoted to solving economic problems in order to accelerate wealth and job creation in Austin and around the world. IC2's "early experiments" such as the Austin Technology Incubator (ATI), The Capital Network, and the Austin Technology Council, are ongoing activities that continue to contribute to the region's tech-based growth, and continue to serve as "experiential learning laboratories." Thus Austin's growth was not organic. Rather it was an attempt by a small handful of civic and political leaders, including Kozmetsky, to found their vision of a technopolis.

In the 1980s Kozmetsky helped to create the concept of the "Technopolis Wheel," which has been the heuristic framework for Austin's economic development (Smilor et al., 1988; Miller, 2002). The roots of the technopolis concept, a utopian, radiant city based on science and technology, sprang from the humanistic mind of the Renaissance author, Tommaso Campanella's vision of a *City of the Sun*. (Gibson, 1999; Campanella, 1982). The technopolis involves the interaction of seven major segments necessary to create a high technology-based city (Smilor et al., 1988). The segments include the university, large technology companies, small technology companies, state government, local government, federal government, and support groups. According to Kozmetsky, the modern technopolis links technology development with public and private sectors to spur economic development and promote technology diversification. The four factors crucial to the development of a technopolis are the achievement of scientific preeminence, the

development and maintenance of new technologies for emerging industries, attraction of major technology companies, and the creation of homegrown technology companies.

Local, state, and federal government play vital roles in the development of the technopolis. Local government needs to maintain and develop infrastructure, competitive rate structures, and quality of life. The role of local government is to balance quality of life and economic development. Local government needs to realize that there is tension between the two forces and that when local government supports economic growth, then the technopolis can develop. The primary role of state government is to set priorities and fund education. Finally, the federal government's primary role is to fund research. Kozmetsky views government as being far more important for economic development than Porter, but both envision interrelated networks of businesses being essential.

Technopolis and civic entrepreneurship validated. The seminal event in Austin's development of the technopolis occurred in 1983 when city's leaders organized themselves and won the nationwide competition for Microelectronics and Computer Technology Corporation (MCC). This would be what Starr (2005) refers to as a "constitutive moment." Against a growing threat to U.S. technology superiority from the highly organized Japanese electronics industry, major U.S. computer and semiconductor manufacturers overcame anti-trust constraints and formed a consortium in 1982 to promote U.S. technological leadership in electronics. Retired Admiral, UT alumnus, and former director of the National Security Agency, Bobby Inman, was put at the helm of MCC. Meanwhile falling oil prices had put the Texas economy in decline causing many civic and political leaders to seek ways to diversify the Texas economy (Engelking, 1996). The stars were aligned for Austin.

Seeing a great economic opportunity for Austin, a team of civic entrepreneurs decided to overcome the city's hostility to growth and plot a new economic direction for Austin and Texas by attracting MCC (Henton et al., 1997). Business leaders such as Lee Cooke of Texas Instruments; Austin attorney Pike Powers; John Watson, a local real estate developer; and founder of Electronic Data Systems, Ross Perot; working with UT and the Chamber convinced Governor Mark White to pull out all the stops to lure MCC to Austin. The municipal government of Austin was specifically excluded from participation in the effort (Robbins, 2003). The Governor's office, UT, and the business community led by the Austin Chamber of Commerce put together a package of incentives, which was massive for the time period. Much of the public funds were directed toward UT's microelectronics research programs as UT was the key to Austin's bid because MCC sought an academic institution whose relationship would be so critical as to determine areas for acceleration and priority such a situation would be less likely at an institution with already established world-class research programs (Engelking, 1996). After a four month search, the Pickle Research Center in Austin (the former Balcones Center), was selected by MCC over 57 cities in 27 states, and this put Austin on the technology-led economic development map.

The MCC attraction brought economic growth, strengthened institutional arrangements, and brought a new swagger to Austin. The same cast of players were able to repeat their MCC success in 1984 with the relocation of the research and development division of the 3M Company from Minnesota. The *Austin Technology Based Industry Report* (1991) cataloged 29 semiconductor companies making major expansions, relocations, or start-ups since 1983 (Gibson et al., 1991). Perhaps one of the most far-

reaching outcomes from the MCC project was that the effort sharpened a loose association of business people, academia, and to a lesser extent government into a powerful regime for economic growth (Jacobs, 2000).

Cluster concept takes root. The civic leaders, who came together for the recruitment of MCC, decided it was time to begin the next phase of the technopolis. In 1984, the Austin Chamber of Commerce commissioned a new long-range economic plan (to replace the last plan dating back to 1957). SRI International (formerly Stanford Research Institution) prepared a twenty year economic development plan entitled *Creating an Opportunity Economy*. The study stated that Austin should strive to be the center of excellence in microelectronics, computer hardware and software, and telecommunications hardware in order to be in a position to take advantage of the transformation of the United States from an industrial to an information society. Austin should do this by strengthening and establishing new partnerships among business, government, and educational institutions, especially the University of Texas; creating an innovative and entrepreneurial business climate; and developing programs to attract, recruit, and grow technology information firms. Even though the term was not used, the SRI plan called for basically a cluster-based approach to economic development. The leadership of Austin immediately began to implement the SRI proposal and were soon rewarded at the same time that the overall U.S. economy was experiencing a recession.

Feeling threatened by Japanese chipmakers and their close ties with the Japanese government, fourteen U.S.-based semiconductor manufacturers and the U.S. government came together in 1986 to form a consortium called SEMATECH. American semiconductor manufacturers felt they could no longer compete with vertically integrated

foreign manufacturers, supported by huge government subsidies, in making memory chips that were both high in quality and low in price. Rather than continuing to develop proprietary product designs, U.S. chipmakers recognized that they could only defeat Japanese competitors if they worked together to select manufacturing standards and improve their manufacturing processes (Browning, 2000). Thus in 1985 a beleaguered U.S. chip industry, led by Charlie Sporck of National Semiconductor Corp. and Bob Noyce of Intel, went to the U.S. government and as a result, Congress voted funds to establish and find a home for the semiconductor consortium.

Austin was well positioned for this opportunity. It had an experienced team in place and with the addition of U.S. Representative J.J. Pickle, who represented Austin in Congress (and was chief sponsor of the federal research and development tax credit), they had added political clout. Pickle used his influence, along with the aid of the rest of the Texas congressional delegation, to ensure that Sematech received the government funding it would need to exist. Further, eleven of the fourteen private companies in Sematech already had plants in Austin and the MCC. Finally, the State and UT, as well as the private sector came up with a large incentive package. Most of this was in the form of UT providing a manufacturing facility and creating a new 92-acre university research park around it.

The institutional arrangements of Austin made it an easy choice for Sematech. Before the end of federal subsidies to Sematech in 1996, the consortium received \$848 million from the federal government that was matched on a 1:1 ratio by the private sector and created 700 jobs. This federal investment helped cushion the impact on Austin in the late 1980s of sharply declining oil prices and a major savings and loan scandal that

precipitated the bankruptcies of many of Austin’s developers (Wiggins & Gibson, 2003). The fortunes of Sematech have waned, but its attraction helped propel Austin along its economic trajectory.

Now that the pieces were in place, the civic leaders of Austin began to develop and measure the performance of their technopolis. In 1989, the “Austin Model” of technology led growth was activated with the primary goal of commercializing the technology coming out of UT, MCC, and Sematech. Led by UT’s IC2 Institute, the goals were to create 200 high-tech jobs and fill 1 million square feet of office space in 10 years (Kozmetsky, 2002). Performance metrics were established and measured in three areas: government, private sector, and academia (see Table 5).

Table 5. Performance Metrics of the Technopolis (Source: Kozmetsky, 2002)

Government Metrics	Private Sector Metrics	Academia Metrics
Job creation	Capital invested	Development of technology entrepreneurship
Space utilization	Sales	Placement of students
Capital creation	Time to market	Experimental learning
Incremental revenues (taxes)	Managerial development	Royalty and license fees

Social inequity was not ignored in the technopolis, but neither was it resolved. In 1992, UT with cooperation of business, government, and public schools launched the Austin Project as a socioeconomic oriented program designed to provide health care and education to those left behind by the technology led economic development. Despite increases in average wages and per capita incomes, the Austin region continues to suffer from a relatively high poverty rate and a large white/non-white income disparity (Miller, 2002). When asked about the social equity issue, most of the economic developers saw it as primarily an education issue outside of their domain.

With Austin's spectacular growth in the 1990s, the Chamber decided to revisit their 1984 strategic plan. In 1998 the Greater Austin Chamber of Commerce commissioned ICF Kaiser International to develop a new long range plan entitled, *Next Century Economy: Sustaining the Austin Region's Economic Advantage in the 21st Century*. This study recommended that community leaders take a cluster-based approach to economic development and focus their resources on three established clusters; 1) semiconductors and electronics; 2) computers and peripherals; and 3) software. In addition, five emerging clusters including biomedical products and multimedia were recommended for development. Economic development efforts should be concentrated on increasing the availability of skilled workers, improving social equity, and addressing the Texas tax structure, which discourages and penalizes capital-intensive industries like semiconductors (Engelking, 1999). It all seemed to be falling into place for the technopolis.

Economic forces impel change. The 1990s were a boom time for Austin, which was now calling itself, the Silicon Hills. Between 1989 and 2000, the Chamber claimed to have created 27,000 primary jobs from recruitment and 55,000 from expansion (Robbins, 2003). Homegrown Dell Computers became the world's largest seller of personal computers. In 1996 Samsung Electronics chose Austin over Portland, Oregon because of tax abatements, agreements not to annex and therefore not to tax for a specified time, and favorable utility rate agreements through its city-owned electric, water, and wastewater departments (Miller, 2002). In 1997, Motorola received a multimillion-dollar incentive package to move its chip division headquarters to Austin from Phoenix, but after this deal the city stopped giving incentives and the area cut back

on recruiting new employers (Ladendorf, 2004). Austin basically stopped its economic development efforts because its economy was so good.

Most economic developers shifted their focus to attracting workers. Austinites felt that they had achieved their technoplois that rivaled Silicon Valley. Despite the hubris, rather than a rival to Silicon Valley, Austin had emerged as a complementary home for large technical branch plants (Oden, 1997; Echeverri-Carroll, 2004). This lack of diversification and dependence on Silicon Valley would soon haunt the Silicon Hills.

As the 21st century approached, Austinites were making too much money to see the dotcom bust and subsequent collapse of the hi-tech market coming. The technology bust hit Austin hard. The manufacturing sector lost almost 28,000 jobs from the end of 2000 through December 2003, shrinking in importance from 12.3 percent of total employment to 8.7 percent (Petersen, 2004). Construction ground to a halt as migration to Austin ceased and firms began cutting employees. A symbol of the crash was Intel's unfinished \$124 million chip design center in downtown Austin. For five years the structure was rubble and a skeleton of a building. It was considered an "eyesore" until it was turned into a federal courthouse in 2005. Much of the city's \$10.6 million in incentives to Intel never materialized. The techopolis was crumbling.

Austin reorganizes after the technology crash. The leaders of Austin began to rethink how they proceeded with economic development. In 2003, the Chamber, with \$120,000 in funding from the Real Estate Council of Austin, hired Market Street Services of Atlanta to create a new economic development strategy. *Opportunity Austin* is a five-year, five-county "roadmap for recovery" to rejuvenate the economy by creating 72,000 jobs with a \$2.9 billion aggregate increase in payroll, and having an overall impact of \$14

billion for central Texas. The consultant identified a more diversified portfolio of clusters from the 1998 plan including: semiconductors, automotive supplies, biomedical products and pharmaceutical manufacturing, wireless, company headquarters, software, digital media, clean energy and transportation/logistics. The study pointed to Austin's city government bureaucracy as a major impediment to restoring job opportunities and called for marketing Austin more effectively.

The plan was estimated to cost \$11 million to implement. After a fund raising campaign was helmed by Heritage Title Co., over \$13.5 million was raised of which the regional business community had invested more than \$12.8 million to finance the program. In 2004, the first year of operation, the region attracted more than 19 business relocations, including the Home Depot Technology Center; a national data center for the giant retailer, which employs 500 software professionals. In addition, more than 56 existing businesses have announced significant expansions. Austin was back in the business of luring and expanding major employers.

Meanwhile, city hall decided to develop its own economic policy and strategy. In 2003, the Mayor's Task Force on the Economy, co-chaired by then Council member Will Wynn, laid out its suggestions for what City Hall could do about the continuing "crisis." Three subcommittees focusing on "traditional industries," on small business, and on cultural vitality ("keeping Austin weird"), were established. They concluded that small businesses, creative industries like film and music, and the renewable energy industry should be the focus of economic development. Additionally, the city, under Mayor Wynn, decided to change its "back-seat role" in economic development to a position of influence (Kaspar, 2004). The city's economic development department was increased

from eight to thirty-six and hired Jubal Smith from a utility company in Arkansas to lead the effort. Other Austin area localities as well, such as Cedar Park, have started to become more proactive in their attempts to lure business (Powell, 2005). This city of 35,000 decided to no longer contract with the Chamber and budgeted \$175,700 for its own sales tax-funded economic development corporation. The public sector had begun to take a more active role in economic development.

After the recession, the state of Texas became more involved in local economic development. In 2003, Texas lawmakers created the \$295 million Texas Enterprise Fund (TEF) to revive the state's slumping economy and offer financial incentives to companies that create or retain jobs or investments in Texas. The "deal closing fund" had few administrative controls. Soon after the TEF's enactment, it was used to counter a bid from New York to lure Sematech away from Austin. The fund proved extremely popular with economic developers and more state funding was soon to follow.

In 2005, the TEF received an additional \$185 million and the state enacted the \$200 million Emerging Technology Fund that would invest in often-risky startup companies so they would not have to turn to out-of-state offers for financing, which could pull the companies away from Texas. The state seed money will go to a variety of targeted clusters: semiconductors, information, computer and software technology, energy, manufactured energy systems, micro-electromechanical systems, nanotechnology, biotechnology, medicine, life sciences, petroleum refining and chemical processes, aerospace, defense, and "other pursuits as determined by the governor in consultation with the lieutenant governor and the speaker of the House of

Representatives" (Ward, 2005). The state was now a major player in local economic development.

The city also developed a new policy for incentives in 2004 (Coppola, 2004). Tax abatement, it should be noted, only began in the early 1990s after amendments were made to state laws allowing local governments to offer incentives to attract new companies and expand existing ones (Creutzberg, 2004). Under the plan, the economic development department scores companies in several categories, such as how many employees they plan to hire and whether they will follow environmentally friendly building standards. Companies with high scores qualify for various percentages of property tax breaks. The City used the scoring system in 2004 to give property tax breaks when attracting a Home Depot data center to Austin and a supply center in nearby Travis County. Home Depot got the following for building the \$400 million centers in high unemployment areas and hiring 850 employees at an average wage of \$55,000 (Elder, 2004).

- City of Austin: \$7.1 million over 10 years (\$6.74 million in tax rebates; \$445,000 in equipment and services from Austin Energy)
- Travis County: \$9.9 million tax rebates over 10 years
- State of Texas: \$8.5 million from governor's Enterprise Fund
- Austin Independent School District: \$5.7 million property tax abatement over the ten-year period

Companies already in Austin that are looking to expand can also apply. For example in 2004, Sematech's Advanced Technology Facility got \$6.3 million in property tax incentives over 10 years in exchange for adding 100 workers and adding \$100 million worth of equipment to its facility over the next five years.

High-technology regime changes their vision. There is even a new heuristic replacing the technopolis and that is the Digital Convergence Initiative (DCI). The DCI is

a public/private venture to facilitate the growth of “super clusters” of diverse digital-oriented industries and academic disciplines. For example, central Texas is forming a super cluster of electronics, wireless, and creative content (e.g., Austin’s music scene) in order to:

- Create regional and U.S. competitive advantage in the international digital market
- Advance economic opportunities for regional businesses with attention to small business growth
- Align institutional and private sector digital-oriented research and development with consumer demands and government requirements

The Digital Convergence Initiative seeks to establish a Central Texas super economic cluster in digital convergence as well as in the underlying technology sectors. Digital convergence includes, but is not limited to, the continuous and rapid merging of products from multiple sectors in the digital space, which are defined as film/video, games, wireless technology and applications, semiconductors, security, communications (including broadband), computers, software, content development, home electronics, and personal devices. A key objective of the DCI is to apply many of these convergent and emerging technologies to education and training at multiple levels and across many subject areas. Thus, DCI is replacing the technopolis model.

Economic Development Example: Keeping Freescale in Austin

The recent effort to keep Freescale Semiconductor Inc’s headquarters in Austin and upgrade its manufacturing facilities is an illuminating example of how economic development currently operates in Austin. In July 2004, the maker of chips for cell phones spun off from Motorola Inc. and had an initial public stock offering. The third largest U.S.-based semiconductor maker is a global business with 22,000 employees of which 5,600 are in three locations in Austin, and which has business operations and

customers all over the world. The new CEO, Michel Mayer, was a French native who had no ties to Austin. Upon taking over, Mayer immediately began criticizing Austin for its relative lack of international and national air connections, and for Austin not having many major corporate headquarters (Zehr, 2005). Austin-Bergstrom International Airport offers 32 nonstop flights, but only 2 go to foreign destinations, both of them Mexican resort cities. Also, a move out of Austin would demonstrate Freescale's independence from Motorola, which accounted for about 28 percent of Freescale's \$5.7 billion in sales revenue in 2004 (Lahnedorf, 2005).

In the summer of 2004, Freescale announced that it had hired a site location consultant. Austin was now in competition with Chicago, Phoenix, and Dallas to keep its 600 headquarters-related jobs in Austin. The Greater Austin Chamber of Commerce immediately assembled a task force headed by lawyer Pike Powers and UT. The Chamber and the city pledged to aggressively lobby airlines such as Houston-based Continental Airlines Inc. to try to improve air service from Austin. Further, the Chamber was to play a pivotal role in helping coordinate the various jurisdictions that offered incentives. The Chamber began to push local governments to develop a package of tax incentives for Freescale including the Austin Independent School District, since a recent state law allowed large school districts to exempt hundreds of millions of dollars worth of new property from school taxes to attract and retain jobs. The Chamber's push for incentives sparked a major debate in the City Council over whether the incentives could be offered without the promise of new jobs and whether the resources would be better used for small business and infrastructure improvements (Coppola, 2004).

However, the supporters of industrial incentives won out. With a lucrative incentive package of \$20 million in payroll tax credits from Chicago on the table, and Dallas dropped from consideration, Governor Rick Perry became involved, but without Freescale offering to add new jobs, it was difficult for the state to offer the \$10 million in incentives sought by the company from its \$295 million economic development program, the Texas Enterprise Fund (Ladendorf, 2005). After acrimonious negotiations, Freescale agreed to add jobs in Austin and invest more than \$600 million in the city over the next 10 years. Once the company made this concession, the four months of difficult negotiations were over, and on April 1, 2005 Austin Mayor Will Wynn called a news conference to announce that Freescale would be staying in Austin. This example highlights the competitive nature of today’s economic development game and shows how companies play communities off each other in their pursuit to attract and retain mobile capital.

Structural Versus Actor Center Drivers

Both structure and human agency were perceived to be drivers of economic development policy throughout the interviews of Austin’s economic developers. See Table 6 for a summary of these factors.

Table 6. Summary of Community Power Theories in Austin

Austin	
<i>Structural Theories</i>	
Market Model	Perceived rational need to compete for mobile capital and unitary interest for growth amongst the economic developers, but they are aware that not the whole community is supportive of growth
Economic Forces	The high tech bust led to revised economic development strategy and organizational restructuring including the emergence of public sector economic development organizations
Civic Culture	A meritocratic elite-based culture supportive of state-capitalist technology-based development
<i>Human Agency Theories</i>	

Regime Theory	Strong, progressive regimes viewed as one of Austin’s key competitive advantages, but concern that they are disappearing
Growth Machine	Active and funds the economic development programs
Civic Entrepreneurs	History of strong civic leaders from the private sector, but the new generation of civic entrepreneurs has not emerged
Economic Developers	The business community via the Chamber was traditionally the economic developers, but now public sector economic developers are becoming more involved with shaping policy

Market model. The structural factors of macro economic forces and economically-based competition with other cities influenced the economic developers’ perceptions of why they should undertake cluster-based economic development. The economic developers perceived a unitary economic interest of Austin to compete with other communities to entice new jobs and development projects inside their boundaries following the logic that what is good for business becomes good for the city. However, they also were aware that there are elements in the community that are against growth and they must be appeased. As one economic developer commented,

In the 1990s the Council was dominated by no-growth folks. Got two kind of folks in Austin who work against each other and make Austin what it is. Environmental and good quality of life/business/school folks. There is no weakness in economic development. We got labor, good government, schools, QOL, airport. No barriers. The environmental community is made up of software folks, professors, etc. Brilliant folks who ride their bikes to work. They do not want development. Because these folks are here the other folks want to be here. It creates a dichotomy. Because of this labor, which is a reason that Barton Springs have been preserved, business wants to be here so badly. You will find those places do not want growth are attractive to business. Lowest crime rate in the U.S. and public school systems are still good. Austin’s population is up 47% from 2000. It is a balancing act. The environmentalists are why businesses want to be here.

Nevertheless, economic developers were concerned that if they were not aggressive in their economic development efforts that capital investments would flow to other communities such as Chicago, New York, Phoenix or even to instate competitors, such as

Dallas or Houston. They felt that their decision to take a cluster-based approach was governed by rational principles designed to increase public utility. Nevertheless, the market model was not the only perceived driver for Austin's taking a cluster-based approach.

Economic forces. Related to the structural factor of Austin as a rational economic actor was the influence of macroeconomic forces. The economic developers generally admitted that most economic development policies are the results of swings in the economy. As one Austin economic developer pointed out, "Due to the tech boom there was not much focus on economic development, but when the bust hit, we did lose a substantial number of jobs. We lost maybe 30,000 high tech manufacturing jobs and this refocused our economic development strategy." This new-found focus resulted in the 2003 *Opportunity Austin* plan. The Chamber staff claimed to have called for diversification of the Austin economy prior to the crash, but their warnings fell on deaf ears. The unemployment rate was less than 2%, and there was heedless optimism. Many Austinites believed that the older institutional business models did not apply anymore. Economic developers, in response to the demands of business, were myopically concerned with the lack of skilled high technology workers and commercial space. The civic leadership got caught up in the frenzy. Only after the city lost 30,000 high technology manufacturing jobs did the economic developers feel a real need to refocus their economic development efforts to a cluster-based approach.

Michael Rollins was brought in as President and CEO of the Chamber in 2002, after a career leading Chambers of Commerce in Nashville, Asheville, Columbia, Fredericksburg, and Hickory. The new Chamber leadership initiated the *Opportunity*

Austin economic development program in order to adjust to macroeconomic forces. As one Chamber official responded when asked how economic issues affected economic development strategy, “This is all about economics. It is not about bringing in new jobs or companies; it is about growing our jobs and economy. We lost 30,000 high tech jobs so we realize that we need to diversify our economy. We benchmark ourselves against the state and federal economy, but also realizing that Austin is becoming a global city and we need to benchmark ourselves against that as well.” Clearly structural forces, or at least the perception of these forces, matter.

Civic culture. Civic culture in the context of Texas seems to influence how regional economic development policy is created. In order to understand the civic culture in Austin, one Austinite recommended Michael Lind’s *Made in Texas* (2003), which claimed that Austin “is a broadly egalitarian meritocracy, not a traditional social order stratified by caste and class...They believe that an activist federal government, when it is in the right hands, is an important ally of ordinary Texans.” (p. 160). Another economic developer elaborated,

Where in some instances relevant constituencies do not work well together at all. There is a dynamic here that is not purely Texan; as you can tell from my accent I am not Texan, I’ve lived in other states as well. There is a dynamic here that is different than other places, particularly the Northeast where I grew up. It has to do with an attitude toward competition and individual success. Texas is a state very much in line with the current Republican philosophy of competition, free market. May the best, most aggressive, and most talented win. It’s been that way forever and that culture permeates everything that we do. The winner takes all and I don’t mean that in a negative sense. If you win, you deserve it. So in Texas successful entrepreneurs, successful people are very highly regarded.

This civic culture that glorifies and looks to leadership from successful business people also sees a very limited role for government in directing the economy. The economic developer went on to explain,

The tendency in Texas is not to mess with people. You know the shirt don't mess with Texas? It really was about not littering, but the government does not like to mess with its corporate sector as much as possible. It wants individuals as much as possible to be successful. It is a little different than other places where policy is driven by the state or county level. In Texas the cities operate very similarly and they do not want to impinge on people's individual efforts in the economic realm. So there is very little policy from the state realm and when it does happen like the Enterprise Fund, it took some private sector prodding to make that happen.

Thus the civic culture in Austin is conducive to regimes and civic entrepreneurs taking charge of economic development efforts and letting government take a back seat in developing and implementing economic development policy.

Civic entrepreneurs. Structural factors are at play, but human agency also has an important role in taking a cluster-based approach. Austin was used as an example by Henton et al. (1997) in their seminal work on civic entrepreneurs. The economic developers continually referred to private-sector business owners and managers, as well as public sector leaders such as UT's Kozmetsky, who brought their vision and commitment into the arena of regional cluster development. These leaders built powerful links between business, government, education, and community, which are necessary for cluster-based economic development.

Economic development regimes. The regime that these civic leaders created was viewed as one of Austin's competitive advantages. This informal yet relatively stable

group had access to institutional resources and had a significant impact on local policy and administration. As one Austinite noted,

(The civic culture in Austin) leads to a cooperation dynamic that is different, not better, different. For example, in Austin you have a lot of participation from what you would call the private sector, the general population, business and civic entrepreneurs. We tend to draw people into leadership and a subset that is interested in making Austin economically dynamic. It is self organizing groups and there are many of them. Of course the University has an impact because we graduate a couple trillion students a year who stay in Austin. You hardly ever see policy come down from the State with respect to wealth creation. You might see regulations. In general, the State does not fool around. As far as people are concerned in Texas, they are happy with this free unfettered market place.

There was clearly business interest mediation in the regimes and a mild degree of popular control. These arrangements, however, were viewed by some economic developers as having fallen apart as the older generation of civic entrepreneurs passed away. As one economic developer stated, “the institutional arrangements, formal and informal, were viewed as Austin’s chief assets. That was the 80s and 90s and to be quite frank, that has fallen apart. There are a number of reasons. The increased complication of the technology business and the general networking groups on which people relied are no longer working.” It was generally felt that new civic entrepreneurs had not emerged to take the place of the “old heads.” This void concerned several of the economic developers interviewed. Thus, the forces of regime theory and civic entrepreneurs were perceived by economic developers to be important drivers of cluster-based economics in the past, but the future of these drivers is uncertain.

A Chamber official highlighted the importance of civic entrepreneurs working through regimes,

Well, it all comes back to a few key leaders in the community who were consensus builders. When Austin had egg on its face from the loss of high

tech jobs and was arrogant about who could and who couldn't locate in Austin, literally, they were swatting flies; the Chamber and the City did not have to do any type of business attraction or marketing. Once businesses started closing and the economy started ailing, the City was losing taxes, the University wanted to address it, the big private stakeholders, the bankers, lawyers, real estate, they were all losing their investments. They wanted to react and capture their lost income. It was really finding the right time and folks to talk.... It was all about bringing the leaders together. The University, the Chamber and the City bringing these people together to get everyone buy-in.

The comment above also shows the important role of the growth machine.

Growth machine. The growth machine is perhaps one of the most interesting aspects of economic development in Austin. In most communities, the land based elite (e.g., bankers, realtors, property developers) are free riders who directly profit through the increasing intensification of the land use of the area. Others that are considered part of the growth machine are commercial lawyers, consultants, and public relations firms that directly benefit from attracting a new company or expanding an existing firm. In most communities the growth machine guides economic development policy by being members of governing boards and authorities while directly profiting from industrial growth, but public tax funds pay for economic development. The pecuniary incentives for industry comes from the public coffers in the form of grants, tax abatements, public funded workforce training, etc., but most of the direct benefit comes to the growth machine. The public benefit generally is derived through the externalities of the attracted or expanded business. Therefore, the growth machine gets a free ride in most communities, but not in Austin.

It was determined that the 2003 *Opportunity Austin* plan would take \$11 million to implement and that the privately funded Chamber would be the main entity responsible for implementation, so the Chamber would need to conduct a massive fundraising

campaign. Accordingly, the Chamber developed a model to demonstrate to the growth machine that if the economic development goals were met, they would get a significant return on their investment in five years. The Opportunity Austin fund-raising campaign has officially ended with investments of \$13 million. This was \$2 million over the \$11 million goal. More than 245 investors contributed to the campaign, nearly all of it in private contributions. Ergo, Austin has found a way to harness the growth machine.

Broad Implications from Austin

Facilitating dimensions. As we will see, the facilitating dimensions consistently identified by the economic developers in all the field studies include performance metrics, institutional arrangements, the state context, elected officials, and the tax structure. Each of these factors either helped or hindered taking a cluster-based approach, but the dimensions are not conceived as the drivers of taking a cluster-based approach. Table 7 summarizes the findings in Austin regarding the facilitating dimensions.

Table 7. Summary of Facilitating Dimensions in Austin

Dimensions	Insights from Austin
Performance Metrics	The metrics developed by Kozmetsky (2002) for the Technopolis encourage a cluster-based approach, but the new metrics of total jobs created does not
Institutional Arrangements	The traditional Chamber-led economic development with committees organized around sectors helped taking a cluster-based approach, but the aid from the newly forming arrangements is less clear
State Context	Traditionally not involved in economic development, the State of Texas has embraced a cluster-based approach and is putting extensive public funds into cluster infrastructure
Elected Officials	Traditionally, allowed business leaders to direct economic development and provided political clout when needed
Tax Structure	No state corporate and personal income tax so conducive to headquarters and high paying jobs, reliance on the property tax rebate for incentives is not advantageous to non-manufacturing cluster development

Common themes. There are trends that run through each of the field studies that have implications for this research. These themes are that the economic development is becoming more professional, there has been an institutional isomorphism of economic development organizations toward public-private partnerships, or at least a balance of public and private driven policy, and that evolutionary economics, in particular path dependency, historical accidents, and “creative destruction” is useful for understanding cluster development. These insights are highlighted in Table 8.

Table 8. Common Economic Development Themes in Austin

Themes	Insights from Austin
Changes in Economic Development	Freescale is an example of the increasing role of site consultants and the aggressive nature of economic development today
Professionalism of Economic Development	Many of the economic developers in Austin are career economic developers who have served in several communities
Relationship of Public to Private Institutions	Austin was traditionally considered a privately run economic development effort, but public entities have been increasing their staffs and budgets to play a greater role in economic development governance
Evolutionary Economics	The groundwork for Austin’s growth as a high technology mecca was laid in the 1940s. This created an institutional “lock-in” of seeking large public funding to develop a high technology industrial complex

Concluding Remarks on Austin

The political/institutional context in Austin is in transition. The structural aspects are not changing dramatically, while the human agency factors are changing.

Traditionally, economic development in Austin was private sector driven and led by strong civic entrepreneurs. As the old community power structures are weakening, the

public sector is taking an increasing role and beefing up its own economic development organizations. It is too early to say how this will play out, but it is safe to say that future economic development in Austin will have a greater balance of public and private driven economic development. This is likely to be conducive to extensive cluster-based economic development because clusters need government and business to effectively work together.

Chapter Five

Field Study of Portland Oregon

While the Austin economic development power structure is in a transition from being predominately private sector-driven toward more of a balance of public and private driven, Portland appears to be shifting the other way. Traditionally, public sector driven, the business community appears to be organizing and exerting a stronger influence on economic development policy. The business community is becoming more involved with governance while the economic developers are seeking greater engagement with the business community. The result is likely to be a greater balance of public and private interests in shaping economic development policy, which is important for effective cluster development.

Organization of This Chapter

The chapter is divided into seven sections. The first section gives a brief introduction to Portland's economic situation and distinct civic culture. The second section presents the findings from confidential interviews of Portland's economic developers on their perspectives on cluster-based economic development in Portland. The third section covers Portland's historical evolution. Details of Portland's early history prior to the 1930s can be found in Appendix C. The fourth section is a current example of economic development. The next section presents the findings on the application of the community power structure theories to Portland. The sixth section discusses the broad implications from Portland regarding economic development. The final section contains the concluding remarks.

Introduction to Trying to Manage Economic Development

Portland is a fabled “planners paradise” where quality-of-life is perceived as being more important than business interests (Howe, 1998; Phillips & Goodstein, 2000). The celebrated home of the “Silicon Forest” and clean industries, it is the subject of panegyric literature that is energetically promoted by local boosters. However, it is informative to understand what is often left out of the stories, for example, the massive New Deal era hydroelectric dams that allowed Portland to industrialize, the textile industry that remains globally competitive, and the large metal manufacturing cluster. Conjointly, it is important to understand how Portland’s distinctive approach to economic development came about. In order to understand the “Portland way,” it is essential to examine Portland’s economic history.

Economic Developers’ Perspective on Economic Development

Starting to take a cluster-based approach. There was general consensus among economic developers interviewed that the region was generally taking, or at least working toward, a cluster-based approach. As one Portland economic developer stated,

We are starting to. If I look back four years ago I would say “no.” It was not on the radar screen. Some might have seen a grouping of silicon companies based on work that the state of Oregon did in the late 80s, that is when they repealed the unitary tax and adopted the SIP program. There were a lot of state led efforts to attract Japanese companies. They thought of them as high-tech, but not really a cluster. Since then we have had a move from a resource-based to a human-led manufacturing. In the last four years there has been a lot of inventorying. Like Cortright. His work has been on clusters, so we have moved from identifying them that are emerging, to those that we want to create, to those that are mature.

There was some general concern about whether this approach had inculcated the regional economic development mindset, but all the stakeholders interviewed seemed to

appreciate the concept, even if they did not fully implement it. One economic developer stated, when asked whether Portland was taking a cluster-based approach,

Yes and no. I think there is a drive among those who think about economic development a lot and do it professionally. So there is a collection of people like myself in the City and Counties who orient themselves to a cluster-based approach. I don't know that it has fully made its way to the culture of economic development for the region. Not proactively, but as a reaction to the market. Public officials intuitively get it that we have a semiconductor cluster here. They get that there is a cluster of suppliers and manufacturers and we should concentrate on that. I am not sure if it is strategic at the policy level. The business community broadly speaking gets it more than they did in the past. Their economic health is tied to the traded sector growth. Trying to do everything for every business does not work.

The economic developers are clearly talking and thinking about clusters.

Prior to the 2001 recession, the economic developers generally claimed to have had not taken this approach, but with economic development becoming more of a priority, the stated strategy shifted to a cluster approach. In the 1980s and 1990s, they had targeted the semiconductor industry and related companies promoting cheap water, power, and a skilled workforce, so in some ways they feel they operated intuitively as cluster-based economic development. The recession and subsequent strategic plans crystallized the concept for the economic developers, and this was reinforced by consultants. Hence, the local economic developers of the Portland region believe that they are taking a cluster-based approach.

Hindrances to cluster-based economic development in Portland. There are a number of political and institutional issues that local economic developers feel are hindering their taking a truly cluster-based approach. The organizational arrangements and urban utopian culture, with its requisite dilatory consensus process, are perceived to be the greatest perceived impediments. As one economic developer lamented, “We

process things to death in this region.” Another economic developer noted, “I come from Los Angeles where civic involvement is minimal regarding governmental decision. I worked for a development company of wind mill energy. It always took five times as long to do a project in Oregon. My company was headquartered in Houston and they could not understand the delays. The expectation of public participation is much higher here.” The need for public participation slows down, but does not preclude a cluster-based approach.

Despite over a thirty year history of regional government, regional economic development organizations are relatively new and still need to sort out how they fit in the context of the other governments. One economic developer pointed out,

There is the metropolitan culture. There is the rest of the state and then there is Portland. A rivalry. Resentment is too strong a word. A drive for each community to have its own identity, when the center of gravity is the big city. We are unique in having a regional government and their focus has not been economic. Economic development has been secondary. They are so growth management oriented, so focused on urban utopianism. One of the barriers is multiple governments and fragmentation. The Port of Portland, a state agency is a huge driver. A regional government that does not deal with economics. Large city in the middle and small cities around it and they are the real drivers of the economy. A lot of historic disconnections. Not sure if it is a natural evolution of the region. Maybe this is a natural state of development and we will find our way through it.

Because the economic development professionals have worked together for years and have good personal relationships, the tactical implementation of economic development seems to work smoothly despite governmental disconnects. As one economic developer quipped, “I’ve been in places where it has been described as a battle within the community. It can be like a Checkpoint Charlie mentality. Luckily, we do not have all that.”

However, the newness of the regional economic development organization, as well as limited time and resources limit strategic regional efforts. The regional organizations are staffed by public administrators from the local government economic development organizations, with hired support from Portland State University, rather than devoted regional staff. The economic developers did not call for a physical building with a large staff to improve organizational arrangements; instead, they would like to see practitioners that can be dedicated to a regional approach.

The balance of power and different industry bases amongst the political jurisdictions are issues that are still being sorted out and hinders regional cluster-based policies. A City of Portland economic developer commented about the different jurisdictions,

We really don't have a unifying piece. Portland is the largest city in the region, but the other pieces need to fit in. The other twenty four cities in the region are the larger context. For example, we have a huge strength in silicon, but a lot of the actual jobs are happening not in Portland, but in Hillsboro. It's sort of the Portland's connection to the region. How can we interface with the region? Portland has a good and bad reputation as an 800 pound gorilla and we tell other people how to operate, but we have a bad reputation with the businesses. We have higher taxes, higher utilities, and more regulation that hinders economic development activity. We obviously have a lot of clout, but are not delicate in how we use it.

The economic developer went on to elaborate about the different industries in the region,

Portland has strengths in industries that are declining elsewhere like manufacturing and transportation distribution. The Cortright perspective is we got to start thinking about the future and the knowledge economy. That is widely the most talked about driver of economic development. But we have large ports here; the largest employers are metal manufacturing like Freightliner. Why would we want to disinvest from them? There is a reason that Oregon steel is located next to another metal company. We have a significant metal cluster that is stronger than others. It is the 19th versus 21st century economy and there is competition on that question. I think Portland is a great example of disconnect between theory and what it takes to create economic growth.

This diffuse industry base and lack of one strong regional economic voice has resulted in over forty targeted industry clusters ranging, from agri-business to Wi-Fi being identified by various economic development organizations.

A related institutional barrier is to find the proper balance between public and private sector driven development. The economic developers would like greater public/private partnerships in which business would feel comfortable. They would like to break down the adversarial walls and create a more collaborative framework. The Portland economic developers believe that business does not think holistically or long term enough to drive economic development by themselves, but the public sector must rely on the means of business to create economic development. This situation creates a need for some kind of balance. Finding this balance between business, and in particular industry, and public administration, is probably the greatest challenge facing economic development in Portland. This tension has its roots deep in Portland's history.

Historical Evolution of Portland

Distinct culture founded in scenic beauty. As the Pacific Northwest opened up in the early 1840s, Portland's strategic location practically at the mouth of the vast Columbia River basin, where two great rivers converge at the head of the verdant Willamette Valley, became evident to the region's traders. Abbot (2001) argues that this powerful sense of place, shaped by the area's scenic beauty, nurtured a distinctive civic culture that supports progress, but closely monitors its effects on the environment and community culture. Often backed by financing from New England or San Francisco, adventurous easterners took advantage of Portland's location to make, and sometimes

lose, trading fortunes. Nonetheless, until the 1860s, Portland was a small entrepreneurial agricultural marketing and shipping center.

The business elite equated growth with progress, but were afraid that growth might erode their social influence and physical control over the city. Urban planning offered these business elite a key method for imposing order upon the city, while also permitting the city to expand (Blackford, 1984). Portland's business elite began a promotion campaign that was epitomized by the 1905 Lewis and Clark Centennial and American Pacific Exposition and Oriental Fair, which put Portland on the economic development map. Portland's corporate establishment's goal was to promote Portland as the commercial hub of the Pacific Northwest.

Rise of middle class values. By 1913, the political power of Portland had changed, from total control by a benevolent plutocracy of mercantile-capitalists that maintained close ties to their New England roots, to a balance with the middle class. Johnston (2003) examined the structure of manufacturing in pre-Depression era Portland and found the city a virtual "small property holder's paradise" with thousands of small commerce and manufacturing concerns. During the Progressive Era, this radical middle class would take over urban planning to serve their interests. These interests were maintaining quality and property values of neighborhoods and not social control. This public interest-driven urban planning would flourish in the distinctive environmental culture, but would also at times conflict with traditional economic development approaches.

Shipbuilding creates a constitutive moment. Into the early twentieth century, Portland continued to be primarily a regional agricultural marketing and shipping center

with most manufacturing geared toward local development and construction. The Pacific Northwest steel and wood shipbuilding boom during World War I, employing more than 50,000 people, would temporarily change that situation and lay the groundwork for future industrial development. Nevertheless, by the 1920s, Portland counted fewer than 3,000 shipyard workers, and agriculture resumed its primary place in the economy (Abbott, 1983).

Portland's strong competitive showing in the 1920s and 1930s was tied to continued growth in the farming hinterland of Oregon and southern Idaho (Abbott, 1992). In the 1920s, Portland became the largest lumber manufacturing city in the world, as well as the leading lumber exporting port ("Portland Climbs," 1924). Portland's economy was becoming intertwined with lumber's fortunes; however with its economy tied to lumber, the city experienced greater, and longer, economic doldrums when the Depression hit than most other cities (Mullins, 1991). The Great Depression caused many lumber firms to merge or seek outside investors, but the industry survived. It also was an omen of how dependent the city was on the lumber industry.

Attempts to diversify from a lumber economy. The area launched a number of attempts to diversify from its dependence on the lumber industry. These initiatives included seeking to develop the woolen manufacturing industry, furniture, and the flax industry. Based on the plentiful supply of raw material and waterpower, local boosters in the early 1900s concluded that Portland would "become the center of the greatest woolen manufacturing district in the United States, and that it may attain this position within fifteen years" ("Textile Manufacture," 1909). It would take more than fifteen years, but by the early 1950s, Oregon had become a top 10 producing center of woolen sportswear

including Pendleton Wool Mills, Jantzen Inc., and White Stag Manufacturing Company (Hoyt, 1949). Other textile companies would follow. Established in 1938 as a hat distributorship in Portland, Columbia Sportswear Company now has annual sales of over \$1 billion. Homegrown Nike has become the largest sports apparel company in the world, and the German company, Adidas, was attracted to the area because of the specialized apparel labor (Mayer & Provo, 2004). More recently, British-owned Dr. Martens, maker of counterculture apparel, selected Portland for its North American corporate offices and distribution center. On the other hand, White Stag was bought by Wal-Mart and Jantzen by VF Corporation of North Carolina. Nevertheless, the century-old sports apparel cluster still employs more than 10,000 workers and contributes upward of \$1 billion a year to the regional economy, but gets little attention from economic developers compared to the “sexier” technology clusters (Herzog, 2003).

Dambuilding, a constitutive moment. The federal government’s establishment of a hydroelectric system in the Pacific Northwest through the construction of 29 major federal dams and 124 other federal and non-federal hydroelectric projects would help shape Portland’s future. The hydroelectric projects would attract industry and give regional planning its first foothold in Portland (Robbins, 1997). Although the Bonneville Dam, 40 miles east of Portland, was part of the New Deal public works program, the plan to build such a structure dates back to the 1910s, but not until the Great Depression could this massive federal investment be legitimized (Wheeler, 1938). In the early days of the New Deal, the Bonneville and Grand Coulee projects were undertaken to provide jobs and help stimulate the economy. The business leaders and planners imagined that damming the rivers could provide cheap electricity, abundant water, and irrigation,

thereby transforming the region into an agricultural/industrial empire (Pitzer, 1994).

Unquestionably, Portland's economic development future would be forever changed by this vision.

This cheap power, coupled with the war effort, brought industry to Portland. Further, new processes developed at Oregon State University unlocked vast stores of chromium from the low grade ores of the Pacific Northwest ("If New Process," 1940). After the massive federal investment, the Northwest produced 40% of the nation's electrical power. Aluminum could be turned out for less than 12 cents a pound versus over 16 cents in New York (Arne, 1945). The Grand Coulee and Bonneville dams enabled the Pacific Northwest to supply about one-third of the country's wartime production of aluminum (Pitzer, 1994). Aluminum plants to feed plane and ship production flocked to the area. If not for the cheap power supply, it is unlikely that Kaiser shipyards, employing 94,000 workers during World War II, would have located in the Portland area (MacColl, 1979). Companies such as Pennsylvania Salt Manufacturing Company (Pennsalt) in 1941, a producer of sodium and potassium chlorates for explosives, were attracted to Portland because of cheap Bonneville-Grand Coulee power ("Construction of Chlorate," 1941). Iron Fireman Manufacturing Company, established in Portland in 1923 to make automatic coal stokers, shifted its entire manufacturing capacity to machining parts for the Boeing B-17 flying fortress plant in Seattle ("Iron Fireman's," 1940). The war production guaranteed a market for the hydroelectric power and established an industrial presence in the Portland area.

Planning for the post-war future. Before the war, Portland's 1939 manufacturing census gave 26,700 as the total industrial employment, and by 1945 this

had risen to 160,000, with 116,000 of these workers employed by the shipyards (Small, 1945). This was expected to drop to 2,000 at the end of the war (Davies, 1947). As one columnist wrote, “Portland, as a city, is no reed shaken by the wind. On its background of Oregon conservatism, it had a pretty solid and balanced life. The war has boosted its population by a third, but it can, without distress, make its way back to normal conditions” (Moley, 1943, p. A4). Portland’s leaders realized that public action needed to be taken to alleviate impending distress; however, the region remained relatively cautious in its economic development efforts compared to rival Seattle (Abbot, 2001).

Despite the conservative nature of civic leaders, the wartime boom prompted city government leaders to begin to contend with planning for peacetime Portland. The Rose City had a tradition of engaging expert urban planning consultants, so it was not out of character for the Portland Area Postwar Development Committee, under pressure from wartime shipping contractor, Edgar Kaiser, to engage Robert Moses of New York for \$100,000 to prepare a report on post-war Portland (Small, 1945). Historically, due to business interests, the more visionary consultant recommendations were quietly shelved, while the more rational or bureaucratic solutions were left to public administrators to implement (Bianco, 2001). In ramping up for the Lewis & Clark Exposition in 1903, John Olmstead, stepson of Frederick Law Olmstead, was brought to Portland as part of the city beautification campaign. Other famous planning consultants included Edward Bennett (1912), Charles H. Cheney (1917), Harland Bartholomew (1930), and Lewis Mumford (1938). Ironically, Mumford emphasized a number of visionary proposals, which were not popular at the time, such as regionalism, controlled growth, greenbelts, and “neotechnics,” which are technologies to diminish the need for physical movement

and close settlement (Stephenson, 1999). Eventually, these visionary proposals would become the hallmarks of Portland.

Nevertheless, it would be Moses who would shape Portland's postwar economic development landscape. Known as the "master builder" because of his massive infrastructure projects that shaped New York, it is no surprise that Moses in 1945 proposed freeway, bridge, and park development, with a mind toward girding the city for post-war growth (Caro, 1975). The \$75 million program would be partly federal, state, county, city, school, dock commission, and Port of Portland funded (Small, 1945). The emphasis was on projects related to transportation and the use of the automobile. The public works projects were expected to employ over 20,000, while Moses maintained that economic development from the plan would create the 72,000 jobs needed after the war ("Moses Offers," 1945). It took almost thirty years, but Portlanders completed nearly all of Moses' recommendations (Bianco, 2001). It was not until the late 1960s that Portland's anti-freeway coalition was able to coalesce resistance to the Moses plan.

Post-war industrial recruitment efforts. Besides infrastructure development, Oregon and the Portland area launched a campaign to attract industry to furnish jobs for the growing population (Davies, 1947). Metal fabrication, wood products manufacturing, and other high electricity-using industries were on the target list. In 1944, the Chamber of Commerce created a special fund for industrial promotion. They hired a representative to attract East Coast firms and issued promotional pamphlets (Abbott, 1983). The Port of Portland Commission, in collaboration with the Bonneville Dam Administration, launched an industrial recruitment campaign in 1949 based on an abundance of hydroelectric power, ample supplies of water, large choice of manufacturing sites, and

ocean shipping outlets (“Push Port,” 1949). The industrial attraction efforts, though conservative and short lived in comparison to other cities, proved relatively successful.

Portland was able to make the tricky transition from wartime big ingot plants to rolling and extrusions mills needed for aluminum consumer goods (“Light Metals,” 1945). Metal plants were attracted to the area because of cheap power and available skilled labor released from the shipyards. Over 600, mostly small and medium size, new and branch plants emerged in Portland between 1947 and 1953, mostly in the electro-metallurgical and electro-chemical industries (MacColl, 1979). These included ALCOA, Reynolds Aluminum, Oregon Steel Mills, and Pacific Carbide. After the war, Freightliner Corporation resumed its innovative aluminum truck-building operations by opening a manufacturing facility in Portland. Today, Freightliner LLC is the leading commercial vehicle manufacturer in North America and the city’s largest private employer. Thus, Portland’s metal manufacturing cluster was established and remains one of the area’s largest employers, albeit the cluster employs 10,000 fewer Portlanders than it did in 2000 (Dundas, 2005).

Constitutive moment for the Silicon Forest. Portland’s most high profile cluster, electronics, also had its origins in the post-war period. Founded in Portland in 1946 by former engineers attracted to the area in the 1940s to work in the Forest Service Radio Laboratory, Tektronix became the foremost supplier of oscilloscopes and for a while the largest manufacturing firm in Oregon (Cortright & Mayer, 2000). New start-up specialty companies producing components and providing high-precision tooling and manufacturing spun off from Tektronix. Perhaps as importantly, Tektronix served as a surrogate research university for the emerging cluster in a comparative educational

vacuum (Mayer, 2005). Electro Scientific Industries was another pioneer firm started by Forest Service Radio Laboratory engineers in 1944 that today supplies high-technology manufacturing equipment to the global electronics market. These two companies, and later Intel, led to the creation of hundreds of spin-offs or start-ups. These would be the seeds of the Silicon Forest (Dodds & Wollner, 1990).

Despite these additions to the Eisenhower era economy, Portland experienced relative economic doldrums because of a consistent policy of resistance by its city leaders to the post-war industrialization that characterized the development of other large U.S. cities like Los Angeles and Seattle (Wollner et al., 2001). The Chamber did lobby for Korean war business, but generally Seattle won out. MaColl (1979) maintained that Portland business leaders, as represented by the Chamber, lacked the vigor and vision to compete against its regional rival. Economic development was about maintaining the status quo rather than bringing about radical economic change.

Government led economic development. In the 1950s and 1960s, Portland experienced an out migration, with many of its younger residents following industry south and east. Faced with this bleak economic situation, the city council, by a close vote, created the Portland Development Commission (PDC) in 1958 to provide housing and economic development programs for the city. The PDC is funded primarily by public fund allocations, federal grants, program income earned on asset management, contracts for services, tax increment financing, private sector donations, and lending agreements. Tax increment financing can be viewed as a financial incentive, since the increased taxes on a developed parcel of land are not put in to the general fund of the different taxing jurisdictions, but instead are devoted to special services related to the designated

improvement district. In 1982, the PDC created the Portland Ambassadors program to use business leaders to help with industrial recruitment. The PDC would become the city's main economic development organization and make economic development public-driven long before most communities. Notwithstanding its public nature, the special purpose government has not been without controversy in its efforts (Mazza, 1994).

In Portland, unlike most cities of the 1960s and 1970s, developers and corporate leaders did not completely dominate economic development (Adams, 1998). Instead two dynamic political leaders would shape Portland's future. Through force of personalities and cohorts of grassroot activists, Governor Tom McCall (1967-1974) and Mayor Neil Goldschmidt (1973-1979) would bring public planners to the center of the city and metropolitan region's economic future (Weir, 2000). These policy entrepreneurs established the Portland expectation of participation by all citizens in public decisions regarding economic development.

Civic culture of no trash in the Shangri-la-in-the-rainforest. In the early 1970s, Oregon's approach to economic development could have been defined by Governor McCall's quip "Welcome to Oregon. Visit, but don't stay." Nevertheless, there were important additions to the area's economy in the 1970s, including Intel. This pervasive smart growth mentality would appeal to a certain segment of businesses (Leo et al., 1998). However, forced by a statewide unemployment rate over 10% in 1976, governors after McCall softened their stance and actively began recruitment efforts, although they remained environmentally conscious. Oregonians proclaimed that they wanted "no trash" in their Shangri-la-in-the-rainforest and sought sophisticated, non-

polluting labor intensive industries to match the area's scenic beauty (Trombley, 1976). The electronics industry was perceived to meet these requirements.

In the mid-1970s, the industry giant Intel was looking for a location to expand. Tektronix's board suggested that the semiconductor manufacturer consider Portland for a branch plant. A number of factors swayed Intel to choose a site in the Portland suburb of Washington County, including a solid education system, a skilled workforce, shovel ready industrial land, low cost electrical power, abundant water, and a quality of life that appealed to Intel's workforce. In 1974, Intel chose Oregon as its first remote campus in the US beyond the Silicon Valley. Intel would be followed in 1979 by Hewlett-Packard, German-owned Wacker Silicon in 1980, and two waves of Japanese electronics firms later in the 1980s and 1990s. The Silicon Forest was growing, but in a managed way.

In the 1970s, all Oregon cities established urban growth boundaries, cordoning off land that would remain rural. Oregon was the first state to institute a comprehensive statewide land use planning process that required each square inch of the state to be zoned and mapped. New development within the urban boundaries was strictly apportioned. Portland's urban growth boundary (UGB) was established in 1979, and has expanded little since then (Nelson & Moore, 1993). The boundary encompasses twenty-four cities and parts of three counties. Those early decisions have produced dramatic statistics: From 1970 to 1990, the Portland metropolitan population grew by 50 percent but used just 2 percent more land (Robinson, 1999). Some planners, however, argue that this controlled growth is not sustainable in part because of its impact on property values (Richardson & Gordon, 2001). Leo (1998) argues that this mentality has evolved into a

“growth management regime,” which includes business, and has the common objective that economic development can best be promoted by managing it intelligently.

Another unique Portland creation was the establishment of the Metropolitan Service District (Metro) in 1978. It is the only directly elected regional government in the United States. The Metro along with the Columbia Region Association of Governments’ (CRAG) has responsibilities that include management of the urban growth boundary, regional land-use planning, transportation planning, and data management. In 1995, Metro adopted the 2040 Growth Concept, which encourages redevelopment within the urban growth boundary, especially in designated urban centers and transit corridors. To implement the growth concept, Metro sets binding targets and performance measures, such as designating small lot subdivisions and establishing minimum housing densities for its subordinate cities and counties. Nevertheless, Metro is not set up as an economic development organization.

Creative destruction of the fall of lumber. The demise of Oregon’s cash-cow, the lumber industry, would force Oregon and Portland to rethink their economic development strategies. As early as 1905, concerns were being raised that the eighty acres of standing timber that must be felled every day for the saw mills of Portland was unsustainable (“In the Big,” 1905). With spiraling interest rates in the late 1970s, the housing market collapsed and with it went Oregon’s wood products industry. Between 1979 and 1982, half of Oregon’s sawmills closed or curtailed operations, eliminating 22,000 of Oregon’s 90,000 jobs (McCarthy, 1982). The lumber industry unsuccessfully requested tax breaks and relaxation of environmental safeguards (Turner, 1982). The state unemployment rate exceeded 11% in the early 1980s. Asked about the economic

development environment in Oregon, the Chairman of Portland based Georgia-Pacific wrote in a letter to the editor, “the current environmental hysteria, the state’s tax structure, inflation, labor unrest, fiscal irresponsibility, monetary mismanagement and escalating welfare schemes create a very pessimistic outlook for anyone contemplating a new, or expanding an existing, job-creating venture in our state” (Cray, 1971, F13). The lumber industry would certainly not be expanding in Oregon.

Once the headquarters location for much of the lumber industry, these headquarters have since moved east. In 1982, timber giant Georgia-Pacific moved its corporate headquarters from Portland to Atlanta to be closer to the pine forests of the south. This move was followed twenty years later when Louisiana-Pacific Corporation, founded in Portland 31 years earlier, moved its headquarters to Nashville in 2003. Despite extensive lobbying by Portland city leaders, Nashville beat out Portland, as well as Charlotte and Richmond because of a lower cost of living, cultural attractions, a pro-business leadership, and proximity to specialty building products suppliers (Sleeth, 2003; Rivera, 2003). The Louisiana-Pacific move marked the loss of the second major wood-product company headquarters after Weyerhaeuser bought Portland-based Willamette Industries in a hostile takeover in 2001. The age of king lumber was over.

State context influencing regional economic development. When the region’s timber industry went into a sharp decline in the early 1980s, resulting in a steep recession and double-digit unemployment, state legislators and community leaders were forced to take steps including increased industrial recruitment and adjusting the tax system. Promoting cheaper land, quality of life, good public schools, no sales tax, and a strong workforce, economic developers hawked Oregon to the high-technology companies of

California and Japan. State legislators also repealed the unitary tax and allowed massive tax abatements for large targeted high-technology investments. These economic development efforts led to a rapid expansion in the Silicon Forest and major construction projects by computer and electronics companies, so much so that by 1997 Oregon had the nation's fastest-growing state economy (McCall, 1999).

The repeal of Oregon's unitary tax opened the way for a wave of Japanese electronics investments. Prior to 1986, Oregon was one of fifteen states that had a unitary tax that assessed taxes on a fraction of the company's worldwide operations, not just those located in the state. Even before the rollback of the tax, NEC Corporation became the first significant Japanese investment in 1985 after Oregon agreed to a waiver of the tax for NEC's \$25 million fiber optic equipment factory. After repeal of the global universal tax, Seiko Epson Corporation built a large printer factory, and Fujitsu America built a disk drive manufacturing facility. Portland's advantages to the Japanese companies, according to the general manager of the Bank of Tokyo, included "help from the government, a supply of skilled and stable labor, cheap land, a low cost of living, and a very hospitable local population" (Kristof, 1984). A study by Bain (1991) found that Japanese investment helped the region diversify, but for the most part manufacturing and assembly at the low-end of the product life cycle that would not stand the test of time.

The other major economic development tax change was the 1993 Oregon Strategic Investment Program (SIP). After Intel decided to build a chip plant in New Mexico rather than invest in Oregon, legislators allowed local governments to cap the taxable value of new plants at \$100 million (Zimmerman, 1995). The tax incentives are on extremely expensive equipment that has a very short life span due to advances in

technology. The companies seeking the incentives must make more than a \$100 million investment, and the incentives do not affect corporate income or property taxes. SIP provides a fifteen-year city, county, and state property tax abatement for firms in targeted industries that build or expand manufacturing plants. And while incentives like the SIP that Intel uses are available only to companies making very large investments, enterprise zones were made available to medium and small businesses. Although not nearly as generous as other state incentive programs, Oregon was being forced by competition from other states to play the economic development game (Stout, 2004).

Intel was the first and largest beneficiary of the tax breaks. It has tripled its workforce and been awarded three investment program agreements since the program began in 1993. After threatening to expand in other locations, Intel Corp. negotiated a \$25 billion investment agreement with Washington County and the city of Hillsboro in 2005. This agreement allows the high-tech giant to continually upgrade its equipment, expand and retrofit facilities, and add roughly 1,500 manufacturing jobs to its payroll by 2025. Today, Intel is Oregon's largest private employer, with 15,500 workers in and around Hillsboro. Thus, California-based Intel is the 800 pound gorilla of the Portland area economy, but tellingly of the culture, in the late 1990s Intel was threatened with fines if it expanded employment too fast.

Oregon lawmakers retooled the SIP law in 2005 that fertilized the Silicon Forest in the early days of the state's chip industry. Backers of the revised law hoped to attract a new generation of high-tech industries and spread economic development beyond the Portland area by cutting the threshold for program property tax exemptions in half, to \$50 million in investment for urban projects, or \$12.5 million for rural areas. However, critics

say the state has never measured the economic costs of the original investment program, under which communities have granted five companies property tax exemptions for nearly \$20 billion in total capital investment (Rogoway, 2005). In an area that often equates economic development with negative growth, Oregon leaders walk a fine line between corporate incentives and perceptions of corporate welfare.

Economic forces impelling economic development. The city of Portland's first economic development strategy, *Prosperous Portland*, was developed in 1994. The blueprint, developed by the Mayor's Business Roundtable, for luring high-tech to Portland called for tax breaks and loosened regulations for targeted industries. The plan listed a series of targeted industries where both growth and high-skill jobs could be achieved. These included electronic equipment, environmental services and equipment, food processing, health technology/biotechnology, professional services, transportation equipment, and warehousing/distribution. The plan seemed to work as the region added 180,000 new jobs in five years, meaning job growth exceeded 4% during each of those years; however, most of the growth was attributable to the electronics cluster rather than to other high growth clusters such as bioscience and medical technology (Consol, 1998). On the other hand, Portland businesses saw the plan as ineffective and the primary focus on quality of life and design issues made them skeptical regarding the government's intentions (Stern & Learn, 2002).

The high-tech bust caused Oregon and Portland to rethink their economic development strategies. At the state level, the Oregon Business Plan was developed to build a template for economic growth throughout the state. In Portland, the Mayor appointed a blue ribbon citizens committee and a twelve industry advisory panel to

review work done by staff and local consultants to recommend strategies and actions that the city should undertake to address its economic vitality. The resulting *Economic Development Strategy for the City of Portland* was released in 2002. The plan called for refocusing on economic development “fundamentals,” as well as emphasizing quality of life and small business development. Targeted clusters included biosciences, creative services, destination retail, distribution and logistics, professional/business services, metals, tourism, transportation equipment, and sustainable industries. The latter are defined as companies that provide a product or service whose use results in greater resource efficiency and/or a reduced negative impact on the environment, such as environmental remediation. The technology industry, hit hard by the recession, and the emerging biotechnology industry were critical components of the mayor's economic plan. The Portland State University New Economy Observatory (2002) pointed out that this economic development plan, like others in the region, focuses on issues rather than strategies and is primarily local in scope and place-based.

Economic crisis leads to reorganization. The local economic developers also reorganized after the dot com crisis and developed a more regional approach to economic development (Provo, 2002). After considering several approaches to developing a more regional approach to economic development, a Metropolitan Economic Policy Task Force (MEPTF), staffed by Institute of Portland Metropolitan Studies at Portland State University, was appointed to review past and current efforts, evaluate programs in other regions, and recommend a framework for the creation of a regional economic development plan. The 20-member Task Force was comprised of an equal split of private company and public agency personnel from the region. In 2003, the MEPTF

recommended that a mechanism be created to better coordinate the region’s economic development objectives with its land use and transportation planning.

After working together collaboratively for more than ten years to retain and recruit businesses, economic development professionals in the region formalized their organization in 2003 to address shared economic priorities and improve the economic climate of the area. They established the non-profit Portland Regional Partners for Business. The public-private partnership, administered by the PDC, is driven by the public sector as represented by the local government economic developers (Stout, 2003). The partnership works to implement business retention, expansion and recruitment, as well as marketing strategies.

Using funding from the U.S. Department of Commerce's Economic Development Administration, the Portland Regional Partners for Business hired local consultants, ECONorthwest and Impressa Consulting, as well as Portland State University to develop a strategy. The Comprehensive Development Strategy for the Portland-Vancouver Metropolitan Region promoted a cluster-based approach and identified established, emerging, and targeted clusters (see Table 9).

Table 9. Clusters Identified in Portland’s Comprehensive Regional Plans (Source: ECONorthwest, 2005)

Established Cluster	Emerging	Targeted
Semiconductors/ Metals, Machinery	Nano Technology	Biotech/Bioscience
Imaging & Display Technology	Creative Services	Sustainable Industries
Nursery Products	Sports Apparel/Recreation- Related Products	Distribution & Logistics
Specialty Foods and Food Processing	Cyber-Security	Professional Services
Lumber and Wood Products	Health/Medical Information	
Transportation Equipment		

The Regional Partners have identified thirteen areas as key regions that compete with Portland for jobs, investment, and talent. These competitors include: Albuquerque, Austin, Boise, Denver, San Francisco, Las Vegas, Minneapolis-St. Paul, Phoenix, Sacramento, Salt Lake City, San Diego, Seattle, and upstate New York. Despite these efforts, “a regional consensus on where the economy should head in the future has yet to emerge. Regional discussions about economic development mainly revolve around issues related to the availability of land and the ability to grow knowledge-based industries” (Mayer & Provo, 2004, p. 16).

The 2001 recession also led the business associations to reorganize and position themselves to take a more active role in economic development. In 2002, the Portland Business Alliance (PBA) was formed from the amalgam of the Association for Portland Progress and the Portland Metropolitan Chamber of Commerce. The new organization’s goals are to give business a greater leadership role in the region’s economic development efforts. In 2005, the PBA launched a business-led initiative to create a Regional Business Plan for the Portland-Vancouver metropolitan region modeled after the Oregon Business Plan, a 2002 initiative of the Oregon Business Council. Complementary to the regional business plan is the Portland Area Economic Dashboard Project, an initiative to develop quarterly performance metrics based on the regional business plan goals, which would theoretically guide the city's economic policies and investments (Giegerich, 2005). These metrics, in addition to more common measures such as median income and unemployment, include other measures such as boosting minority-owned and women-owned business levels, attracting more college-educated residents, and increasing the

number of patents awarded to local companies. The private sector appears to be poised to take a more active role in the region's economic development.

Economic Development Example: A Not So Business-Friendly Civic Culture

It is insightful to examine some of Portland business's recent clashes with government in order to understand the context of economic development in Portland. The first was a zeitgeist statement on how business views local government in Portland. In 2005, Columbia Sportswear's CEO, Tim Boyle, blasted Portland's government in a controversial speech in front of the mayor and other government officials at the annual meeting of the Portland Business Alliance. Columbia had recently moved its headquarters from Portland to nearby unincorporated Washington County. Boyle expressed businesses' sentiments that local government had not done enough to draw in new companies and revenue to help boost schools and address basic public services, and implied that government has no "business" trying to run an electrical utility (Jung, 2005). This sparked a flurry of letters to the editors and blogs on both sides of the issue. The underlying issue was whether business should dictate public policy.

The second incident was Nike's opposition to annexation by the city of Beaverton. Nike's world headquarters are surrounded by Beaverton, but are within unincorporated Washington County. The possibility of annexation has resulted in an increasingly personal dispute between Phil Knight and Beaverton mayor Rob Drake. From Nike's perspective, the company, the only Fortune 500 employer still headquartered in the region, has such a large payroll in the area that it should not be forced to be annexed into Beaverton without its consent. Annexation would cost the company \$700,000 per year in increased taxes for services it already receives. From Beaverton's perspective, all

businesses have an obligation to support the community that raises, educates and nourishes their workforce. Nike countered that Intel routinely receives special tax breaks on various capital investments. The annexation standoff led Beaverton to attempt forcible annexation. That in turn led to a lawsuit by Nike, and lobbying by the company that ultimately resulted in a new state law in 2005 that exempts Nike, Columbia Sportswear, Tektronix, and Electro Scientific Industries from forcible annexation into Beaverton for 30 years.

Despite claims that Portland’s anti-business reputation is an urban myth, the March 2004 issue of *Inc.* magazine ranked Portland the 8th worst in the US for doing business, along with Boston, New York, San Francisco, and San Jose. High costs, anti-business attitudes, and an over reliance on single industries were noted as the reasons for the low ranking (Brenneman, 2004; Strom, 2004). Clearly, sometimes the “Portland Way” conflicts with businesses’ way.

Structure Versus Actor-Center Drivers

Structural and human agency both appear to be drivers of economic development policy in Portland; however, Portland’s economic development seems to be shaped by structure more than human agency (see Table 10 for a summary). In particular, the structural drivers of the distinct Portland civic culture and macroeconomic forces have greatly shaped the direction of cluster-based economic development in Portland.

Table 10. Summary of the Community Power Theories Applied to Portland

Portland	
<i>Structural Theories</i>	
Market Model	Unitary interest for planned growth and rational to compete for mobile investment bounded by the values of the civic culture
Economic Forces	Economic calamities such as demise of the lumber economy and the high-tech bust led to increased economic development efforts and reorganizations

Civic Culture	Dominating civic culture that values public participation, community, and the environment
<i>Human Agency</i>	
Regime Theory	Described as a growth management regime. The public sector governance networks seem disconnected from business networks
Growth Machine	Mild-mannered passive growth machine
Civic Entrepreneurs	Missing the classic civic entrepreneurs from industry who provide collaborative leadership to bridge the business economy and the community, but this role is somewhat filled by local consultants
Economic Developers	Discretion is limited due to a civic culture skeptical of growth and democratic governmental processes

Civic culture. The Portland civic culture of environmentalism, quality-of-life, and public participation has created a seemingly unitary interest in social-centered more than market-centered policies (Ozawa, 2004). This differs from Peterson's (1981) theory, which holds that economic and development imperatives dictate policy and that policy shapes politics and therefore communities have a unitary interest in development. That is a form of structural determinism, overlaid by a rational conception of the unitary interest, which is itself subject to political struggle. The economic developers realize that reason dictates that they need to compete for mobile capital, but that competitive pressure is bound by the region's civic culture. This perspective can be seen in the following quote by a Portland economic developer,

What is going to happen when the economy falters? How can we compete with other regions? We started thinking about regions competing against regions. At the practitioner level, we were informally working together through the PDC. We started talking about a regional economy. We are competing against the Austins. We will never be a Silicon Valley, but what about a Salt Lake City, a Boston? What about the Research Triangle? How do we compete against those? From that emerged the economic development task force and strategy.

Thus, economic imperatives and the perception of the need to compete against other regions shape economic development policy, but the distinct civic culture of Portland in turn shapes the perceived unitary interest.

In ethnically homogeneous Portland, a conservationist, neighborhood-oriented community unitary interest has been reached on issues ranging from nurturing the downtown and open lands protection to favoring public transportation over more expressway building. Therefore, it seems the perceived unitary interest of Portland differs from the other case studies, but there is still the perception of a rational unitary interest to compete against other regions for mobile capital.

Economic forces. Nevertheless, Portland is not immune to macroeconomic forces and migratory investment capital. This requires Portlanders to play the game, even if it is on their own terms. The demise of the northwest lumber industry forced Portland to begin industrial recruitment. In the 1990s, growth seemed to be falling into Portland's lap, so economic development efforts slacked. The bursting of the high-tech bubble again forced Portland to refocus on economic development and reshape its institutional arrangements. Like the other cases, changes in economic development policy are often a Pavlovian-like response to economic structural forces.

Civic entrepreneurs. Perhaps because the main narrative of Portland's leadership is not about economic growth, human actors do not seem to be the dominant force shaping economic development policy in Portland. Nevertheless, the human agency theories are important tools for understanding Portland's approach to cluster-based economic development.

Civic entrepreneurs from industry, who played pivotal roles in shaping economic development policy, were not identified in the interviews. Typically, the interviewees referred to institutions, such as the PBA, rather than individuals except when mentioning their local peer economic developers. Local economic development consultants, however,

were consistently mentioned as being influential in shaping economic development policy. In particular, Joseph Cortright, Vice-President of Impresa Consulting, was routinely mentioned in the interviews as being influential in their working toward taking a cluster-based approach to economic development. He was even referred to as the “cluster guru” by several economic developers. Key private sector civic leaders were absent from the discussion other than to mention their personal battles with local government. Portland seems to be missing the classic civic entrepreneurs from industry who provide collaborative leadership to bridge the business economy and the community, but this role is somewhat filled by local consultants.

Growth machine. The growth machine is involved in economic development, but not like in other communities. One of the economic developers did best practice visits to Austin, Boston, and Charlotte and noted how active bankers and developers were in shaping economic development policy in these cities compared to Portland. He went on to note that those in Portland who directly benefit from economic development are much more passive and tend to stay in the background. Abbott (1997) refers to Portland as having a “mild-mannered” growth machine. Some of the economic developers speculated that this is because the PDC has been so strong. The public entity has been well funded through its tax increment financing and peopled by community leaders. Further, a number of the economic developers pointed out that many of the bankers involved with economic development were based outside of Oregon. As one economic developer put it, “Most of the financing comes from outside the state with those willing to take more risk. So do we talk with the bankers? No.” A quick scan of editorials and blogs in Portland will make it

clear that the growth machine in Portland is under scrutiny so needs to act in accordance with the cultural norms.

Regime theory. Leo’s (1998) description of Portland as having a growth management regime comprised of public bodies and private interests functioning together in order to be able to make and carry out governing decisions fits with the economic developers’ perceptions. Portland is able to accomplish important public purposes by assembling coalitions of political, business and community elite around the growth management agenda. The growth management regime is an informal yet relatively stable group with access to institutional resources, and which has a significant impact on economic development policy and management. However, the public sector economic developers seems disconnected from the business groups. The nature of the regime in Portland is different from the other case studies, which are characterized by more pro-growth regimes.

Broad Implications from Portland

Facilitating dimensions. The factors summarized in Table 11 helped or hindered taking a cluster-based approach in Portland.

Table 11. Summary of Facilitating Dimensions in Portland

Dimensions	Insights From Portland
Performance Metrics	Economic development metrics have been the traditional measures, but the new Economic Dashboard measures are more in line with a cluster-based approach
Institutional Arrangements	Confusing institutional arrangements that have not allowed effective economic development or promoted public/private cooperation
State Context	State of Oregon has been active in promoting cluster-based economic development
Elected Officials	Generally support the managed growth civic culture
Tax Structure	No state sales tax and Oregon’s Strategic Investment Program for large capital investments (\$100 million or more) promote certain types of capital intensive industries

Common themes. Table 12 summarized the trends in Portland that run through each of the field studies which have implications for this research.

Table 12. Common Economic Development Themes in Portland

Themes	Insights From Portland
Changes in Economic Development	Economic developers stressed importance of site consultants and websites. Professionalism has limited the effectiveness of the “good old boy” Portland Ambassadors program
Professionalism of Economic Development	Economic developers had made professional visits to Austin and other peer communities
Relationship of Public to Private Institutions	Business interests through the Portland Business Alliance are taking a more active role in economic development governance
Evolutionary Economics	A series of constitutive moments (e.g., World War shipbuilding, hydroelectric power, Tektronix establishment) and the creative destruction wrought by the demise of lumber. There is an institutional lock-in toward controlled growth

Concluding Remarks for Portland

Portland stands out from the other regions studied because of its civic culture that desires to plan and closely manage economic development. Economic development traditionally has been public sector-driven using democratic processes, although the business community does seem poised to take a more active role and the economic developers would support a more active business community as a partner. Nonetheless, the public sector still shapes the economic development policy, as it does in Roanoke and Lynchburg, but in those regions, the process is much less democratic. All three of these regions’ economic development efforts are professional-driven, whereas in Austin and Greenville/Spartanburg economic development is more private sector driven.

Chapter Six

Field Study of Greenville/Spartanburg, South Carolina

In sharp contrast to public sector-driven and managed economic growth in Portland, Greenville/Spartanburg's economic development is private sector driven and has the reputation for some of the worst sprawl in the United States. It is informative to hear a Greenville economic developer discuss the difference,

It is interesting because our former county administrator used to work in Portland. He wrote a book called *The Emerald Necklace* which was about the greenbelt around Portland.³ The Portland example has been thrown up by Gerald Seals when he was here and we did a visit to Portland. The Portland example was constantly put up in Greenville as a way it ought to be done, but the business community was livid. You got to understand the economy here is driven by the private sector. It is not driven by the government or universities. It is driven by the private sector. The reason they say Portland is great is the rules and regulations. Portland imposes so many restrictions nobody wants to do anything. I think we took bits and pieces and incorporated them into the landscape, the streetscape, neighborhood planning, but I think Greenville still has a lot of sprawl no question.

Nevertheless, Greenville/Spartanburg has been successful in achieving its economic development goals of creating jobs and spurring investment even in the face of the once dominant textile industry.

Organization of This Chapter

The chapter is divided into seven sections. The first section gives a brief introduction to Greenville/Spartanburg's economic situation and distinct civic culture. The second section presents the findings from the confidential interviews of Greenville/Spartanburg's economic developers on their perspectives on cluster-based

³ I believe the book referred to was actually *Taming City Hall: Rightsizing for Results* (1995) about Corvallis, Oregon and Gerald Seal's New Public Management reforms.

economic development in Greenville/Spartanburg. The third section covers Greenville/Spartanburg's historical evolution. Details of Greenville/Spartanburg's early history prior to the 1930s can be found in Appendix C. The fourth section is an illustrative example of economic development. Findings on the application of the community power structure theories to Greenville/Spartanburg are presented in the fifth section. The sixth section is the broad implications from Greenville/Spartanburg regarding economic development. The final section consists of concluding remarks on Greenville/Spartanburg.

Introduction to the Fall of the Cotton Kings and Rise of the Makers

Kanter (1995) presented Greenville/Spartanburg as an area that was succeeding in the new global economy by being a “maker.” That is an economy that competes by being exceptional at high value, cost effective production. She claims that local economy developed in that manner because a small elite group of non-governmental actors made it happen by attracting key industries and creating an environment that is conducive to cost effective production.

This research supports her 1995 assertions, but it appears that these business elite are losing their grip on economic development. How the game is played is making economic development more professional and public sector driven. Never egalitarian or democratic in South Carolina, economic development is at least getting more attention from the political apparatus (Flanagan, 2003). The culture still supports aggressive industrial recruitment, but the economic development professionals are starting to do this recruitment within a cluster-based concept.

Economic Developers on Cluster-Based Economic Development

We have always taken a cluster-based approach. The general consensus among the Greenville/Spartanburg economic developers was that they have always taken a cluster-based approach, but that only recently was the approach called cluster development. An economic developer summed up the area's history of cluster-based economic development,

Greenville/Spartanburg is a leader in cluster-based economic development even though they didn't know it. Basically it was a large southern center of the textile industry and in the '60s they decided in addition to the processing facilities, they decided that should attract some of the machinery manufacturers. And they did that very successfully. They did not call it clustering but I think that's what it was. They went after it and got it and it became reverse domino theory. That led to once they got the German companies textile machinery you have a base of European metal and machinery makers and that fed into broadening their scope and attracting other European manufacturers. The crowning achievement of that was BMW.

Another economic developer said cluster development is a repackaging of the "supply chain management" approach they always used. A third economic developer replied when asked about whether they were taking a cluster-based approach, "I think we have been for 20 years. Greenville has truly been market driven for 20 to 25 years. We have developed clusters in spite of ourselves....So we have a cluster approach but I do not buy into the cluster theories applying statewide. People like Dr. Porter, I pick bits and pieces of but overall some of the pieces I do not buy into." Another economic developer echoed that view when he said, "I think the cluster thing with Porter is very interesting, but I'm not sure how applicable it is. I guess it sort of falls apart the smaller you get." Despite the apparent skepticism regarding clusters, the concept permeates their marketing efforts.

Since the 1950s, the corporate elite and the Chamber of Commerce tried to develop the business milieu around textiles. This included attracting suppliers to the textile mills, as well as getting the mills to work together to share information and develop a hospitable business climate, although, some of this cooperation was to keep the unions out. They supported the South Carolina technical college system to provide customized training and continual upgrading of the workers' production skills. It was only after Porter popularized the term that what they were doing become known as a cluster-based approach to economic development. More recently, they see BMW as a growth pole for an automotive cluster. It was and continues to be perceived as a smart way to market a region. Thus, they see cluster-based economic development as old wine in new bottles.

Hindrances for taking a cluster-based approach. In Greenville/Spartanburg there are perceived to be three prevailing political/institutional issues that go against a cluster-based approach. The first one is whether the elected body understands modern economic development approaches and the other issues are related to institutional structures. One economic developer stated, "I think there will always be political issues because one of the hard things of the cluster approach is that it needs to be done regionally and everyone wants to do their own thing, so they put up roadblocks. It does not make sense for one county to make a cluster. There is not a critical mass. Incentives come from the localities and they do not come from the region. Schools and everything else have to be paid for by localities and that is what makes it tough." Some elected officials want to micromanage the economic development staff and often insist that a company locate in their jurisdiction rather than another part of the region that would

make sense for the whole region. An economic developer quipped, “Where now you got elected officials, and I'm not saying that's the case here, meddling in the day-to-day affairs of the staff and if you got a project and you wanna put it over here and they might want to put it in their district over there.” Also, many elected officials are not sophisticated in their understanding of economic development according to the economic developers interviewed. They do not understand marketing or the challenges of economic development. They are looking for instant results and do not understand that cluster-based economic development is a long-term proposition.

The second barrier to taking a cluster-based approach identified in the interviews was the need to work regionally. Parochialism needs to be overcome. It does not make sense for one county to take a cluster-based approach by itself; however, it is at the county level that incentives are decided. Return on public investment is based on local tax revenue. This makes it politically difficult to work regionally. Local elected leaders think in terms of political boundaries rather than economic boundaries. The regional economic development group was not created until 2001 and has been slow to promote regionalism. Nevertheless, the area is starting to take a more regional approach in spite of the public sector. As Kanter (2000) points out, “industry has created regionalism more than the Greenville Chamber or the Spartanburg Chamber” (Kanter, 2000, p. 161).

The third hindrance to taking a cluster-based approach is the public/private nature of economic development entities. A local government economic development department is more likely to face the political challenges discussed above. A chamber of commerce, on the other hand, faces fewer of these political challenges, but has its own issues. A chamber of commerce is a membership organization and any membership

organization implies privilege. The same members tend to be involved repeatedly. This select group of members holds more tightly the economic development controls than is beneficial. That is limiting because clients are not gaining access to all resources they may need because those resources might not be members of the Chamber. According to the Greenville/Spartanburg economic developers interviewed, true public-private equal partnership seems to make the most sense for cluster-based economic development. However, the area's history has not been one of public-private partnerships. The area's scramble to overcome its obstacles to development, including its second class status in the Palmetto State, was a history of strong civic entrepreneurs. This struggle has shaped the civic culture of Greenville/Spartanburg.

Historical Evolution of Greenville/Spartanburg

The upcountry Piedmont area of South Carolina was a contested area in its early years and remains distinct from the more gentrified coastal area. In the early 1800s, small scale manufacturers, in particular of textiles, were attracted to the area by the abundant waterpower. Although the geography invited factory development, the low country South Carolina state legislature offered little support for industrial projects and indeed often worked against such developments in the antebellum era (Eelman, 2004). Despite the success of some manufacturing enterprises, there remained a general attitude in the state that industry was a danger to South Carolina's way of life. Eventually, the political realignments caused by the Civil War would allow the town-based elites to wrest power from the rural elites.

Development of a textile cluster and corporate paternalism. The textile industry in the Piedmont was initially established by northern immigrants because of the

competition from more efficient English mills, but by the Civil War most of the mills were locally owned (Mitchell, 1921). Like New England mill towns, the northerners established the mills in rural areas where they could take advantage of waterpower, and where some provided tiny villages, which included housing, stores, hotels, churches, and schools for workers. This was the beginning of a culture of corporate paternalism.

Although the Civil War brought hardship and deprivation to many upcountry residents, the area's manufacturers experienced a wartime boom as a result of demands for uniforms, weaponry, and ammunition. The Reconstruction period brought the area new challenges and a change in social and economic prosperity. By the 1870s, an effort to attract northern and foreign investors by touting the area's cheap labor and construction costs, the so-called cotton mill crusade, began to pay off. The new mill owners dominated the political economy of the Piedmont, establishing their own social order. The local elite hoped that they could create a diversified economy around "King Cotton Mill;" however they found themselves with a single industry economy heavily dependent upon the North for machinery, finance, textile finishing, and other auxiliary services (Carlton, 1982).

The textile boom also precipitated the so-called "mill problem," once the middle-class merchants and professionals realized that the poor mountain folk, whom they had so eagerly recruited, could be threats to the social order so carefully crafted in the generation since Reconstruction. Cotton mill paternalism was celebrated in order to assuage the elite's fears of a wage-earning white industrial class. This welfare capitalism was deemed necessary to protect the workers, and thus society from the demoralization that many South Carolinians saw implicit in industrial life.

Anti-union civic culture. Despite the long hours and low wages in the mills, unions did not make any real progress until the 1930s and even today the area prides itself on its non-union culture. In 1888, the Knights of Labor stirred up a disturbance in Greenville, but the swift response of the industrialists quashed the union movement. This started the trend that continues until today of a virulent anti-union stance by business and community leaders. In 1934, a general strike erupted in both Greenville and Spartanburg. Under pressure from the mill owners, the governor called out the National Guard. Several strikers were killed as the union movement was violently suppressed. Huff (1995) sees this as the end of the paternalistic mill system as the mill owners viewed the strike as a sign of their workers' ungratefulness for the industrialists' benevolence.

Continuing anti-union sentiment was exemplified by the banning from the area's public television stations in 1995 of a documentary, *Uprising 34*, because the film was sympathetic to the unions (Stoney, 1995; Teter, 2002). It is insightful to note that into the 1980s the Greenville Chamber of Commerce and area schools offered anti-union courses (Sloan & Hall, 1979). Russell (1979) likens Greenville/Spartanburg to a laboratory for a social experiment to see if through paternalism and corporatism, a community can prevent workers from organizing.

Military spending creates a constitutive moment. Coinciding with the development of a textile economy was a trend in military supported development. With the outbreak of the Spanish-American War, the Army started looking for warm weather staging bases. In 1898, the community leaders of Greenville convinced the military to establish Camp Wetherill. The training base closed in 1899, but not before making a significant economic impact on the region (Huff, 1995). When World War I broke out, a

group of local business leaders from the Chamber of Commerce petitioned the military to establish another base in Greenville, and in 1917 Camp Sevier was established. Not to be outdone, the Spartanburg Chamber of Commerce raised \$200,000 to lure Camp Wadsworth to Spartanburg and build a major highway between the cities (Works Project Administration, 1940). The thousands of soldiers who passed through these Piedmont bases gave the area a great economic boost.

The 1929 stock market crash, the subsequent prolonged closing of all banks in the county and the national depression hit Spartanburg hard. The arrival of another large troop-training facility in the buildup to World War II, Camp Croft, brought hundreds of thousands of soldiers through the county and helped revive the local economy. In Greenville, the U.S. government built Donaldson Air Force Base, which was an active base until 1963 when it was turned into an industrial park. Clearly, federal spending helped the local economy, but it also fostered development of some key industries.

Civic entrepreneurs and boosterism. One of the major contractors for the construction of the Greenville Army Air Base was the Daniels Construction Company, later to become the Fluor-Daniels Construction Company. The owner of the company, Charles E. Daniels, would be a major player shaping not only postwar Greenville/Spartanburg, but also the modern South. Concerned with the lack of work for returning service men and wanting to create business for his construction company, he developed and implemented a strategy through which he called on potential industrial customers in the Northeast. Working closely with textile magnates Robert Stevens of J.P. Stevens & Co. and Roger Miliken, the so-called "Industrial Ambassador of the South," Daniels helped recruit 400 industrial plants to the South with over 250 of these locating

in South Carolina (Canup, 1981). As this growth machine recruited factories, it encouraged the companies to give Daniels Construction the building contracts. They also made sure that the companies were the “right” kind of company, that is, non-union.

The leaders of Greenville/Spartanburg would even prevent large employers from moving into the area if they were unionized. When French tire maker Michelin was looking for a possible location for its new factory in 1974, it initially received a cold reception until it was learned that the family patriarch was a staunch conservative and hostile to unions (Maunula, 1999). The company’s paternalistic welfare capitalism perspective turned out to be a perfect fit for the region as the company now employs over 9,000 South Carolinians. In 1977, Phillip Morris bought land near Greenville and planned to build a \$100 million plant and employ an estimated unionized 2,500 workers. Hearing of this, the Chamber launched a successful campaign to discourage the tobacco firm from establishing itself in the area (Sloan & Hall, 1979). When Mazda was deciding whether to build its 3,000-worker unionized plant in Michigan or Spartanburg in 1984, the Spartanburg business community publicly asked it not to consider the South Carolina location because having a unionized plant would have a “long-term chilling effect on Spartanburg’s orderly industrial growth” (Falk & Lyson, 1988, p. 85). This long term obsession with order and control among the elite reaches deep into multiple layers of the Piedmont’s economic history and has important implications for the civic culture.

Civic entrepreneurs attract Europeans. When Roger Miliken moved the headquarters of his textile company from New York to Spartanburg in 1954, he started systematically encouraging German and Swiss companies that supplied the textile industry to set up facilities in the region to be close to their customers. In the early 1960s,

he convinced three of his suppliers, Rieter Machine Works Ltd. (Swiss), Sulzer Brothers Ltd. (Swiss), and Menzel Machine Works (German) to open their U.S. operations in the Piedmont. Miliken was the epitome of the progressive, yet paternalistic, business leadership that “constituted a kind of shadow government, more cosmopolitan and more enduring than most local politicians” (Kanter, 1995, p. 243).

Seeing the success with foreign investment and wanting to diversify in the wake of cheap Japanese textile imports, the Greater Spartanburg Chamber of Commerce launched Spartanburg’s Reverse Investment Program (Maunula, 2005). Headed by a transplanted New Yorker, Richard Ellery Tukey, from 1951 until his death in 1979, Spartanburg became one of the first U.S. regions to market for foreign investment offering inexpensive land, plentiful water, energy, cheap labor, no inventory tax on manufactured goods warehoused in the state, a moratorium on property taxes, state-supported technical education centers that would train workers at no cost, and no unionization (Tunley, 1973). Their efforts were rewarded in 1965 when the German chemical giant, Hoechst, chose to build a \$200 million polyester fiber factory in the heart of America’s major textile cluster. By 1979, Tukey had lured more than 60 foreign companies to South Carolina, and today Spartanburg County alone is home to more than 100 international companies representing 20 countries (Teter, 2004). Tukey is today honored in Spartanburg, and I-85 has been dubbed “Tukey turnpike” for his recruitment efforts.

BMW growth pole of the automotive cluster. This previous foreign investment was an important factor leading to Munich-based Bayerische Motoren Werke AG’s (BMW) 1992 decision to locate its \$600 million, two thousand-employee North

American assembly plant in the Piedmont (Maunula, 2005). Of course, the \$130 million in state and local industrial incentives (including tax credits, tax abatements, job training, free and prepared land, road improvements, free apartments, and even an extension of the Greenville/Spartanburg Airports' runway to accommodate 747 jets) probably helped (Ady, 1992). The investment proved larger than expected as BMW has invested \$1.9 billion and employs more than 4,000 workers.

Suppliers to BMW such as Dana Corporation's \$30 million plant and Stankiewicz International's \$18 million insulation plant have been attracted to the area, creating three times as many jobs as BMW (McCurry, 2003). An economic impact analysis by Schunk and Woodward (2000) finds that BMW's annual economic activities in the state are \$4.1 billion, account for over 16,000 jobs, and add \$2.4 million in additional local government revenues. Nearby Clemson University, partnering with BMW, Michelin, IBM, and Microsoft, has created an International Center for Automotive Research in order to make the area a leader in automotive research and development. On the other hand, Spartanburg has been forced to dramatically increase its tax rates in order to maintain its ability to pay for public services in the wake of the BMW deal (Turner, 2001). Even though the true public costs of the deal might never be known, the industrial recruitment of BMW was a growth pole for the creation of an automotive cluster that relies on flexible and agile production originally developed by the textile industry.

Creative destruction wrought by the demise of the textile cluster. The economic news for upstate has not been all positive. At one point about 70% of the American textile industry was within a hundred miles of Greenville/Spartanburg. After peaking at almost 230,000 jobs in 1972, textile and apparel employment has shrunk every

year since (Schunk & Woodward, 2000). According to Teter (2002), six out of every seven apparel jobs in Spartanburg County disappeared between 1971 and 2002. Layoffs in the textile industry continue to hit the region. But despite these cuts, unemployment remains low. Anderson, Greenville and Spartanburg counties all maintain low unemployment rates. In addition to bringing cultural diversity to the region and being active members of the community, foreign investment helped counteract the demise of the textile industry in Greenville/Spartanburg (Cobb, 1993).

Economic development organizations and a coup. Traditionally the Chamber of Commerce has been the primary agency for maintaining and improving the business environment in both Greenville and Spartanburg. In the early days, economic development was directed by the paternalism and personal style of a handful of mill owners. This shifted to an interlocking tight-knit network of major corporate leaders and elite families using the Chamber to implement their policies. However, the power of the Chamber is waning as the primary economic development agency as both Greenville and Spartanburg have moved to a public-private model.

In 2000, the Greenville area had a record \$1 billion in investments and was prospering. Nevertheless, in April 2001, with no warning and without allowing dissenting council members to publicly debate the issue, the Greenville County Council voted 9-2 to stop giving \$150,000 annually to the Greater Greenville Chamber of Commerce for economic development and to establish its own economic development corporation. The funding was about one third of the Chamber's industry recruiting and development program (Moorefield, 2001). Instead, the Council decided to budget \$550,000 to establish a public/private partnership. The Council gave a number of reasons for

terminating the contract including a pay-for-play mentality at the Chamber, the need for a more regional approach, the trend of other benchmark communities converting to public/private partnerships, and greater taxpayer accountability (Henderson & Brooks, 2001).

The move ignited massive debate in the business community, as well as among council members. Many claimed that it was a waste of public money to spend more on quasi-governmental economic development efforts and that the decision was politically motivated because the Council wanted to punish the Chamber for the endorsement of a tax increase proposed by the county school board (Bell & Moorefield, 2001). There were other charges that the secrecy of the vote violated the state Freedom of Information Act by not debating the issue in public. Even the governor expressed concerns that a change would threaten the momentum of the state's economic engine (Hammond, 2001). Nevertheless, the Council refused to back down and established a steering committee to set up its own organization.

As a result, the Greenville Area Development Corporation (GADC) was established in July 2001 to promote and enhance the economic growth of Greenville County by serving as the single source contact for economic development in the greater Greenville area. Small business development, entrepreneurship, and technology transfer would remain with the Chamber and GADC would concentrate on recruitment and expansion. GADC is funded primarily by tax dollars (79%), but it also receives supplemental marketing funds from private-sector investors. The GADC staff reports to a board appointed by the county board of supervisors. The GADC is the county's agent for

economic development. As its agent, the GADC has the sole responsibility to negotiate property-tax-based incentives, but final approval rests with Greenville County Council.

Working with nearby Clemson University, plans were launched to build Centers of Excellence around university research strengths to attract high-tech growth to South Carolina. The target clusters include automotive, biopharmaceuticals, advanced materials, aviation, and business headquarters. The GADC claims to be private sector driven, nevertheless, despite no direct reporting lines, local elected officials have much greater oversight power of economic development than when the Chamber controlled it.

The GADC has reached détente with the Greater Greenville Chamber of Commerce. The Chamber concentrates on developing capacity necessary for strong technology and small business sectors and leaves attraction and expansion to GADC. The Chamber has started a community visioning process called Vision 2025 chaired by the president of Furman University. The core principles of the community strategic plan will be a strong, diverse and sophisticated economy; maintaining quality of life in order to recruit and retain businesses and individuals; and fiscally conservative, but socially concerned, government and businesses that aid segments of the population that need help. Underlying Greenville Vision 2025 is the understanding that to have a healthy community they must have a healthy economy. The Greater Greenville Chamber is now looking to the Greater Austin Chamber for its organizational arrangements.

Following a Greenville Chamber of Commerce intercommunity visit to Austin in 2001 to better understand how its power structure promotes an open entrepreneurial environment, a group called the Carolina Crescent Coalition, made up of members from business, academia, and economic development was organized. Its goal is to transform

the Upstate into a world-class center in a handful of defined technology fields. Kemet Corp., a maker of electronics components; Clemson University; the Greater Greenville Chamber of Commerce; Fuji Photo Film Inc.; and Softlab Inc. a technology company owned by BMW, are part of the effort. The Coalition is based on the Austin model of economic development as the Coalition believes Austin's success in microelectronics and computing technology was created by forging partnerships between local industry and the University of Texas (Collier, 2001). They have identified areas where Clemson excels and formed subcommittees that match up to clusters, such as advanced materials and automotive. This is the start of the formation of institutes for collaboration.

Spartanburg took a less controversial approach to revising its economic development structure, but also evolved a more public driven economic development effort. Local, but German owned as of 1981, Lockwood Greene Engineering, America's oldest professional services firm, was brought in to make recommendations, and at a retreat, business and community leaders agreed to establish the not-for-profit Spartanburg County Economic Development Corporation (SECDC), which would be affiliated with the Spartanburg Area Chamber of Commerce. Citing Spartanburg County budget cuts lowering the economic development funding to the Chamber from \$300,000 to \$240,000 and the need to reorganize for a changing game, the SECDC was established in 2002 with an annual budget of \$650,000. \$400,000 the support coming from the private sector.

A public/private regional economic development organization, the Upstate Alliance, designed to market the ten upstate counties was established in 2001. It took several years for all the governments to pay their member dues, which are based on 50 cents per capita. For example, the Spartanburg County Economic Development

Corporation finally approved the \$50,000 admittance fee as a line item in its 2003 budget. The regional target clusters included automotive, motorsports advanced manufacturing, microelectronics, headquarters and distribution, biotech and pharmaceutical, and telecommunications. This regional organization serves a marketing function and currently seems not to be a major player.

State of South Carolina context. The state's role in economic development has also changed. In the early years of the area's recruitment efforts, South Carolina did not give direct concessions to incoming corporations. However, as competition between the states for companies intensified, South Carolina began to engage in industrial recruitment (Watson, 1995). Today, South Carolina has become one of the top states for granting industrial incentives as an aggressive tax incentive policy is part of its overall economic development strategy. Additionally, South Carolina's corporate income tax rate at five percent is the lowest in the southeast. Clearly, Greenville/Spartanburg's approach to economic development reflects the state's approach.

In 2003, the South Carolina Department of Commerce commissioned Michael Porter's Monitor Group to establish a framework for guiding future economic development in South Carolina. Based on the report, *Building the Competitive Advantage of South Carolina: Toward a Shared Economic Vision* (2003), the South Carolina Competitiveness Initiative was launched to raise the standard of living across the state by building industry clusters in automotive, chemical products, textiles, and tourism. Porter reported that the state's traditional economic model of attracting outside manufacturers to the state on the basis of low cost was not sustainable. He found too much competition for resources within the state as different economic development groups

have pitted one region or county against another for the right to call a company home. Porter went on to call for the creation of "institutions for collaboration," such as universities, industry associations, chambers of commerce, and economic development agencies.

Economic Development Example: Parochialism and Competition

An example of how communities compete in South Carolina is Hubbell Lighting moving its 235-employee headquarters from Spartanburg to Greenville in 2004 because of a better location and incentive package. After competition among Savannah, Georgia, Asheville, North Carolina and neighboring Greenville, Spartanburg was not able to put together an attractive enough deal for Hubbell's \$25 million headquarters. Instead, the company opted to locate near the Clemson University International Center for Automotive Research (ICAR) where Greenville did have an advantage in luring the lighting equipment manufacturer because of the state bond money used to develop the ICAR project (Winston, 2004). In a 2005 speech to the Greenville Chamber of Commerce, Porter warned that this kind of parochialism and regionalism in which different areas of the state compete with each other for credit and pieces of a pie that is already too small is not sustainable (Bell, 2005).

Structure Versus Actor-Centered Drivers

A combination of structure and human agency drive the economic development policy choices in Greenville/Spartanburg, but the actor-centered factors seem to be viewed as more important by economic developers. Nonetheless, structural factors matter. See Table 13 for an overview of the theories' application in Greenville/Spartanburg.

Table 13. Summary of the Community Power Theories Applied to the Upcountry Greenville/Spartanburg

Greenville/Spartanburg	
<i>Structural Theories</i>	
Market Model	Highly competitive for mobile capital and see a clear unitary interest in promoting growth through industrial recruitment and expansion
Economic Forces	Demise of textiles due to foreign competition led to extensive industrial recruitment and expansion
Civic Culture	Private sector driven. Corporate paternalism and elite control. Virulently anti-union
<i>Human Agency</i>	
Regime Theory	Elite have given way to more of a regime-type power structure
Growth Machine	Active and engaged in the policy and implementation process
Civic Entrepreneurs	Less dominant than in the past, but key business leaders are active in shaping economic development policy
Economic Developers	Economic developers claim to have discretion, but appear to be captured by business interests.

Market model. The economic developers are clearly aware that capital is mobile across local government boundaries, even within their region, and that their communities have a unitary interest in the well-being of their economy and attracting economic activity. As one economic developer mused, “We can hear other communities’ footsteps and some go by us a little bit.” This competition to maximize their economic position is often a hindrance to taking a regional cluster approach. Thus, Peterson’s (1981) market model does seem to have validity.

Economic forces. Business cycles are another structural factor that the economic developers identified as shaping their policy choices. When the economy slowed in the 1980s and unemployment ran high, job creation was a priority. In the 1990s, there was near full employment, so the emphasis switched to capital investment for tax revenues. The recent recession caused unemployment to rise, and thus the emphasis reverted to job creation. One economic developer lamented, “This goes through cycles and I have probably been through three cycles here. In the '90s everyone who wanted to work had two jobs to choose from and then we looked at the capital investment for the taxes. Now

we're concentrating more on jobs because in the regional economy we have had layoffs and plant closings.” Not said by the economic developers, but an axiomatic point from their comments, is that being judged predominately on capital investment and quality jobs created each year is not conducive to true cluster-based development, which is a longer term, more nuanced endeavor.

Civic culture. The civic culture in Greenville/Spartanburg influences economic development policy. The theme of having a private sector driven culture permeated the interviews. It is insightful to revisit the perceived contrast with Portland,

You got to understand the economy here is driven by the private sector. It is not driven by the government or universities. It is driven by the private sector. The reason they say Portland is great is the rules and regulations. Portland imposes so many restrictions nobody wants to do anything. I think we took bits and pieces and incorporated them into the landscape, the streetscape, neighborhood planning, but I think Greenville still has a lot of sprawl no question.

The term “private sector driven” is a bit of a euphemism for the corporate paternalism that still permeates the region, albeit, in a considerably less controlling manner than in the past. Structural factors led elected officials to share mutual interests with business in prioritizing economic growth; however, the nature of the local power structure has evolved.

Regime theory. Until recently, elite theory would have explained local economic development better than urban regime theory in Greenville/Spartanburg. Power flowed downward from the corporate elite, making it democratic theory in reverse. The elite manipulated the masses by exploiting symbols such as charity and the trappings of the mill towns. However, recently a network that includes government and non-government actors has taken the lead in economic development. Public-private economic

development organizations have been established that allow professional practitioners more discretion while also making them more accountable to elected officials.

Nonetheless, the economic developers' emphasize that they are private sector driven and that the elected officials look to the private sector for leadership. The relationships are both formal and informal. They have become what Stone (1993) would classify as a development regime.

Civic entrepreneurs. Civic entrepreneurship was a crucial factor in Greenville/Spartanburg economic development into the 21st century. An economic developer noted, "We have key civic leaders, key private businessmen that we can use their influence to help us open doors to local politicians, to state politicians, and occasionally federal politicians." Kanter (1993) points out that a succession of anonymous elected officials has been forgotten, but the long-serving Chamber of Commerce president, Richard Tukey, was immortalized in the call letters of the local public television station, WRET. Other civic entrepreneurs such as Charles Daniels, "the Industrial Ambassador of the South," brought their vision and commitment into the arena of economic development. However, the age of this type of civic entrepreneurship seems to have passed as economic development becomes more professional practitioner based. Nevertheless, a few current civic entrepreneurs were mentioned, including John Warner, Vice President for KEMET Corporation and founder of the Carolina Crescent Coalition, who is one of the new generation of civic entrepreneurs. This new generation of civic entrepreneurs works within a more popularly controlled regime structure than the older generation of elite civic entrepreneurs.

Growth machine. The growth machine, comprised of bankers, property investing, development, and real estate financing, is very active in the area's economic development efforts. One economic developer exclaimed, when asked about whether the growth machine was involved with the economic development process,

Sure absolutely! They are good allies. We work very closely upstream on a project, not each and every time, with general contractors, architects, engineers and that. Should it go downstream other people start to gain access and get involved. Even CPAs for a large extent, not a huge amount, but a growing percentage of our clients come from a growing base of sources one of which are CPA firms and they are looking for opportunities even though our client base has changed so much over the last couple years.

They are players in terms of the institutions and individuals serving on the boards of economic development organizations. They are also participants in efforts to attract and expand companies. Since they directly benefit from the recruitment and expansion of companies, they have a vested interest in maintaining this aspect of cluster-based economic development. Since the economic developers pride themselves on being private sector driven, the system is amenable for the growth machine to influence the area's economic development policy. As one economic developer noted, "Greenville is very private sector driven so obviously the growth machine has a great influence on what we do. The private sector sets the direction in which we go, not necessarily from the economic development policy standpoint, but the way you go about doing your work is very much focused on the private sector." It appears that business interests have captured the economic developers.

Broad Implications From Greenville/Spartanburg

Facilitating dimensions. Factors that help or hinder taking a cluster-based approach that were consistently identified by the economic developers in all the field

studies include performance metrics, institutional arrangements, the state context, elected officials, and the tax structure. Table 14 summarizes the findings in Greenville/Spartanburg regarding the facilitating dimensions.

The state of South Carolina was another structural factor that the economic developers identified to explain why they do cluster-based economic development. Porter’s high profile study of the South Carolina economy made a big splash. His comments that the attraction of BMW with incentive packages moved the region from a factor-driven (low cost) strategy to an investment driven approach that cultivates innovative-driven economy was well received. The use of the cluster concept permeated economic development in the Piedmont, but was also taken with a grain of salt by practitioners.

Table 14. Summary of Facilitating Dimensions in Greenville/Spartanburg

Dimensions	Insights From Greenville/Spartanburg
Performance Metrics	Traditional measures of jobs and investment
Institutional Arrangements	Many parochial institutions that do not cooperate
State Context	Michael Porter has developed a strategic cluster development plan for the state. State encourages recruiting
Elected Officials	Often parochial
Tax Structure	South Carolina has an impressive array of incentives mostly geared toward capital intensive industries and some toward the region

Common themes. There are trends that run through each of the field studies that have implications for this research. As noted in the proceeding chapters, these themes are that the nature of economic development activities is changing, economic developers are becoming more professional, there is a move toward public-private partnerships, or at least a balance of public and private driven policy, and evolutionary economics. Insights from Greenville/Spartanburg are summarized in Table 15.

Table 15. Common Economic Development Themes in Greenville/Spartanburg

Themes	Insights From Greenville/Spartanburg
Changes in Economic Development	Reported that most of their inquiries came from site location consultants
Professionalism of Economic Development	Most of the economic developers had their CED and conducted professional visits to Portland, Austin, etc
Relationship of Public to Private Institutions	In both Greenville and Spartanburg economic development moved to a partnership from a chamber model. Several business networks forming and becoming involved in governance.
Evolutionary Economics	Institutional lock-in of paternalism. Constitutive moment with BMW attraction. Creative destruction of the textile industry

Concluding Remarks for Greenville/Spartanburg

Business interests dominate economic discourse in Greenville/Spartanburg. They do not direct the day-to-day activities of the economic developers, but the business perspective regulates the attitudes of the economic developers. Stated by one economic developer, “Government’s role is infrastructure, making sure that there is adequate infrastructure; that could be water, sewer, gas, roads, and parks, for example business parks. Making sure that government fosters a business-friendly proactive attitude that encourages and fosters business. Reducing bureaucracy and easy-to-get permits, at lowcost, and understanding their return. Return is going to be from the jobs and the salaries they pay taxes on. Not from the sewer permit. Retention and expansion is the most important thing that an economic developer can do.” Any social equity issues are perceived as involving workforce education. Everything is conceived from a business perspective.

This means that the business community is the driver of cluster-based economic development policy in Greenville/Spartanburg. This appears to be happening. The

business community is leading the drive for regionalism and research centers that support cluster activity. In the next example, another manufacturing based community will be presented, but one in which the business community is not actively involved in economic development policy so the professional economic developers are driving the policy.

Chapter Seven

Field Study of Lynchburg, Virginia

Lynchburg is also a southern manufacturing city, but its civic culture, state context, and involvement of business in economic development differ from Greenville/Spartanburg. The Hill City, since the days of tobacco, was not dominated by one industry. Even so in the mid-twentieth century, one fourth of the population was dependent on Craddock-Terry Shoe Corporation, and this affected economic development policy until the company's slow demise beginning in the 1970s. The absence of strong regimes, growth machines, or civic entrepreneurs in the context of a less activist industrialization minded state, has allowed professional economic developers to shape Lynchburg's approach to economic development.

Organization of This Chapter

The chapter is divided into seven sections. The first section gives a brief introduction to Lynchburg's economic situation and distinct civic culture. The second section presents the findings from the confidential interviews of economic developers on their perspectives on cluster-based economic development in Lynchburg. The third section covers Lynchburg's historical evolution. Details of Lynchburg's early history prior to the 1940s can be found in Appendix C. The fourth section is an illustrative example of economic development. The fifth section presents the findings on the application of the community power structure theories to Lynchburg. The sixth section discusses the broad implications from Lynchburg regarding economic development. The final section presents concluding remarks on Lynchburg.

Introduction to an “Average Joe” Mid-Sized Manufacturing City

Lynchburg is the epitome of a small-to-mid-sized manufacturing based American city. Its economic history is unpretentious as it steadily evolved to what it is today. It has had no “near death” experiences that have galvanized the community. The demise of tobacco production allowed the rise of metal manufacturing. The departure of the huge wireless manufacturer, Ericsson, created a plethora of small wireless companies and an emerging cluster. There was no massive infusion of outside money. General Electric and Babcock & Wilson did serendipitously invest in the area in the 1950s and this is paying off today with a developing wireless and nuclear cluster, but this is trivial compared to federal spending on hydroelectric power in the Pacific Northwest, SEMATECH in Austin, or BMW in South Carolina. Lynchburg even missed out on an interstate. Instead, the area has maintained a generally good economy through industriousness and innovation. Local economic developers, however, recently realized that they cannot maintain the status quo. They are seeking outside investment, in particular research centers, to develop their main clusters. But of more interest is the reorganization of institutional structures to better take a cluster-based approach. These public administrators recognize that they need to adjust their economic development policy in the face of structural forces.

Economics Developers on Cluster-Based Economic Development

Trying to take a cluster-based approach. Economic developers claim to be trying to take a regional cluster-based approach and it seems that the regional organizations are making a considerable effort to develop clusters. As a regional

economic developer elaborated, “We are attempting to develop our strong clusters where we see our future on a regional basis, particularly in wireless communication, nuclear support, pharmaceutical, and general manufacturing that relies on automation robotics. We see those fields as fields that are our future and we're concentrating on those. The support, and recruiting efforts are designed to support, those clusters.” Nevertheless, the localities continue to have more of a targeted marketing perspective. The regional economic developer went on to explain, “The localities have an attitude which goes to the heart of politics. They will recruit whatever the zoning ordinance allows. Most of our communities have small shops with just a few people. They're essentially under funded for what the communities want from them because it is a wonderful thing politically for them to attract business. Whether it is a call center or whatever. New jobs and investment. They're forced to do it.” A local economic developer stated, “We're doing things differently than we were a few years ago. Different approaches to marketing. We started to focus and we've had target market studies and strategies done. We realize that we need to capitalize on types of cluster things versus a shotgun approach. These advantages have led us towards metal fabrication and we're also interested in plastics.” He then gave an example of recruiting a plastic bottle company to supply a large pharmaceutical manufacturer in the county. Intense global competition is claimed to be the primary motivator for this approach. For the economic developers, the only option left seems to be to develop and build on what is already in Lynchburg.

Hindrances to taking a cluster-based approach. The economic developers claim to be trying to take a regional cluster-based approach, but often feel hindered by jurisdictional concerns, which are exacerbated by Virginia’s unique independent city

system. They claim that the Virginia system discourages the business community from taking a leadership role because of the political bickering inherent in the system. As one economic developer noted,

This system in Virginia is a real part of the problem. It discourages the business community from taking a leadership role. I think the business community leaders in other places do not see boundaries. They see boundaries here. A major business in Campbell County wants to extend the waterline. It gets extremely political between the city of Lynchburg and Campbell County. I do not think you have that situation where you do not have the independent city system apparent. You eliminate a lot of the political horse trading and bickering. Keeps businesses from being involved. It motivates local government to be very involved because they live or die on what happens inside that line.

The independent city system is perceived to heighten the usual difficulties with regionalism.

On the other hand, the newly formed institutional arrangements consisting of a strong regional economic development organization having a broad range of economic development functions is conducive to adopting a cluster-based approach. When asked what was impelling cluster-based economic development, one economic developer commented, "The forces leading to a cluster-based approach are a regional economic development organization." Clearly, institutional arrangements matter.

Another impediment is that the local growth machine is no longer a strong force that can be harnessed because of the centralization of banks, accounting firms, and other support companies. Further, costs and benefits of economic development are measured locally, and this discourages regional cooperation. The economic developers are attempting to develop clusters, in particular in wireless communication, nuclear support, and general manufacturing that utilizes automation, but impediments hinder a strong regional approach.

The economic developers also mentioned the civic culture as affecting their economic development approaches. One economic developer said, “Of what I’ve read about Austin it is a much more enlightened business community. With the university there is a major influence. It is not nearly as conservative as much of Virginia is and they think differently.” The economic developers commented on the smugness in Virginia and Lynchburg that precludes too much government involvement in the local economy. They point out that economically, Lynchburg has always done well, particularly when compared to North and South Carolina when their economic base changed. There is not a great desire for government to become involved in the economy, and the community has not demanded aggressive economic development. Examining Lynchburg’s economic history helps explain this civic culture.

Historical Evolution of Lynchburg

Founded in the mid-eighteenth century by Charles Lynch as a trading depot on the southern bank of the James River, the mountainous town quickly gained prominence as a regional tobacco market. That same year saw the beginning of regular meetings of the Society of Friends (Quakers), which lasted until the 1820s when most of the religious community left the area due to their opposition to slavery (Brown, 1936). Transportation infrastructure was important to Lynchburg’s early economic development and religion would remain an important part of the Hill City’s civic culture. Future Reconstruction Governor Francis H. Pierpoint noted in 1858 that Lynchburg had more the appearance of an industrial Yankee town than a genteel southern city (Christian, 1900).

Tobacco cluster. Antebellum Lynchburg’s tobacco industry made it the second richest per capita town in the United States behind the whaling town of New Bedford

(Horner and Winfree, 1936). Priding themselves on their innovativeness in tobacco, Lynchburgers unabashedly asked to be called “Tobacco City.” Essentially, Lynchburg had a tobacco cluster. However, the world of tobacco factories was a world of black slavery. The factories employed over a thousand workers, virtually all of whom were black, and most of whom were slaves (Tripp, 1997). Other industries, in particular foundries, also profited from the area’s railroads and slaves.

During the late 1870s, the tobacco trade revived from the turmoil of the Civil War and, as it did, Lynchburg’s prospects brightened. Nevertheless, Lynchburg’s days as Tobacco City were numbered as the milder leaf of tobacco more suited to the Virginia/North Carolina border area gained popularity and the Piedmont soil became depleted. Further, the Bright tobacco belt area developed improved transportation facilities, and the Durham, Winston-Salem, and Danville manufacturers better incorporated mechanization (Christian, 1900; Tilley, 1972).

Wisely, many of the wealthy Lynchburg industrialists foresaw the demise of tobacco in central Virginia and shifted their fortunes to other industries that would continue Lynchburg’s prosperity (Robert, 1952). Many of the industrialists who made their fortunes on tobacco invested in speculative economic development land companies. Often working with northern financiers, they created stock ownership companies that bought up large tracts of land for industrial and residential development. These private economic development efforts ultimately paved the way for Lynchburg’s successful manufacturing diversification from tobacco.

Creative destruction of the tobacco cluster. Lynchburg entered a period of prosperity in the latter part of the 19th century, with iron works, blast furnaces and steel

mills fueling the growth. Many of these companies are still active today. Several other industries developed or relocated to Lynchburg including textiles and in particular shoes. A Bavarian immigrant established Craddock-Terry Shoe Co. in 1888, which became Lynchburg's largest industry and the largest shoe manufacturer in the south. Another innovative Lynchburg company founded in the late 19th century was C.B. Fleet, which is today a worldwide leader in personal health and beauty products. Thus, foundries, shoes, retail, and textiles were important industries, making Lynchburg the third richest per capita city in the US according to the 1913 Lynchburg Directory. A large diverse number of industries developed, some of which would remain cornerstones of the economy for over a century.

The 1920s was a brief period of boosterism and business-led change for Lynchburg. The city developed its manufacturing base, particularly its foundries, but lost much of its wholesale business to larger cities in the south. The Lynchburg Chamber of Commerce was reorganized to better promote industrial recruitment and touted Lynchburg's geographic situation, distribution facilities, native-born labor force, and business-like government. Nevertheless, the boosterism was temporary, and by 1929 the city began an extended developmental hibernation, yet domination by its large shoe company.

“Progressive backwardness” characterized Lynchburg into the 1950s. The city had become a sophisticated urban center run by an “oligarchy that was efficient, honest, and often boring,” gently nudged by a rotating panel of businessmen known as the City Council (Potter & Potter, 2004, p. 126). The business elite was able to maintain its control over the Hill City's government and preserve the economic social order until the

1990s. Like the First World War, the Second World War was a boon for Lynchburg's economy. Over 100,000 GIs came to Lynchburg for its wholesome War Recreation Center and notorious red light district (Elson, 2004). Craddock-Terry pumped out boots for the military, the hosiery mill was making parachutes, and Lynchburg Foundry made parts for troop ships as well as parts for the top secret atomic program. However, mass production of basic commodities did not bring with it advanced technologies.

Anti-growth elite. The post war years held good news and bad news for Lynchburg that would have important implications for the Hill City's economic future. The local economy was sluggish after the war because, according to Laurant (1997), there was not much help from the state, there were not technology spin-offs from war production, the area lacked boosters, and Craddock-Terry hindered the entrance of new firms that might raise wage rates. Founded in 1884, Consolidated Textiles closed in 1957, leaving over 1,000 mostly unskilled workers unemployed. There was some growth such as when a Lynchburg businessman convinced Philadelphia Gear to open a facility to produce Limatorque industrial valve actuators in 1949, which is now a major supplier to the nuclear industry (Nurmi, 1995). Nevertheless, a gloomy 1955 observation on the "twilight zone between Richmond and Roanoke" noted that "there is small chance that its growth will proceed quickly in the foreseeable future ...most of the industries are locally owned, and the whole economy of the city is closely controlled by a small number of local families" (Gottman, 1955, p. 507). Clearly, nobody saw the second northern invasion coming.

Second northern invasion creates a constitutive moment. The second northern invasion started when Babcock & Wilcox (B&W), a nuclear technology company, and

General Electric (GE) set up manufacturing plants in the area. B&W, the first privately owned nuclear industry company, relocated from Ohio because the Navy wanted a secure facility in a remote spot that was not too far from Washington, D.C. and a wealthy stockholder lived nearby (Laurant, 1997). With the growth of the nuclear Navy, B&W sales of nuclear fuel elements, cores and other reactor parts boomed. This helped start a nuclear support industrial cluster that remains today.

GE was the second major company to move to Lynchburg in the 1950s that would have important implications for the area's future. In 1955, GE had already relocated plants to Waynesboro (specialty controls), and Roanoke, (industrial controls), and was looking for a location to consolidate its production of miniature electric rectifiers. Facing union troubles at several of its New England operations, GE decided to shut down those plants and construct one plant. After looking at 200 possible sites, GE chose Lynchburg in 1956 for its \$5 million, 800-person plant because, in addition to available non-union labor, the local and state governments had a pro-business attitude (Laurant, 1997). In 1958, GE moved its communications products department from upstate New York to the Lynchburg facility. By 1960, Craddock-Terry had slipped behind GE in local employment, and B&W was closing fast in third. But, more importantly, these two new manufacturers would bring an influx of talented and educated people to Lynchburg.

Two other less publicized, but perhaps equally important, events that would shape Lynchburg's future into the 21st century occurred in the 1950s. First, a native Lynchburger founded First Colony Life Insurance Company, writing special needs policies for high risk persons that other companies refused to insure. This would grow to be a \$10 billion company by the 1980s. Second, the son of a local bootlegger, Reverend

Jerry Falwell, founded the Thomas Road Baptist Church in the defunct Donald Duck Bottling Company building. The church, and its subsidiary organizations, would become one of the area's largest employers and give Lynchburg an international reputation. These historical accidents would have a significant impact on Lynchburg's economic future.

On the other hand, there was disappointment for the area as well. As part of the Interstate Highway System, I-64 was planned to go through Lynchburg, but since the area had a Republican congressman, President John F. Kennedy had the route altered through Democratic controlled Charlottesville, the home of Bill Battle, who served on a PT boat with Kennedy during World War II (Potter & Potter, 2004). The interstate would have greatly helped Lynchburg since truck traffic has been the cornerstone of manufacturing (Freehling, 2004). Lynchburg remains the biggest city in the commonwealth without a nearby interstate. Despite this setback, since the 1950s, Lynchburg has evolved from a small, tightly-knit manufacturing city to one with a diverse economy with most residents living in surrounding suburbs.

Diversification rather than clusters. During the recession of the mid-1970s, the *Wall Street Journal* ran a series of articles on the economic situation in the broad-based economy of Lynchburg to show how a representative city reflected the macroeconomic trends in the U.S. economy (Gannon, 1973; Gannon, 1974; Levine, 1976). The reporters found that the hilly industrial city had a diversified economy of foundries, garment shops, shoe factories, paperboard mills, and electronic plants that was generally riding out the ramifications of the oil embargo and price controls. The forest products industry accounted for about 35% of the economic base employment in the greater Lynchburg area (Schallau et al., 1986). There were some shortages of raw materials, but

unemployment remained low. The Chamber of Commerce worried that a possible repeal of the federal statute that permits states to pass laws banning union shops would hurt industrial recruiting. Additionally, the Chamber was impatient for the resumption of national economic growth, but Lynchburg would have to wait for better economic times.

The recession finally hit Lynchburg when the unemployment rate jumped to 8.4% in 1982. Ironically, just the year before, Hershey Foods decided not to build an \$86 million, 350-workers candy plant in the area because of worries about finding enough workers (Boodman, 1982). The main industries GE, Lynchburg Foundry, B&W, Burlington Industries, and Craddock-Terry laid off an estimated 6,740 workers. Due to record losses by the automobile industry, the hardest hit was Lynchburg Foundry, but the hundreds of smaller companies producing shoes, paper products, medical supplies, and electronics, also felt the general economic malaise. The area would bounce back, but never match its manufacturing heyday.

Local economy evolves. The area has suffered significant economic change and dislocation over the past 25 years, yet the economy is still doing reasonably well. The textile and furniture industries lost jobs. Craddock-Terry Shoe Company was slow to replace antiquated processes and succumbed to foreign competition in 1997 (Pyatt, 1987). A symbol of Lynchburg's manufacturing prowess since 1896, Lynchburg Foundry was bought by Intermet in 1984 and opened a new technical center in Lynchburg to serve the automotive OEMs and Tier 1 suppliers, only to file for bankruptcy in 2004. Others like Massachusetts-based Galileo Electro-Optics Corporation, which made fiber optics sensors, set up plants and closed a few years later (Schultz, 1994). Footloose Call centers have been attracted to Lynchburg because of the available labor force (Reilly, 2004). One

of the area's biggest industries, the Reverend Jerry Falwell and his \$100 million Old-Time Gospel Hour empire demanded and got tax exempt status and forgiveness of a \$1.4 million tax debt in 1986 (Gast, 1986). Despite these tribulations, Lynchburg and central Virginia were already positioned to better handle the changes brought on by the global economy than other former tobacco and textile areas, such as southside Virginia, because the area has had a niche in higher-end manufacturing.

Examples of high-end manufacturing in traditional industries are American Hofmann Corporation, RR Donnelley and Frito-Lay Inc. In 1974, the American Hofmann Corporation, the world-leading manufacturer of balancing machines, moved its production and sales facilities from New Jersey to Lynchburg. In 1990, RR Donnelley, headquartered in Chicago, bought the Meredith/Burda ink manufacturing plant and now employs 600 workers. The originally German-based ink manufacturer was attracted to Lynchburg by the Chamber of Commerce in 1971. The new diversified printing services company received a \$50,000 grant and workforce training in return for a \$5 million investment in binding equipment and machinery. In 1996, Frito-Lay Inc. chose Lynchburg over Martinsburg, West Virginia and Chambers, Pennsylvania because of its attractive business climate and ready infrastructure to build a \$150 million highly automated snack chip factory and warehouse. In return, the company received local tax breaks worth \$4 million, almost \$4 million in free land with improvements, and \$3 million from the state (Sturgeon, 1996). Today, Frito-Lay employs approximately 300 people, including a large number of chemists and technicians trained in electronics, instrumentation, and automation.

Nuclear cluster. However, the lynchpins of Lynchburg's economy are the spin-offs from General Electric and Babcock & Wilcox, which have spawned clusters and served as surrogate research universities. Using Mayer's (2003) metaphor, these companies became the centers of their own galaxies: the former, wireless-focused; the latter, nuclear-focused (Nason, 2005). Despite Lynchburg having a number of institutions of higher education, including Lynchburg College, Liberty University, Sweet Briar College, Randolph-Macon Woman's College, and Central Virginia Community College, the area lacks a major research institution. Lynchburg community leaders are attempting to develop collaborative research centers with Virginia Tech to overcome this perceived shortcoming.

B&W, now BWX Technologies (BWXT), and France-based Framatome ANP, the largest nuclear fuel and services company in the world, formed a partnership in the nuclear fuel business in 1987. When the European giant opened its 1,500 employee North American headquarters, it made sense for them to come to Lynchburg. The companies are separate entities serving different segments of the nuclear market. Secretive BWXT, a subsidiary of McDermott International of New Orleans, makes 90 percent of the nuclear fuel assemblies for Navy ship reactors, while Areva (formerly Framatome ANP), makes fuel assemblies and provides services for commercial nuclear power stations (Kranz, 2001). Other companies have spun off from the nuclear giants, such as Novatech, which designs and fabricates systems and components for nuclear markets. Framatome ANP and BWXT continue to recruit new workers as the nuclear industry is enjoying its first big spurt of activity in nearly three decades.

Wireless cluster. The growth of the wireless cluster was not so trouble free. In 1989, GE Mobile Communications was bought out by Ericsson North America, which invested \$50 million on new equipment and machinery. In return the manufacturer of land mobile radio and cellular equipment received a \$250,000 Governor's Opportunity Fund grant to build a road, and the city provided an additional \$430,000. In 1997, Ericsson decided to build a 115,000-square-foot distribution plant and add 150 workers. The governor approved a grant of \$800,000 for Ericsson, and the city contributed \$1.2 million in cash.

Ericsson grew to be Lynchburg's largest employer, with 3,500 employees on the payroll. Nevertheless, in 2000, Ericsson began shifting most of its cell phone production to lower cost production in Asia, Eastern Europe, and Latin America. Despite layoffs, Ericsson pressed for more than \$600,000 in additional incentives, even though it was moving hundreds of jobs out of Lynchburg and threatened not to relocate the distribution operation from Texas if it did not receive the incentives (Flores, 2005). Many of the workers were outsourced to Sanmina-SCI; however, the California based electronics manufacturer announced that it was going to close its Lynchburg operation in 2003 (Battle, 2003). To make matters worse for the city's budget, tax-exempt Falwell Ministries bought the former Ericsson property.

The demise of the huge wireless manufacturer created a number of reluctant entrepreneurs and a wellspring of small companies emerged from the engineering base that Ericsson left behind. Born out of the local demise of Ericsson, M/A-COM Wireless Systems makes land radios used by agencies such as police departments, the military and some private firms. Other spin-offs include Grayson Wireless, a circuit board

manufacturer; CTA Communications, a provider of engineering support for land mobile radio networks; Innovative Wireless Technologies, a wireless equipment supplier; and many others. Other companies, such as communications filters manufacturer Microwave Circuits Inc. in 2004, have been attracted because of the ex-Ericsson engineers (Battle, 2004). Using Virginia Tobacco Indemnification funds in 2005, a center to conduct advanced wireless research was established at a former GE wireless test and research site. Thus, a wireless cluster has formed from the dying star that was GE.

Economic development organizations in Lynchburg. The Chamber of Commerce had been the key player in economic development until the late 1980s. The Lynchburg Board of Trade, founded in 1870, was the ancestor of the Lynchburg Chamber of Commerce. Following a rallying cry that the Hill City needed a dose of “spizzerinctum,” or vitality in its economic development, the present organization was incorporated in 1915 as the Lynchburg Chamber of Commerce. The name was changed to the Greater Lynchburg Chamber of Commerce in 1969 to identify its expanding sphere of influence and service. It had committees for finance, civics, traffic, publicity and advertising, good roads, membership, and industrial marketing and production. In 1969, the Chamber spent \$12,043 on industrial development of which \$2,326 was reimbursed by the government (“Chamber Reports,” 1970). The Chamber remains active today in retail development and tourism, but its role in economic development has been greatly curtailed in the last twenty years.

During the 1950s and 1960s, Virginia began to push for more and better economic and industrial development, although the state was not as industrial development-oriented as many southern states (Cobb, 1993). The state would generally count on the

communities to determine by their own efforts how much industry they attracted (Johnson, 1962). The main local economic development institution across the Commonwealth was the local chamber of commerce. As a 1953 *Washington Post* article stated, “The most impressive feature of this new-industry campaign is the cooperation that helps make it possible. Chamber of Commerce, local groups of businessmen, civic clubs, real estate interests, railroads, utilities and state government, all have a stake in building up the Virginia economy and all are lending a hand” (“Virginia Sparks,” 1953, p. R3). The Virginia General Assembly allowed local governing bodies to make grants to Chambers of Commerce for industrial recruiting in 1962. This did lead to some conflict of interest issues as in 1964 when Lynchburg Chamber officials were caught spending public funds to improve their own industrial land (“Tieup of C of C,” 1964). Nevertheless, the Chamber, and the business elite behind the Chamber, remained the main economic development entity until the 1980s when most localities created their own, mostly public-funded, economic development entities.

Lynchburg’s gone, but not forgotten regime. Even though the major arrivals in the 1950s altered the economic and social dynamics of Lynchburg, the city was controlled by the same men who directed the large, mostly locally owned, companies (Laurant, 1997). They served on the City Council and community boards. They went to the same social events where they discussed economic growth and social change. Having been a council member and mayor of Lynchburg during this period, Joseph Freeman’s *Government is Good: Citizenship, Participation, and Power* (1992) takes a thinly veiled interpretive look at local government in Lynchburg. He likened political power to electricity that makes the city run.

One of the last of the benevolent powerbrokers that made the city run was George Stewart. A native New Yorker, he helped found the First Colony Life Insurance Company in the 1960s and led it to becoming a multi-billion dollar company. Stewart served as president of the Greater Lynchburg Chamber of Commerce and was honored repeatedly, as the Most Influential Person in Lynchburg by *The News and the Daily Advance*. In 1997, GE Capital bought First Colony Life and Stewart died in 1999. However, before his death, Stewart and the other old guard helped founded the next generation of economic institutions. The businesses would take a leadership role in forming a regional organization, but it would evolve into a public sector driven institution.

Economic Development Example: Creation of a Cluster Organization

Born out of a Lynchburg Chamber of Commerce program, a new model for economic development would emerge. In 1988 the business community launched a program called Team 2000, which hired Regional Technology Strategy (RTS) Inc. of Chapel Hill, North Carolina to study the local economy and make recommendations for the year 2000. One of the recommendations was a regional marketing organization, the Region 2000 Economic Development Partnership. The name also reflects the size of the region, about 2,000 square miles. The Region 2000 area includes Amherst, Appomattox, Bedford and Campbell counties, as well as the cities of Lynchburg and Bedford. The public-private partnership had a 15-member board with representatives from the seven participating localities, and the funding was 50/50 public/private. In 1988, area business leaders were asked to join local communities in contributing \$1.1 million toward a three-year regional marketing effort, and they raised \$ 1.2 million (Ruff, 1996). However,

private contributions have declined and the funding is now closer to 30/70. The mission of the new public/private partnership was industrial recruitment. In 1991, Region 2000 landed its first major catch when it brought in First Brands Corp., whose line of products includes Glad plastic wrap and STP automotive products. It now employs 350 workers. In 1994, RTS was brought in again, this time using state regional competitiveness funds, to update the economic development strategy.

RTS recommended that the Region 2000 partnership reorient its mission toward promoting overall regional competitiveness through cluster-based economic development. Industrial recruitment, while still an important activity, was intended to serve this larger vision. In addition to wireless and nuclear services, advanced manufacturing, healthcare, materials handling, and insurance were identified as important wealth producing clusters. So by the late 1990s, Region 2000 changed direction to focus less on business attraction and more on the growth of existing clusters.

Region 2000 began encouraging corporate expansions and started supporting several workforce development programs. For example, as result of recommendations from a local metal industries association, Region 2000 received a state grant to establish an Advanced Manufacturing Technology Education Center focused on precision metalworking training. Lynchburg based its center on a similar training center in Ohio. This fit with the RTS analysis, which had identified almost 90 metal-related firms within the regional economy, about half of which were industrial machinery companies.

One of the recommendations of the new RTS study was the creation of a technology council. In 2000, the Regional 2000 Technology Council was created with the mission “to create an environment that fosters innovation and growth within the

technology sector of Virginia’s Region 2000 by providing valuable services to Region 2000 companies and assisting with the recruitment of technology based firms” (R2ktech Website). Thus, the region took a major step toward a truly cluster-based approach.

In the summer of 2005, four regional groups related to economic development, the Economic Development Partnership, the Regional Commission, the Technology Council, and the Workforce Investment Board united under a single organization. It is a new approach to better coordinate regional economic and technology development, workforce development, and public infrastructure planning in Region 2000. The board of the economic development council decided to reverse its economic development allocation mix: the 70/30 ratio that tilted toward attracting outside companies was changed to 30/70 in favor of attention to local businesses. Thus, the economic institutional arrangements continue to evolve to better take a cluster-based approach.

Structure Versus Human Agency

Traditionally, Lynchburg took a laissez-faire approach, so what policy existed was generally driven by structural forces. The move, however, to taking a cluster-based approach was a practitioner-led phenomenon. The mobility of economic resources combined with intergovernmental competition for investment constrains Lynchburg’s policy choices, but the form of development that the community chooses involves considerable public administration discretion.

Table 16. Summary of the Community Power Theories Applied to Lynchburg

Lynchburg	
<i>Structural Theories</i>	
Market Model	Unitary interest perceived for conservative growth and perceived as rational to compete for mobile investment
Economic Forces	No “near death” experiences that caused radical changes in policy. Increased competition has caused new policies to be considered
Civic Culture	Conservatism and smugness that preclude too much government

	involvement in the local economy. Evangelical under tones
<i>Human Agency</i>	
Regime Theory	Weak or non-existent regimes
Growth Machine	Limited activity due to corporate relocations and apathy
Civic Entrepreneurs	Currently non-existent
Economic Developers	Allowed wide discretion in shaping policy

Market model. The economic developers did see a general unitary interest for the development of wireless communication, nuclear support, pharmaceutical, and general manufacturing that relies on automation robotics clusters. Equity issues raised by their development activities would be addressed by improved education and “the rising tide raises all boats” perspective. They realize that Lynchburg needs to compete with other communities for mobile capital. Thus, the interviews corroborate Peterson’s (1981) unitary interest theory, but at the same time show that there is room for human agency in the approach to economic development that is pursued by a locality.

Economic forces. Lynchburg has generally been able to stay one step ahead of Schumpeterian market forces. The Hill City took advantage of the tobacco boom and rose to prominence. When dark-fired tobacco lost popularity, the area had already switched to iron foundries. Later, the city lost much of its iron industry as the development of Birmingham, Alabama got under way, but new wholesale firms and industries moved to the area. Diversification of traditional industries kept the local economy generally stable. The New Economy has created some challenges, but serendipitous events in the 1950s have left the area positioned to make the necessary adjustments to adapt to the knowledge. The economic developers felt that their very broadly diversified economic base, complemented by a few well positioned clusters, has enabled the area to overcome the challenges that it faced in the early 2000s and the loss

of 6,000 jobs. Nevertheless, Lynchburg never faced economic devastation from radical changes to its industries, so structural economic forces have only caused Lynchburg to adjust its economic development policy incrementally. An economic developer pointed out, "Places like Lynchburg had full employment. The employment rate until the 1980s was near full employment. In North and South Carolina the agricultural base changed and had to put people to work. We did not have that experience here." Economic forces did not lead to radical changes in policy.

Civic entrepreneurs. Perhaps because the city has only incrementally changed its policy, it has not needed strong civic entrepreneurs for economic development. Rex Hammond, Executive Director of the Chamber commented, "People no longer stay in one job, or one town, their entire working life. And if someone is just passing through they don't have enough stake in the place to make them want to be a leader of it" (Laurant, 2002, p. 220). Since the demise of Lynchburg's power brokers, the area lacks the private-sector business owners and managers who bring their vision and commitment into the arena of regional cluster development. There are business executives on the various economic development boards and councils, but they do not seem to be a driving force in shaping policy. A new breed of "civic entrepreneurs" has not emerged, but instead, economic development is being driven by public administrators. The economic developers who are driving policy seem to follow the New Public Management vision of public administrators as entrepreneurs emulating not only the practices but also the values of business.

Regime theory. Stone's (1989) prototypical informal arrangements by which public bodies and private interests function together in order to be able to make and carry

out governing decisions seem to be absent in Lynchburg. Business interests are represented on boards and councils, as well as via formal and informal interaction with economic developers. The generally uninterested public is represented through the strategic planning process and the discretion of public administrators. The public sector economic developers view themselves as being advocates for business, so the interests of business are well served by the public sector driven economic development policy. Further, the political culture and institutional structure are supportive of business interest, which faces little if any resistance from the community. Thus, based on the economic development interviews, classical growth regimes seem to be lacking in Lynchburg.

Growth machine. The economic developers lamented the lack of an aggressive growth machine to support their economic development efforts. “The people who benefit the most, real estate, retailers, service industry people, are the ones who put the least in. All of the real estate people are franchises. Any time you bring a new company into town or help an expansion, employees build houses or buy lots so they are the ones to benefit. You would think they would very much want to encourage economic development programs.” The land-based elite and others who benefit directly from economic development projects in Lynchburg are steadily becoming based outside of the Lynchburg area. An economic developer commented, “Over the years they have played less and less of a role to the point where I'm concerned about it. They played a role when they saw the unemployment rate at 10%. When the banks were headquartered here, the large businesses still had their headquarters here. Those headquarters have left and moved to places like Charlotte and with that, a huge chunk of leadership. People that can make decisions have left.” Jonas and Wilson (1999) describe the growth machine as

coalitions of land-based elites, tied to the economic possibilities of places, who drive urban politics in their quest to expand the local economy and accumulate wealth at the expense of local neighborhoods, but in Lynchburg these interests are often not based locally. Banks and real estate firms have consolidated and moved to places like Charlotte, North Carolina. The branch offices are not leading the economic development charge. The bankers, developers, and realtors still sit on the boards and commissions, but are not as powerful as they were in decades past.

This fits with Heying’s (1997) findings in Atlanta where he discovered that the decline in civic leadership from the growth machine is logically connected to corporate delocalization and decreasing incentives for elites to mobilize communities in order to enhance place-based development. This has given public administrators greater discretion, but also diminished a powerful ally for economic development.

Broad Implications from Lynchburg

Facilitating dimensions. Factors that help or hinder taking a cluster-based approach that were consistently identified by the economic developers in all the field studies include performance metrics, institutional arrangements, the state context, elected officials, and the tax structure. Table 17 summarizes the findings in Lynchburg regarding the facilitating dimensions.

Table 17. Summary of Facilitating Dimensions in Lynchburg

Dimensions	Insights from Lynchburg
Performance Metrics	Attempting to get away from traditional metrics and instead rely more on output/activity measures. Local governments still rely on machine & tools tax for a metric
Institutional Arrangements	Adopting regional organizations for cluster-development
State Context	State has only recently started using cluster terminology and does not have a specific cluster investment program
Elected Officials	Tend to be parochial, but generally leave economic development to the professionals

Tax Structure	Heavy reliance on the machine & tools tax to determine ROI of public investments often runs counter to cluster development.
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Common themes. There are trends that run through each of the field studies that have implications for this research. These themes are that the nature of economic development activities is changing, economic developers are becoming more professional, and there is a move toward public-private partnerships, or at least a balance of public and private-driven policy. Looking back at Lynchburg’s history, it is clear that change rather than equilibrium is the long term trend. The insights from Lynchburg are summarized in Table 18.

Table 18. Common Economic Development Themes in Lynchburg

Themes	Insights from Lynchburg
Changes in Economic Development	Economic developers identified the importance of Websites and how site consultants are involved with many of the projects
Professionalism of Economic Development	Even the local economic developers are hiring consultants to do studies (e.g., target market studies)
Relationship of Public to Private Institutions	The public sector is trying to keep the business community engaged through the creation of councils and partnerships
Evolutionary Economics	The creative destruction of the tobacco cluster begat manufacturing, and the demise of Ericsson begat a wireless cluster. Historical accidents of GE and Babcock & Wilcox’s relocation to the area in the 1950s led to Lynchburg’s most promising clusters

Concluding Remarks for Lynchburg

The void left by the absence of strong civic leaders, regimes, and the growth machine have allowed the professional economic developers considerable bounded discretion in adopting cluster-based policies. The civic culture does not allow extensive

government spending on economic development or a particularly activist policy regarding business. Nevertheless, the professional economic developers do appear to have human agency in shaping the policy. They have attempted to address some of the institutional barriers to cluster development by creating a unified economic development organization including marketing, business assistance, and workforce development. The next field study of Roanoke shows, that despite similar structural forces to Lynchburg, Roanoke has not taken similar steps needed for an effective cluster-based approach.

Chapter Eight

Field Study of Roanoke, Virginia

Sixty miles up the Shenandoah Valley from Lynchburg is the city of Roanoke. It faces many of the same structural and human agency factors as Lynchburg. Both are fairly diversified manufacturing communities, although Roanoke since its inception has been heavily dependent on the railroad. Both lack strong regimes, civic entrepreneurs, or the prevalence of the growth machine, and the economic developers have considerable discretion in shaping policy. The civic cultures are not dissimilar, and the two communities face the same state-enabling environment. Nevertheless, Lynchburg has started to address the institutional barriers to adopting a truly cluster-based approach, while Roanoke remains fragmented and is taking more of a target market approach. This field study attempts to explore these differences.

Organization of This Chapter

The chapter is divided into seven sections. The first section gives a brief introduction to Roanoke's economic situation and civic culture. The second section presents the findings from the confidential interviews of Roanoke's economic developers on their perspectives on cluster-based economic development in Roanoke. The third section covers Roanoke's historical evolution. Details of Roanoke early history prior to the 1940s can be found in Appendix C. The fourth section contains several examples of economic development in Roanoke. The fifth section presents the findings on the application of the community power structure theories to Roanoke. The sixth section is the broad implications from Roanoke regarding economic development. The final section is concluding remarks on Roanoke.

Introduction to Location Rather Than Strategy

Roanoke's competitive advantage has been its geographical location that local boosters have been able to leverage. Roanoke became a railroad town because of its location and has continued to attract and grow industry because of it. However, the geographical needs of today's growth companies are different from traditional industry. This has caused two distinct core areas to develop in the region. The Roanoke Metropolitan Statistical Area has maintained the traditional manufacturing and service-related industries, while the Blacksburg-Christiansburg-Radford Metropolitan Statistical Area (New River Valley), about 40 miles away, with Virginia Tech functioning as a major economic driver, has the technology-oriented clusters around it. These core areas need to work together to benefit the whole region, but the institutional arrangements do not support this regional approach to cluster development.

Economic Developers' Perspective on Cluster-Based Economic Development

More target marketing than cluster development. Despite claims from economic developers that they started cluster-based economic development, once the clusters were identified by consultants, privately; some were less assured that they are truly taking a cluster-based approach and view it more as target marketing. One economic developer proudly proclaimed, "It used to be we would take anything that came along. Today, we literally have one of the most focused marketing programs of any regional economic group in the mid-Atlantic, and that was told to me by the folks at 310 Marketing and they do marketing for organizations such as ours in a four-or five-state area." The fragmented institutional arrangements in Roanoke, which will be discussed

latter, lead toward a cluster-based development being conceived as a synonym by economic developers for target marketing.

According to the economic developers, taking what they call a cluster-based approach was a logical decision derived through consultation with their peers in the region. As one economic developer put it, “We noticed that firms like to ‘flock together’ so it made sense to gear advertising and promotion toward a particular industry cluster.”

Another economic developer commented that it was a pragmatic approach,

It allows a locality to use its limited marketing funds more efficiently and effectively. It is a better approach than the old "shotgun" method to attract business. The idea that industries agglomerate for a number of reasons, such as economies of scale, specialized services available in the region, the presence of a research institution, or to utilize skills in an existing labor shed. The presence of these things encourages local governments to promote the cluster concept.

The economic developers consistently pointed out that with limited budgets they could only concentrate on a few industries, so they wanted to concentrate on those activities that had the highest return on their investment (ROI), with return primarily being measured by the impact on the tax base.

Thus, there were a few key reasons identified for Roanoke to take a cluster-based approach. This approach allows a locality to use its limited marketing funds more efficiently and effectively. It is a better approach than the old "shotgun" method to attract business. It is easy to comprehend the idea that industries agglomerate for a number of reasons, such as economies of scale, specialized services available in the region, the presence of a research institution, or to utilize skills in an existing labor shed. According to Roanoke area economic developers, the presence of these factors encourages local governments to promote the cluster concept.

Hindrances faced in Roanoke to a cluster-based approach. The economic developers identified six major hindrances to their taking a cluster-based approach in the Roanoke area. The first is the concern with the lack of diversification of clusters. As Rosenfeld (1997) pointed out, taking a cluster-based approach is perceived to be akin to “putting all your eggs in one basket.” As one economic developer put it,

Let’s take VCRs for example. One point in time, a VCR, electronic component cluster was probably a great one to have, but guess what? VCRs have become archaic. If you are a community that had VCR manufacturing, VCR tape manufacturing, things all related to VCRs, right now you’re probably hurting. So there is definitely something said to being diversified, but what you find is, from a recruitment standpoint, it is a lot easier to recruit for what you already have because it is a proven entity.

It is very difficult for economic developers and elected officials to grasp that a cluster-development approach is not necessarily the antithesis of diversification.

Second, as one economic developer described the “political will,” to ignore a firm that might not add value to the cluster is just not there. This is particularly true in the more economically distressed communities. One economic developer pointed out, “Certainly, in Martinsville, Henry County, they have a desperate need for jobs. That is a short-term strategy. You can meet that by bringing in traditional jobs....If you are going to transform the economy into the 21st century today, forsaking all those 13.5% of the people who are unemployed, I think you have a huge problem. That’s your socioeconomic problem.” Another developer described how the slow pace of achieving the “political will” hindered cluster-based development,

The political side quite honestly is the political will and then on the economic side there might be political will too, but there is always the untested and the unknown. It would take a lot of time and effort to improve why. Say you want to go after something very specific within the plastics industry. The plastics industry is way too broad and you want to

do something very specific so you do some research and talk to Plastics One and engineers down at Tech and you say this is what we want to focus on. Okay you get this all together and this has taken time and then by the time you get your facts together the industry has changed. Time doesn't stand still and industry doesn't stand still. Patents don't stand still. Everything is a moving target. By the time you have convinced the, quote unquote, political powers that this is the way to go, life has moved on. That's the awkward part of working in a political realty. They expect time does not move forward.

Clearly, short-term oriented elected officials that expect immediate results can hinder cluster-based economic development.

The third hindrance identified was that the Virginia tax structure with its heavy emphasis on the machine and tools tax making it difficult to concentrate on clusters that are not in the heavy industry sector. Fourth, the lack of legislation in Virginia allowing industry specific incentives was cited as a hindrance. Fifth, not all the agencies related to economic development have congruent agendas. For example, one community wanted to develop its health care cluster by providing additional training so that licensed practitioner nurses could become registered nurses, but the welfare groups objected to this training for those who already had jobs because their performance metrics dictated that they should help the unemployed and not help those with jobs to get better jobs.

Finally, the region does not seem to have the civic culture required for successful cluster-based economic development. Grabher (1993), in his study of the decline of the Ruhr industrial cluster, noted how repeated interactions among the same group of economic actors created a rather inward and provincial mentality that discouraged the search for new activities and partners needed to rejuvenate the local economy. This notion of negative lock-in seems applicable to Roanoke's difficulties with adjusting from

being an old industrial region. In order to understand this civic culture impediment, it is crucial to understand the region's economic history.

Historical Evolution of Roanoke

The key to Roanoke's economic development from the town of Big Lick to the major city of the Shenandoah Valley has been its location, early civic boosterism taking advantage of the New South movement, and a northern-owned railroad. In 1881, major local landowners, Mayor John Trout, and Councilmen Peyton L. Terry convinced the community of less than 700 to raise \$10,000 as a cash bonus to Norfolk & Western (N&W) and sent a young man on a midnight ride to Lexington to tell the railroad executives that Big Lick wanted their business (Coleman, 1954). The town resolution, plus free land for the terminal facilities and tax incentives, convinced the railroad to set up operations in the newly renamed Roanoke. In just a few years, the "gateway" to the iron and coalfields of southwest Virginia would become the Commonwealth's fifth largest city, as well as the fourth fastest growing urban area in the nation (Larsen, 1985).

Business-friendly civic culture. Under northern tutelage, local entrepreneurs took advantage of the opportunities created by the railroads and set up businesses and land development companies. The development companies distributed extravagant promotional circulars in the north and offered deals for companies willing to invest quickly. The land developers' efforts paid off as in five years the price of some farms went from \$800 to \$125,000 ("Growth of Southwestern," 1883). Local government began to develop, but it could not keep pace with the city's economic expansion. The local government's "open for business" ethos, exemplified by the 1884 city charter exempting capital invested in manufacturing enterprises from municipal taxation for ten years and

limited property taxes to less than one percent of assessed value, prevented much public infrastructure investment as mud streets and open sewers greeted visitors until the early 1890s (Moger, 1968).

Manufacturers and other businesses were attracted to the “boomtown.” The population increased at least 416% from 1880 to 1883, another 579% from 1883 to 1890, and an additional 143% from 1890 to 1892, for a combined 3,472% increase in twelve years (Dotson, 2003). New South pundits labeled Roanoke the “Magic City” because of its spectacular economic growth.

The image of the city would soon be tarnished when racist mobs, sparked by the Depression of 1893, lynched an innocent black man and rampaged through the city, forcing the mayor into hiding (Alexander, 1992). Northerners were shocked by the anarchy in this “model” New South City. *The New York Times* editorialized, “Roanoke has disgraced itself and brought reproach upon a flourishing community that should have prided itself on maintaining order and upholding law. It is of the new South, and owes its vitality to northern blood, but its birthright has been flung aside. It can only redeem itself by facing about and showing a determination to restore the sway of law, which a wild impulse led it to overthrow” (“Roanoke’s Reproach,” 1893, p. 4). In the aftermath of the riot, the city’s next generation of businessmen and promoters mounted a campaign to rehabilitate the city’s tarnished image and prevent any recurrence of challenges to their authority.

Because of Roanoke’s strategic location near the iron ore and coalfields of Appalachia, coupled with its transportation infrastructure, steel and iron fabricating plants became the main industries. They remain important to the Roanoke economy even today.

Other industries including textiles and building materials would develop in Roanoke for similar location reasons. Roanoke reemerged as an extreme version of all that was supposed to remedy the south's post-Civil War economic stagnation. The "New South Movement" marked the end of an era of social, economic, and political revolution and the beginning of the Industrial Revolution in the south (Woodward, 1951). However, as Dotson (2003) points out, "When that revolt and the city's decrepit appearance threatened to stall additional development, local elites 'reformed' Roanoke in ways that made investors less anxious. Those modifications, however, were largely superficial and failed to resolve the municipality's systematic and deeply embedded problems" (p. 2).

The early twentieth century was a prosperous time for Roanoke and saw the arrival of one of the area's largest employers: the American Viscose Corporation. In 1916, the Chamber of Commerce helped recruit the manufacturer of filament yarns used in apparel and decorative fabrics. The plant was expected to employ 1,000 workers for the malodorous process of turning wood pulp into artificial silk (Bishop 1998). The plant would emit waste sulfuric acid and zinc compounds so access to a river was required, as well as railroad service, an inexpensive labor force, a considerable tract of land, and secrecy for its novel process. Roanoke had all these characteristics. In order to attract and retain a loyal, efficient workforce, the company constructed a dormitory for women, who were needed for their "soft hands," and who made up almost half of the plant's labor force ("Viscose Corporation," 1927). As demand for rayon continued to grow into the 1940s, the plant expanded to almost 6,000 workers and became the second largest employer behind only the railroad. However, by the 1950s, nylon, acrylics, and polyesters were overpowering rayon and in 1958 American Viscose gradually closed the

Roanoke plant (“American Viscose,” 1958). Roanoke was left with a Environmental Protection Agency Superfund site and surplus workers.

Creative destruction from the demise of rayon. The post-World War II period was a time of general expansion for Roanoke despite some economic setbacks. These problems included the loss of American Viscose in 1958, several textile concerns closing, such as Burlington Industries’ Salem Hosiery Mill, and major layoffs at N&W when the industry shifted from steam to diesel equipment. Nevertheless, the release of pent-up consumer demand in the 1950s was felt more dramatically in Roanoke than nationally, and companies were attracted to the area (Stuart, 1965). The revival was symbolized by a temporary Christmas star put on a large hill overlooking the city, which evolved into a permanent display and a new city slogan, “the Star City of the South.”

Manufacturing subsidiaries were attracted to the region because of its distribution resources, including the construction of I-81 in the late 1950s, and its prime mid-Atlantic location. The huge American Viscose property was turned into an industrial park and attracted a large Sealtest dairy plant, as well as the Fred Whitaker Co. nylon dying plant. In 1947, Yale & Towne Manufacturing of Connecticut, now known as Yale Lock & Hardware, opened a plant to manufacture automotive specialty locks. The plant employed over 500 workers in the mid-1960s. One of its employees started Medeco High Security Locks in 1968, which now employs over 300. Graham-White Manufacturing, a manufacturer of pneumatic valves for locomotives, opened a plant that now employs over 200 workers. Other medium size manufacturers from the post-War era still have plants in the area.

Local firms also developed. Rowe Furniture began manufacturing upholstered rocking chairs in 1946 in a facility built to house World War II prisoners of war and grew to be a world leader in home furnishings (Hammersley, 1977). In 1955, Roanoke Electric Steel Corporation started melting scrap steel in electric furnaces and casting the molten steel into truck parts and building materials. Today, the highly automated mini-mill employs over 500 workers, but the local owners were recently bought out by another steel company (Lieberman, 2005; Adams, 2005). Advance Auto Parts, founded in 1929, began to grow. Today, Advance Auto Parts is the second largest automotive aftermarket retailer in the United States. Additionally, Roanoke participated in the national trend toward a service-oriented economy, becoming the financial, medical, and distribution and administrative center for western Virginia. Into the 1980s, The Chamber of Commerce hoped to continue this economic growth through continued attraction of diversified retailing, service industries, and small manufacturing plants (*Roanoke Times*, 1982).

Cluster growth poles arrive. In the 1950s, two large branch plants were attracted to the area and would become the center of today's mechatronic and optical clusters in Roanoke. The area had its biggest announcement since American Viscose when General Electric announced plans in 1954 to relocate its industry control department from Schenectady, NY, to a multi-million-dollar, one thousand-employee plant between Salem and Roanoke ("GE to Build," 1954). In 1959, International Telephone and Telegraph (ITT) opened a plant to manufacture special purpose electron tubes, and today ITT Industries Night Vision employs over 1,000 and is one of only two corporations in the United States that can design, patent, manufacture, and deliver the goggles that permit

a user to see in the dark. Many of the plants that are cornerstones of today's clusters in Roanoke were attracted to the area in the 1950s.

Alfred Stuart's (1968) dissertation examining the suburbanization of manufacturing in Roanoke provides some insights into Roanoke's economic development in the 1960s. The economy had stabilized from the major changes of the 1950s. Employment was spread over 18 industries, and only electrical machinery employed more than 15% of all manufacturing workers. Employment was dominated by large employers as only 16.3% of all manufacturing employment was in plants having fewer than 60 workers. Clustering linkages between firms were mostly non-existent. Economic development was mostly conducted by semi-public agencies, such as utilities and the Chamber, which offered industrial parks and buildings for industrial tenants on a lease or purchase basis. Stuart's (1968) conclusion was that the lack of functional association with the small central city caused suburbanization of manufacturing to be more complete than in major metropolitan areas of the time. This lack of functional association also implies that Roanoke had industries, but not clusters.

Interlude from active economic development. In the 1970s, Roanoke was not active in economic development as most of its large industrial sites were full (McDaniel, 1978). N&W and GE remained the area's major employers, with 5,500 and 3,500 workers respectively, and hundreds of smaller companies kept employment levels steady. The major economic development players were the Roanoke Valley Chamber of Commerce, First National Exchange Bank, N&W, and Appalachian Power Co. (APCo), but none of these organizations was actively recruiting. N&W had 60 sales offices in its 14 state region that would try to convince rail users to relocate to N&W's territory, but

Roanoke did not benefit from these efforts. APCo had discontinued its shell building program and the Chamber, with a total budget of only \$200,000, did not do any consistent advertising. McDaniel (1978) identified a shortage of large industrial sites with utilities, lack of incentives, and the multiplicity of governments, which often impeded recruitment, as the main reasons that more companies were not attracted to the area. The Roanoke Valley Industrial Fact Finding Commission was established in order to improve coordination, but not until the 1980s was a concerted effort made to improve the industrial recruitment process. These changes would include making economic development more government-driven.

Economic development institutional arrangements. Historically, a number of business organizations directed Roanoke's economic development before it became public-sector driven. The first civic and business promotional organization was the short lived Roanoke Commercial Club (1890-1891), followed by the Roanoke Board of Trade (1892-1904). In 1901, local wholesalers organized Roanoke Merchants' and Manufacturers' Association. It co-existed with the Board of Trade until 1904, when both groups merged into the Roanoke Chamber of Commerce (RCOC). These organizations conducted most of the same activities as today's public or public/private economic development organizations including promotion, hosting potential investors, and shepherding new companies through the relocation process. An example of the promotion included displays of Roanoke's industries at the 1907 Jamestown Tercentennial Exposition in Norfolk, Virginia. Additionally, these institutions provided financing, such as in 1907, when the RCOC raised \$100,000 to back the Roanoke Industrial Securities Company, a firm designed to assist the establishment of new

industries in the city by offering capital to needy corporations at five percent interest (Dotson, 2003). Thus, the activities of economic development have not changed greatly in Roanoke over its history.

Creation of an economic development partnership. Believing that the Roanoke area had lost industries because of lack of cooperation among local governments, the governing bodies of the City of Roanoke, Roanoke County, Botetourt County and the towns of Salem and Vinton agreed in 1983 to form a marketing and promotion agency (Kegley, 1983). The public/private partnership would be the instrument for getting industry to consider the region, but it would still be up to the individual jurisdictions to make the sale. The local governments contributed \$112,000, based on population, and the private sector raised \$150,000. Lucian Y. Grove, a Roanoke contractor and city councilman was elected president of the new organization. The Roanoke Valley Economic Development Partnership (RVEDP) was officially launched in 1983. What was heralded as “revolutionary” in regional cooperation has paved the way for many other regional organizations in existence today, including the Roanoke Regional Airport Commission and the Roanoke Valley Resource Authority; however, regionalism remains a contentious issue (Thornton, 2001; Bowers, 2003; Adams, 2004; Adams, 2005a).

Civic culture of Roanoke hinders regionalism. Parochialism is deeply entrenched in the mind-set of western Virginia, and true regionalism remains an elusive aspiration. A regional economic strategy (Center for Regional Economic Competitiveness, 2002) released in July 2002 by the Fifth Planning District Regional Alliance has not been endorsed by a single government in the New River Valley. Local chambers continually fight moves to merge into regional chambers. Newspaper editorials

criticize the concept (Adams, 2005f). A strategy-related campaign touting "NewVa" as a regional brand has not yielded an eruption of enthusiasm as only one local government uses the brand. The high-technology growth around Virginia Tech is only loosely connected with Roanoke, although, the establishment of the Carilion Biomedical Institute, an effort to build a biomedical community in the Roanoke Valley that leverages Virginia Tech's research, is a step toward connecting the areas (Adams, 2005b). Thus, the area has not embraced a consistent third wave approach.

While the Partnership continues to concentrate on marketing, retention generally is left to the local governments in the Roanoke valley. The steps local governments take cover a broad range of activities: making street and sewer improvements, helping with training programs, and stopping by to schmooze with management. Debell (1994) identified over twenty organizations in the area involved with economic development. They included not only the obvious players like the Chamber of Commerce, RVEDP and development officials in local governments, but organizations such as the Roanoke Redevelopment and Housing Authority, the Williamson Road Area Business Association, Downtown Roanoke Inc., and Total Action Against Poverty, which runs a program to encourage entrepreneurship in poor neighborhoods. It is an extremely fragmented institutional milieu compared to the other regions studied.

In the early 1990s, Roanoke experienced a series of lay-offs that caused some to question how economic development was organized. Defense cutbacks, and corporate mergers and downsizings had resulted in an excess of 8,000 lost jobs within an 80 mile radius of Roanoke. These layoffs included the closure of Gardner-Denver Co., a mining equipment company, and the loss of 400 jobs, as well as the 1993 departure of over 800

workers from Dominion Bankshares Inc. when it was bought by Charlotte, N.C.-based First Union Corporation. State Senator Brandon Bell (R) called for a unification of economic development efforts and for the RVEDP to be more proactive rather than reactive; however, the economic development professionals were opposed to any changes (Wall, 1993). The RVEDP did not change its approach; nevertheless, a number of economic development organizations emerged to handle aspects of economic development other than marketing the region.

Private sector starts to organize. Led by Carillion Health Care System, a coalition of the 50 largest employers in the valley, the Roanoke Valley Business Council (RVBC), was formed in 1993 in order to reach a consensus on a far reaching economic development plan for the area. Later, the RVBC, Virginia Tech, and chambers of commerce in the New River and Roanoke Valleys formed the New Century Council (NCC) to develop a community-based vision for the region. The NCC was formed with \$200,000 in state regional competitiveness funds that local economic developers wanted to use to hire more industrial recruiters (Yancey, 1993). The New Century Council has since morphed into the NewVa Corridor Technology Council, which is a non-profit public-private partnership devoted to technology-led economic development. NewVa was developed as a controversial brand identity designed to bring together the New River Valley, the Roanoke Valley and the Alleghany Highlands.

By 1994, RVEDP had a budget of over \$600,000 with most of the money coming from the partnership's member governments: the cities of Salem and Roanoke, the town of Vinton, and the counties of Botetourt, Craig, Franklin and Roanoke. By 2000, the budget had increased to over \$800,000, with about 60% of this coming from local

governments despite efforts to increase contributions from business members. The RVEDP, in the mid-1990s, had developed a targeted marketing approach aimed mainly at smaller companies (fewer than 200 employees) in the plastics, woodworking, chemicals, auto-related equipment makers, transportation companies and fiber optics, and related electronics industries. As to how these industries were targeted, the RVEDP director stated, "I don't have a scientific formula" (Debell, 1994, p. A1). This approach would become more systematic with the formation of a planning alliance.

The Fifth Planning Regional Alliance was formed from the Fifth Planning Regional Planning District Commission in 1997 to promote the economic competitiveness of the Roanoke region by funding studies, promotion, and business assistance centers. The planning region includes Alleghany, Botetourt, Craig, Franklin, and Roanoke counties; the cities of Covington, Roanoke and Salem; and the towns of Vinton and Clifton Forge. In 1968, Virginia was divided into planning districts based on the "community of interest" among its counties, cities and towns. A Planning District Commission (PDC) is a political subdivision of the Commonwealth chartered under the Regional Cooperation Act by the local governments of each planning district. The Alliance, which is made up of representatives from the public and private sectors, funds economic development projects in the region through the state's Regional Competitiveness Act.

Consultants develop strategies. In 1999, the Alliance commissioned California-based ICF Kaiser Consulting Group to study the economic situation of the region and make recommendations. The consultants introduced the region to cluster-based economic development and recommended that it focus on the optoelectronics, health

care, transportation-related manufacturing, transaction services, transportation services, and computer services clusters. Wood products, metals, apparel, and chemicals were also identified as clusters, but they were not considered competitive. The study concluded that to compete in the knowledge-based economy, Roanoke needed to take a collaborative cluster-based approach to economic development.

In 2002 and 2004, the Arlington, Virginia-based Center for Regional Competitiveness was brought in to design economic development plans for the region. The consultants developed six strategic themes: visibility, connectivity, quality of life amenities, knowledgeable workforce, innovation and entrepreneurship, and economic transformation (Center for Regional Competitiveness, 2002). They also updated the 1999 industry cluster analysis, identifying a number of at-risk and emerging specialized industry clusters. The clusters they identified included optoelectronics, motor vehicle parts manufacturing, pharmaceuticals, securities and insurance, hospitals, labs and medical services, primary metals, research and development, and mechatronics.

Mechatronics cluster. The last is an emerging field that combines electronics, mechanics and engineering. First coined in the late 1960s by a Japanese engineer, the term refers to a branch of engineering whose focus is combined mechanical, electrical and software systems (Adams, 2004a). Mechatronics can play a key role in applications that range from planetary rovers to autofocus cameras to triggers for air bags. It is a relatively small employment sector in the Roanoke area with 2,777 jobs locally, but the region's advantage stems in part from the presence of two major employers (Center for Regional Competitiveness, 2002). The GE Energy and Synchrony plant in Salem and the Kollmorgen plant in Radford are the growth poles for this cluster. The GE plant employs

more than 1,000 people in the design and manufacture of electronics and fiber optics. The other growth pole is the Kollmorgen division of Massachusetts-based Danaher Motion, a leading international manufacturer of high-performance motion control products and systems, which has been in Radford since 1959. Kotabe and Swan (1995) found that mechatronics tend to be less innovative and more threatened by competition than other convergent technology processes. This, coupled with the Roanoke cluster being based on branch plants, could make this cluster insecure.

Automotive cluster. Another cluster that has been identified for the region is the automotive cluster. The rise of a transportation cluster in the Roanoke Valley was part of a larger shift of the U.S. automobile industry to the south (Rubenstein, 1986; 1988; Helper, 1991). In the last thirty years, vehicle manufacturers and their suppliers have proliferated throughout Virginia and other southern states. Facing stiffer competition from overseas and less need to cluster around the Great Lakes steel supply, U.S., and later foreign-owned firms, flocked to the South starting in the early 1970s. Since the mid-1990s, this trickle has become a torrent. The Roanoke Valley of Virginia's central east coast location and business advantages are the driving forces behind the region's growing automotive/transportation cluster (Hedgcoth, 2005). The Valley is within a day's drive of two-thirds of the nation's population and within easy reach of both midwestern and southern automakers. In addition to market access and low labor costs, electric rates are among the nation's lowest, and Virginia Tech, 40 minutes away, is home of the Transportation Institute and Smart Road transportation research facility. Steering systems, transmission components, wheel hub bearings, and tires are all currently made in the Valley.

The development of this cluster started gradually as companies migrated to the area and has grown in the last decade. One of the earliest companies to the region was Akron, Ohio-based Mohawk Rubber. This privately owned company was growing modestly in the 1960s and decided to expand with the construction of new plants away from unions so it was considering Arkansas and the Roanoke area (Love & Giffel, 1997). In 1968, the Salem Industrial Development Commission offered Mohawk an \$8.3 million tax exempt revenue bond to entice the tire maker to the area. (“Salem, Va.,” 1972). In 1989, the wholly owned subsidiary of Yokohama Rubber of Japan acquired Mohawk and made a number of expansions to the plant. The facility now produces 70% of the passenger tires Yokohama sells in North America. It has 1,050 workers, making Yokohama one of the region's largest employers.

Experiencing a growing demand for trucks in the early 1970s, Cleveland, Ohio-based, White Motor Corporation decided to switch its heavy duty truck capacity from its relatively old and unionized plant to a new 300 acre \$57 million facility in Pulaski, which is sixty miles on the interstate from Roanoke (“White Motor to Build,” 1973; “White Motor to Start,” 1975). In 1981, AB Volvo of Sweden bought White Motor’s heavy truck business. After acrimonious negotiations in 1999, the Swedish company agreed to invest \$148 million and expand employment to 2,400 in return for \$60 million in state performance-based incentives over a 10-year period to support expansion and hiring and training of plant personnel (Larance, 2000). These companies formed the base for the recent growth of this cluster.

Since the mid-1990s, multiple automotive related companies have been recruited to the Roanoke Valley. The Valley's automotive cluster includes three Japanese

companies, Yokohama Tire, Dynax America as of 1996 (transmission parts), and Koyo Steering Systems of USA as of 1999 (electric power steering systems), as well as Pennsylvania-based Virginia Forge (wheel hub bearings for passenger cars and light trucks), which opened in 1997, and in 2000 Alabama-based Altec Industries (lift assemblies for utility vehicles). In 1995, Michigan-based Tower Automotive announced that it would build a \$50 million truck frame manufacturing facility in Virginia's Botetourt County that would create 120 new jobs in return for a \$500,000 Governor's Opportunity Fund grant to assist with site preparation, as well as workforce training funding and rail access funding ("Tower Automotive," 2000). Tower Automotive Inc. sold the facility in 2000 to its joint-venture partner, Metalsa S. de R.L of Mexico. The attraction of parts plants has had a cascade effect.

Economic future of Roanoke is not clear. Whether the Roanoke/New River Valley has evolved from a hilly railroad and traditional industrial hub into a center for emerging technologies is a matter of debate. The region is dotted with entrepreneurial companies that are pioneering research in fiber optics, biotechnology, advanced manufacturing and software applications. Nearby Virginia Tech has helped spawn many of these creative ideas, and an influx of venture capital has helped some local companies translate their concepts into marketable products. This research, on the other hand, indicates that the Roanoke MSA itself continues to be a rather homogeneous entity, characterized by a particular techno-industrial structure and institutional environment strongly geared toward its industrial past rather than seeking help from the high-technology Blacksburg-Christiansburg-Radford MSA.

The Roanoke area continues to recruit and depend on traditional firms, such as Integrity Windows and Doors and Cardinal Glass for much of its employment. The latter, Minnesota-based Cardinal Glass, announced a \$24 million, 100-worker insulated glass facility in 2003 after initially being rejected in 1998 because of air quality concerns (Lyne, 2003). The Roanoke suburb of Vinton beat out Mooresville, North Carolina and Buford, Georgia with an incentive package of more than \$1.3 million. Of that total, \$300,000 is a grant from the Virginia Governor's Opportunity Fund, while some \$120,000 is in job-training funds from the state's Department of Workforce Services. The following three examples are insightful regarding economic development in Roanoke.

Economic Development Example: Losing in the Game

For three years the RVEP, working with the Virginia Economic Development Partnership and Virginia Tech had been courting New York-based Reliable Automatic Sprinkler, which was looking to relocate its 350 worker fire sprinkler manufacturing and production development facilities to a lower cost area offering savings on taxes, utilities, and support services (Lyne, 2004). In addition to Roanoke, the site consultants hired by the manufacturer rounded the choice for the firm to Raleigh, North Carolina and Greenville, South Carolina. However in 2004, the privately held New York firm said it chose the South Carolina team, which included Clemson University, because it put together a better incentive package (Adams, 2005e). The package included a 20-year 6 percent Fee in Lieu of Tax agreement, \$2.5 million in county reserve funds for permanent capital improvements, and a \$1 million grant from the state to the county for infrastructure improvements (Finkelstein, 2004). Rather than offering \$1,000 per employee for workforce training, South Carolina, through its Technical College System,

guaranteed their training. Additionally, Virginia's economic development approach was considered "departmentalized," with too many entities involved and too many people to contact to get things done (Adams, 2005e). In addition to examining a failure, it is also informative to examine a success.

Economic Development Example: Winning in the Game

In the late 1990s, Canada's Maple Leaf Foods was looking to locate a new 150-worker, \$30 million specialty breads and rolls processing facility as a key component in its strategy for growth in the Eastern United States. The company at first wanted to locate the bakery in New Jersey or Pennsylvania before it appointed the Massachusetts based Dennis Group as site selection consultants. The consultants suggested the firm look further south where electricity, labor, and raw material costs are lower ("Virginia's Cheap," 1997). The Dennis Group used a computer model to analyze these costs, especially raw material and freight costs, along with direct and indirect labor and utility prices, which reduced the choices down to 40 cities. Then they entered into negotiations with the various sites for financial packages to see what communities were willing to bring to the table, and this narrowed the list to about five potential locations.

The site consultants claimed that competition was fierce, and the battle was finally between Greensboro and Roanoke. North Carolina offered a good package, but the Virginia Economic Development Partnership, the City of Roanoke, and the Roanoke Valley Economic Development Partnership worked together to raise the ante, and along with superior distribution networks both to the north and south, won the competition. The roughly \$1.2 million deal was sweetened by tax breaks for locating in an enterprise zone, a \$110,000 Governor's Opportunity Fund grant, and the Virginia Department of Business

Assistance agreed to provide workforce training services. Roanoke won that recruiting battle, but the game was not over once the recruiting competition was finished.

Economic Development Example: The Problem with Tax Incentives

In 1999, Innotech, a division of Johnson & Johnson (J&J), announced plans to locate a new \$125 million-plus spectacle lens production facility in the city of Roanoke. Innotech was started by a local entrepreneur in 1990 and acquired by J&J in 1997. The largest new plant investment in recent Roanoke Valley history was supposed to create up to 600 new jobs and was seen to be an integral part of the optoelectronics cluster. In return for its investment, J&J received almost \$20 million in city and state incentives including \$2 million from the Governor's Opportunity Fund. However, J&J's foray into a new product line proved to be ill-conceived and managed (Adams, 2005c). The plant never hired more than 200 workers and experienced several layoffs. In 2004, J&J announced the sale of the spectacle lens business to competitor Essilor. The buyer said it would shift production from Roanoke to one of its other facilities.

When Essilor signed an agreement to buy its former competitor, state and city officials moved to recover a portion of the incentive money paid to J&J. The Roanoke Industrial Development Authority (IDA) asked for and got a \$1.4 million refund because the Spectacle Lens Group did not hit an employment target of 600 workers within three years. This was a portion of the \$2 million that was originally appropriated to the IDA from the Governor's Opportunity Fund when the agreement was first made. The funds went back to the treasurer of Virginia.

The event also put the high dollars that government pays out to lure private business in the spotlight. As a result in 2005, Roanoke City Council debated the topic and

decided that continued flexibility is essential and agreed that incentives should follow administrative guidelines instead of council-approved policy (Jackson, 2005). These guidelines included: 1) incentives should be paid in incremental installments based on performance instead of upfront lump payments, 2) businesses need to invest at least \$5 million, create at least 100 jobs and pay a median regional worker wage, and 3) the incentives should generate enough tax revenue to pay the grant amount back in three to seven years. Although the guidelines allow economic developers to pursue incentive negotiations on their own, the Council needs to approve specific deals.

Structure Versus Human Agency

The Roanoke region has not had a coherent regional economic development policy so what economic development approaches there are have been shaped by structural forces, happenstance, and public administration discretion. As one Roanoke economic developer stated, “Philosophically, cluster-based economic development sounds really good and it makes some sense and I think in some ways it happens naturally so if you can let the natural economic forces take care of themselves, sometimes that is good, but if you need things to happen you can throw money at it.”

Macroeconomic forces, such as the shift of the automotive industry, have impacted the type of recruitment. Likewise, being dominated by large employers, such as the railroad and rayon industries, has resulted in fluctuations greatly impacting the local economy, but the area has not experienced a “near death” experience that would lead to more unified public action. Thus, structural forces did not result in a manifest vision or strategy.

Table 19. Summary of the Community Power Theories Applied to Roanoke

Roanoke	
<i>Structural Theories</i>	
Market Model	Unitary interest perceived for conservative growth and perceived as rational to compete for mobile investment
Economic Forces	Not faced widespread economic problems, but certain distressed areas led toward recruiting any type of company
Civic Culture	Conservative, parochial culture that trusts government to take care of business
<i>Human Agency</i>	
Regime Theory	Weak or non-existent regimes
Growth Machine	Limited activity due to corporate relocations and apathy
Civic Entrepreneurs	Practically non-existent
Economic Developers	Allowed wide discretion in shaping policy

Market model. The market model does somewhat apply to Roanoke. The approaches identified by the economic developers interviewed do seem to be a rational response to economic imperatives. While individual and group preferences within communities may be diverse and conflicting, the economic developers claim that increasing the tax base is generally a unitary good for the whole community. As one economic developer stated,

The citizens don't care how it's done as long as it does not affect their home and family. They assume that the government is going to do the right thing. Replace businesses that are lost. Replace jobs that are lost, hopefully with good paying jobs. You get a sense that people want us to grow, but not too much. Even the business leaders say they do not want to grow too much, which is what you would think businesses would want to happen. Creates competition for skilled labor

This is supported by a study of the community attitude towards growth and regionalism (Murphy, 2005). Thus, the policy makers perceive a unitary interest for the community to take a conservative approach to economic development.

Economic developers. On the other hand, there does seem to be considerable human agency involved as all the economic developers claimed it was their decision to take this approach. A Roanoke economic developer stated,

I think if they do it (take a cluster-based approach), it is probably because somebody like me who is just pushing it and saying look, we need to be more focused because there are so many opportunities out there and we have limited resources we need to decide what is going to work best here. Then make that decision. It would be the strength of your professional economic developer pushing it forward. Insisting this would be the way to go. Personally, I am not sure if it is right or not. That might sound strange and maybe I have not done enough research on it. The reason I would be reluctant is because I know the political realities and sometimes the natural forces are so overwhelming that you cannot make things happen no matter how badly you want to. No matter how many hours you throw at it. Is that the best use of public sector funds? Versus education, transportation, social services, etc.

Another economic developer added,

In our area, the business sector tends to turn all the economic development over to the government. You go to meetings and they say what is the government going to do? I think the government understands some of it, but there are so many things involved with it and they have to respond to the businesses and the citizens in different ways.

Thus, the professional economic developers have considerable discretion in developing economic development policy.

Regime theory. Reviewing the findings from a regime theory perspective, the economic developers did not allude to any informal, yet relatively stable, group with access to institutional resources, that has a significant impact on local policy and administration. According to regime theory, economic development policy is dependent on institutional arrangements, business interest mediation, and some degree of popular control. The key institutions and actors are involved in an extremely complex web of relationships, but this informal group of influential persons who derive their power from different sources did not seem to be important decision-makers in the policy process in Roanoke. One economic

developer used an amusing analogy to explain why the region lacked regimes that influenced economic development policy:

It's like a businessman told me when I asked him why businesses were not more involved. It's Thanksgiving Day. You had a good dinner. Everything is going fine. You are heading in to watch the football game and the phone rings. Do you pick the phone up? So someone calls you to do something for the community, do you just go ahead and watch the game?

Even the private businesses that directly benefit from economic development activity do not seem to be active players developing economic development policy.

Growth machine. According to Molotch (1976), local economic development is the expression of land-based elite. Such an elite (e.g., bankers, realtors, property developers) is seen to profit through the increasing intensification of land use of the area in which its members hold a common interest. Governmental authority is utilized to assist in achieving this growth at the expense of competing localities. Despite extensive probing in this area, none of the economic developers saw such a group as currently being extensively involved in the process. As one economic developer exclaimed, "Heck, we cannot even get those folks to the table." Another economic developer commented, "They say that they want growth, but they are not willing to put their time, effort, or human resources behind it." The bankers, property developers, real estate lawyers do sit on boards and advisory councils, but the economic developers felt that the elected and public administrators on these bodies were a greater influence.

Civic entrepreneurs. Strong civic leaders shaping economic development policy were not identified in the interviews or in secondary research. Neither business nor elected officials seem to be strong economic development leaders. As one economic developer stated,

I would like to see the elected officials as champions. Their lives are very short. Four years or whatever it may be. My sense is they think that they do not need to understand this as that is what they have professional staff for. Not only the local professional staff, the County, the City, but also the Partnership or even the CVB. We do not have a strong champion like that here. Not like Mayor (Joe) Riley in Charleston (SC) or Mr. (Knox) White down in Greenville, South Carolina. I'm not saying that that is a bad thing because they are elected for a number of reasons. It would be good though if they were paying attention.

The Roanoke region has been having difficulty in bringing together civic leaders to act collaboratively on economic development approaches. Leadership visits to other communities that are thriving suggested to the economic developers that the area has a need for "a strong, bold, charismatic leader, someone willing to go out on a limb and even steamroll some groups" in order to promote a regional cluster-based approach to economic development. The economic development approach appears to be a matter of public administration's discretion, which leads to parochial policy because of their institutional contexts. Business leaders might be in a position to take a supra jurisdictional approach, but as the Center for Regional Economic Competitiveness study (2004) identified, industry leaders feel left out of the regional and city economic and development planning. Thus, despite the high level of economic development activity, the area lacks strong civic entrepreneurs and there is a sense that the existing public and private leaders historically have worked in fragmented ways to achieve what should be common and larger scale goals.

Broad Implications from Roanoke

Facilitating dimensions. Factors that help or hinder taking a cluster-based approach that were consistently identified by the economic developers in all the field studies include performance metrics, institutional arrangements, the state context, elected

officials, and the tax structure. Table 20 summarizes the findings in Roanoke regarding the facilitating dimensions.

Table 20. Summary of Facilitating Dimensions in Roanoke

Dimensions	Insights from Roanoke
Performance Metrics	Use traditional measures of jobs and investment as well as ROI based on machine & tools tax
Institutional Arrangements	Fragmented organizational arrangements that are not conducive to a truly regional cluster-based approach
State Context	State has only recently started using cluster terminology and does not have a specific cluster investment program
Elected Officials	Tend to be parochial, but generally leave economic development to the professionals
Tax Structure	Heavy reliance on the machine & tools tax to determine ROI of public investments often runs counter to cluster development

Common themes. There are trends that run through each of the field studies which have implications for this research. These themes are that the nature of economic development activities is changing, economic developers are becoming more professional, there is a move toward public-private partnerships, or at least a balance of public and private driven policy, and applying evolutionary economics is insightful. Looking back at Roanoke’s history, it is clear that change rather than equilibrium is the long term trend. The insights from Roanoke are summarized in Table 21.

Table 21. Common Economic Development Themes in Roanoke

Themes	Insights from Roanoke
Changes in Economic Development	Examples of Maple Leaf Foods and Reliable Automatic Sprinkler demonstrate important role of site location consultants
Professionalism of Economic Development	Economic developers made use of consultants, made leadership visits, and were active members in professional organizations
Relationship of Public to Private Institutions	Economic development is the purview of the public sector, but with the NewVa Corridor Technology Council, the private sector is starting to get more involved
Evolutionary Economics	Roanoke has an institutional lock-in of how to do

	economic development and a dependence on railroads for over 100 years. Creative destruction of American Viscose allowed small manufacturers to develop
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Concluding Remarks on Roanoke

Roanoke economic developers have extensive discretion with economic development policy because of the lack of active regimes, growth machines, and civic entrepreneurs. The professional economic developers have filled this void. Also, there is a civic culture that trusts professionals in government to take care of the community interest. The economic developers have human agency, but their actions are bounded by institutional factors.

This results in performance metrics, the tax structure, and organizational arrangements being important mitigating factors in Roanoke. The professional economic developers are driven by their performance metrics. If they are evaluated on creating jobs, then that is what they will tend to do by recruiting new firms or expanding existing ones. Small business development, which is labor intensive for the economic developer and might or might not create jobs, will not be a priority. If the metric used for determining return is based on the machine and tools tax, then there is a great incentive to recruit a metal stamping plant over a software design firm even if the stated goal is to create a high-technology cluster. The performance measurement system must be designed to fit the policy.

Without the regimes or civic entrepreneurs to bridge organizations, the economic developers tend to take a sometimes myopic agency perspective. Roanoke has a very fragmented organizational structure for economic development. One organization does marketing. Another organization does workforce development. The localities support

their own businesses. There is not an umbrella economic development organization such as in Lynchburg, Austin, or to a lesser extent, Portland. Greenville/Spartanburg faces a similar fragmentation, but this is mitigated by a regional focused business community. The fragmentation for Roanoke is compounded by the economic region being politically divided between the Roanoke Valley and the New River Valley. Economic developers acting with discretion in a fragmented organizational environment with perverse performance metrics is not conducive to the region taking a truly cluster-based approach.

Part III. Findings and Implications

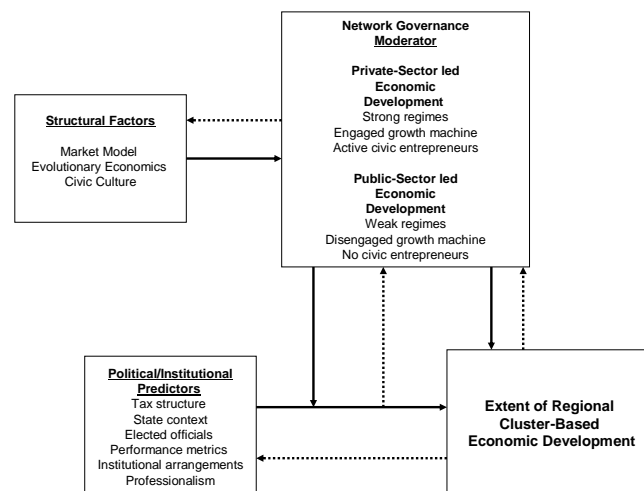
Chapter Nine

Findings from the Field Studies

This chapter will present the findings from the five field studies developed into propositions and a revised conceptual framework based on these propositions. Findings relevant to the conceptual framework, but not found in the community power structure literature will also be introduced. These findings include the important role of professional economic developers in shaping the direction of policy and the introduction of evolutionary, rather than neo-classical, economics as a structural factor influencing regional economic development. After these concepts are introduced, a revised conceptual framework with numbered propositions will be presented.

Notice in Figure 8 that the conceptual framework has changed from the literature-based framework. The structural factors influence the network governance arrangements, which in turn moderate the influence of the political/institutional predictors of the dependent variable. The variation in the extent of cluster-based economic development remains the dependent variable. There is also feedback throughout the system.

Figure 8. Revised Conceptual Framework



The chapter has seven parts. The first part reviews the findings regarding the extent of cluster-based economic development. The second part develops propositions for the political/institutional predictors including performance metrics, institutional arrangements, elected officials, and tax structure. The third section develops propositions for the structural factor variables. The next part presents propositions regarding human agency theories and the network governance variable. The fifth section suggests supplements to the literature including the importance of economic developers and evolutionary economics. Propositions are presented based on these additions to the literature. The sixth part describes the revised conceptual framework based on the propositions. The final section is the concluding remarks.

Extent of Cluster-Based Economic Development

The communities all claim to be taking a cluster-based approach, but it appeared that much of this change was rhetoric. Despite claims to the contrary, the communities do not appear to have completely made the major shift from traditional economic development programs, which focused on individual firm oriented policies, to the recognition that firms and industries are interrelated in both direct and indirect ways. For example, one Roanoke economic developer highlighted this continued focus on atomistic firms by stating, “So number one we are trying to find a company that is in the cluster such as the manufacturing company and then we are trying to find the suppliers to those companies.” Instead of strengthening the business networks and the regional assets, the priority remains industrial recruitment and expansion of individual firms.

The reasons given by the economic developers for taking a cluster-based approach (e.g., smart marketing and higher return on investment) support the assertion

that they have not made the cognitive shift to cluster theory. The economic developers reported to be implementing Porter's (2000) recommended policies. As a reminder, these activities include:

- Making cluster-specific efforts to attract suppliers
- Conducting promotion activities (e.g., trade shows) targeted at a specific industry sector
- Focusing efforts to attract investment around clusters
- Developing advertisements geared to a particular business cluster
- Developing cluster specific workforce training programs
- Establishing local university research efforts in cluster-related technologies
- Creating specialized transportation, communication, and other infrastructure related to a particular cluster
- Supporting cluster-specific information gathering and compilation
- Organizing relevant government activities around clusters (e.g., hire industry specialists related to a cluster)
- Conducting export promotion activities related to specific clusters
- Sponsoring forums or workshops of interest to specific clusters
- Establishing cluster-oriented free trade zones, industrial parks, etc.
- Streamlining regulatory standards for specific clusters

However, the resources devoted toward each particular program were not possible to discern from the interviews and secondary research conducted. Typically, the economic developers reported spending about 3/4 of their resources on existing firms compared to the inverse twenty years ago. One Portland economic developer broke down the economic development efforts as follows,

No more than twenty percent for new firms. Forty to fifty percent for business expansion. Fifteen percent for entrepreneurial and the balance is for business transition. Our technology community has been here 15 to 20 years and a lot of those business models have changed. Look at Epson. In the 1980s there had 1,500 people cranking out printers. When you get to 2000, and you see free printers when you buy a computer, obviously their business model to stay competitive had to migrate to printer production in low cost areas, China and Brazil. That left the facility here and it could have gone away. Through great company management and working with us, they were able to transition to R&D work on ink and delivery systems. While there are only 400 employees, it is way better than having zero. There are a lots of businesses in that same transition. From production, to R&D, or from product to product. We spend a bit of time working on that.

You could argue it is cheaper to keep someone here rather than bring them here.

The emphasis remains on the atomized firm. Overall, it appeared that the economic developers were concentrating their efforts on cluster-specific efforts to attract suppliers and conducting promotion activities targeted at specific industry sectors rather than attempting to develop relationships within the clusters. These are the cluster policies that are the most similar to traditional approaches. Referring back to the conceptual framework from the literature review, despite variation in the independent variables and moderating variables, the dependent variable (cluster-based development policy) did not vary significantly among the five regions studied and a better methodology needs to be developed to operationalize any variation. The variation noted in Table 22 was based on the interviews and secondary research and was not quantified.

Table 22. Summary of Interview Findings on Economic Developers Perspectives on the Implementation of Cluster-Based Economic Development

	Presence and Extent of Cluster-Based Policies	Reasons for Taking a Cluster-Based Approach	Political/Institutional Factors Helping or Hindering Taking a Cluster-Based Approach
			<i>Hindrances</i>
Austin	Yes, the business community has strong interrelations, but attracting and expanding firms with incentives remains a priority	Consultants Common sense ROI	Lack of consensus for industrial growth Business/government tension Loss of civic leaders
			State context
Portland	Yes, but traditional and second wave programs prevail with relatively weak business network development efforts	Consultants Concentrate resources	Institutional structure Utopian culture
			State context
Greenville/ Spartanburg	Yes, the business community is highly networked, but attracting and expanding any firms with incentives remains a	Smart marketing	Elected officials Lack of regionalism Institutional structure
			State context

	priority		
Lynchburg	Yes, but on a regional basis only	Consultants Need to develop assets	Institutional structure No growth machine Civic culture
Roanoke	Yes, but more target marketing across the region	Smart marketing More effective ROI	Diversification concerns Elected officials Tax structure Performance metrics

Political/Institutional Predictors

The factors that the economic developers claimed were helping or hindering their implementation of a cluster-based approach are presented in far right column of Table 22. These are factors that need to be included in the revised framework as variables that influence the variation of economic development policies. The effect of these variables depends on the nature of the network governance structure and this will be discussed later.

Performance measurement. Each region used slightly different metrics to evaluate their economic development programs (see Table 23). The institutional process of data collection and reporting of numeric indicators of economic development activities and results has an influence on the extent of cluster-based economic development. If the economic developers are evaluated on creating any kind of job then they will work to create jobs whether they fit with the cluster or not. If they are not rewarded for creating networks, this important component of cluster-based economic development will not likely be a priority. A poorly designed performance measurement structure can have perverse results. Performance measurement systems need to match the intended policies.

Table 23. Comparisons of Performance Metrics From the Field Studies

Field Study	Outcome Metrics Reported by Economic Developers
Austin	New jobs created in the traded sector as measured by state employment data
Portland	Family wage jobs based on wage rate benefit levels, but efforts underway to adopt Economic Dashboard measures that are aligned with a cluster-based approach
Greenville/Spartanburg	Capital investments and announced jobs in addition to new direct local tax revenues as reported by tax office
Lynchburg	Regional group getting away from outcome measures, but localities measure jobs above a certain pay scale as reported by the labor bureau
Roanoke	Number of jobs that pay above \$29,500 a year and increased revenue from property taxes

Implementing a performance measurement system can be as challenging as conceiving policy. Cluster-based economic development policy is a case in point. The measurement system can drive policy decisions as explained by a Roanoke economic developer,

With Johnson & Johnson, the City of Roanoke put up \$9 million.So we knew that in six years, this entire amount of money would be paid back to the City through real-estate tax, machine and tool, personal property, and utility tax. We knew at the end of six years what our return on investment would be. The City knows that it will be netting \$1.5 million in tax revenue. Pretty good investment and we can scrape up the money. Now with your biotech companies and your IT and software development types. These are the guys that pay the good salaries. We are working with VisionPoint system to redo our website and they are at the research park at (Virginia) Tech. Now starting salary there is \$45 to \$50 per hour for folks coming out of (Virginia) Tech. They have the top graduates from last couple years in computer science. You have folks over at Noyozmes Biological making over \$100k per year. That's the kind of companies in the economy that we want, right? That's what they tell you, but they do not have machine & tool taxes and the real-estate tax is not going to be a lot. There will be some personal property, but it will just be computers. So how do those individual sitting on your city councils and on the boards, put money into the company? Or the state for that matter?

As in this example, the measurement system could dictate the policy choices so the metrics used influence the extent of cluster-based policies implemented.

Performance measurement systems need to be established to encourage economic developers to promote and strengthen clusters. This becomes particularly important as professional economic developers take a greater role. However, for the five case study regions, only Portland, and to a lesser extent Lynchburg, have started to adjust their economic development performance measurement system to match a cluster-based policy. Portland's Economic Dashboard is an example of a measurement system modified for cluster-based economic development. More research is needed on performance metrics for effective cluster-based development implementation. Nevertheless, the following proposition is presented based on the field studies.

***Proposition:** Having a performance measurement system that encourages cluster-based economic development leads toward greater regional cluster-based economic development while using traditional economic development performance metrics lessens the extent of cluster-based economic development.*

Institutional arrangements. Regional institutions need to be established that are conducive to taking a cluster-based approach and that promote innovation. Most of the regional institutional arrangements examined are hindrances rather than facilitators of taking a cluster-based approach (see Table 24). The institutions need to be geographically and functionally aligned to the cluster development efforts. In Greenville/Spartanburg and Roanoke, the geography of the clusters does not match with the jurisdictions of the regional economic development organizations and this creates parochialism. For example, the two growth hubs of Roanoke's mechatronics cluster are in different economic development areas. Functionally, cluster-development requires a holistic approach to economic development so it does not make sense to split up the economic development functions such as marketing and workforce training. Lynchburg is an

example of a community that has brought these functions under an umbrella organization. Regional economic development organizations need to be created that fit with cluster-based development.

Because of the nature of the U.S. market-led economy, this means some kind of balance or partnership of public and private entities for the regional economic development organizations. Due to the importance of context, this will likely mean that each region will have to develop its own optimal organizational structure. For example, Austin and Portland, because of their differing civic cultures, will likely need to settle on different organizational arrangements. The alignment of business values to community values and other cultural factors will need to come into consideration.

Table 24. Regional Economic Development Organizations

Region	Main Non-Profit Regional Economic Development Organization
Austin	Greater Austin Chamber of Commerce
Portland	Portland Regional Partners for Business Portland Business Alliance
Greenville/ Spartanburg	Greenville Area Development Corporation Greater Greenville Chamber of Commerce Spartanburg County Economic Development Corporation Carolina Crescent Coalition Update Alliance
Lynchburg	Virginia's Region 2000 Partnership
Roanoke	Roanoke Valley Economic Development Partnership New River Valley Economic Development Partnership

Clearly, more research needs to be conducted to better understand the distinctive requirements of each region for optimal institutional arrangements for cluster-based economic development. This research can build on the work done on network governance and network effectiveness such as Provan and Milward (1995). Based on this exploratory study, the following proposition is presented regarding the effect of institutional arrangements on cluster-based economic development.

Proposition: *Having effective institutional arrangements leads toward greater cluster-based economic development while fragmented and uncoordinated institutional arrangements lessens the extent of cluster-based economic development.*

State context. The impact of the state context is another factor that influences regional cluster-based economic development and requires further research. Prior research demonstrated that the state context impacts local economic development policy (Reese & Malmer, 1994; Mueller, 1987). However, these studies did not examine cluster-based economic development. In the five field studies conducted for this dissertation, the state context did appear to be a factor, but the relationship of state cluster-based economic development policy and similar local policy was unclear. For example, the economic developers in Greenville/Spartanburg seemed dismissive of South Carolina's state directed cluster-based policy spearheaded by Michael Porter himself, but leveraged the state policy when it suited their needs. In contrast, in Oregon the regional cluster-based policies seem closely related to the state of Oregon's policy. In Virginia and Texas, the state governments are relative latecomers to cluster-based economic development policy. Further research is required to better understand the relationship between state and regional level economic development policy, but based on the field studies, the following proposition can be made.

Proposition: *State cluster-based economic development policies lead to greater regional cluster-based economic development and the lack of state cluster-based economic development policies lessens the extent of regional cluster-based economic development.*

Elected officials. Local elected officials were often perceived as impediments to taking a truly cluster-based approach to economic development. As one Roanoke economic developer noted, "On the political end you are trying to put policy in place that

cannot keep up with the structural forces of the New Economy as a whole. The political forces just do not react that fast.” According to the economic developers, the elected officials who did not understand cluster development often had parochial and short term perspectives on economic development. In order to overcome this hindrance, a better case needs to be made to local elected officials regarding cluster-based economic development versus more traditional approaches.

Local elected officials need to be able to take a regional rather than a local prospective regarding economic development. Because of the importance of local property taxes, local elected officials are highly competitive over securing desirable land development, especially commercial and industrial development with their boundaries. Consequently, it is not surprising that the local fiscal residuum, expenditure benefits in excess of local taxes, was the greatest concern to elected officials. These are the same issues faced by efforts at regionalism in general (Leibovitz, 2003).

Cluster-based economic development can take decades; yet many local elected officials are driven by the election cycles. For example, Dewar (1998) found that “locally elected officials need economic development programs to deliver quick, visible projects in their efforts to solve their districts' economic problems, manage business climate politics, and achieve other aims. Achieving implicit goals means that programs only occasionally undertake activities likely to achieve explicit aims” (p. 68). Local elected officials need to take a long term approach to economic development and educating them on cluster-based economic development is a start to overcoming this hindrance.

Local elected officials were not directly studied as part of this research, but further research on the political/institutional context of cluster-based economic development should explore the issue from their perspective. Nonetheless, the following proposition can be based on the regional field studies.

***Proposition:** Having elected officials with long term/regional perspectives leads to greater cluster-based economic development and having elected officials with short term/parochial perspectives lessens the extent of cluster-based economic development.*

Tax structure. From the case studies, it is apparent that many existing local tax structures are not conducive to cluster-based economic development. The first tax structure issue is in the area of tax based incentives. The second issue regards the assessment of local taxes and what localities tax. Both of these issues affect how return on investment is calculated by localities. Local tax policy needs to be aligned with cluster-based economic development and adjusted for the new knowledge-based economy.

Local tax incentives need to be reevaluated in light of cluster-based economic development, which deemphasizes the business attraction component of economic development. Perhaps we do not need to go as far as one economic developer quipped, “If there was a political free environment you probably would not have any tax incentives at all. Let financial economic forces take their course. Gosh, why do I have a job?” There are a great deal many industrial incentives used by localities, including tax abatements, new investment tax credits, tax credits for job creation, sales tax exemptions, outright grants, loans, loan subsidies, tax increment financing (TIF’s), enterprise zones, Downtown Development Authorities (DDA’s), and many others (Middleton, 2001). All of these fall into the category of economic development incentives; however, their

appropriateness to the objectives of cluster-based development needs to be evaluated.

Bartik (2005) recommends a “bottom-up” reform of incentives that include more information on incentive offers, a budget constraint on the volume of incentives, stronger standards for jobs, and better benefit-cost analyses of incentives. Using this approach in the context of cluster-based approaches should improve tax incentive usage.

With the economy transitioning from capital intensive industries to a knowledge-based economy, the types of local taxes collected, their relative proportions, and the magnitudes of the revenues collected should be reexamined. For example, in Virginia, in addition to real estate and property taxes, the current tax structure within the Commonwealth allows local authorities to tax manufacturers’ assets via a “Machinery & Tools” assessment. An alternate to this tax has been proposed. The Commercial Activities Tax (CAT), which is applied to all commercial transactions, including sales of services, such as personal grooming, consulting, legal, and medical. Currently, the service sector in Virginia, which is more likely involved in transferring wealth than in creating wealth, largely escapes taxation at the transaction level. Thus, how local revenues are generated should be reevaluated in light of the New Economy.

Finally, how return on public economic development investment is measured should be reconsidered. Instead of just measuring direct tax impact, such as the machine and tools tax, other public benefits of promoting growth, in particular high-technology driven growth should be used in the calculations. For example, the indirect taxes derived from the higher paying jobs of a software design firm should be considered compared to a metal stamping plant, which has more taxable capital equipment, but lower paying jobs. The current ROI evaluation would often favor the metal stamping plant over the software

design firm. Measuring non-direct taxes attributable to business relocation or expansion will be more difficult and require the use, as well as the acceptance of econometric modeling.

Taxes and cluster-based economic development is another area that requires further study. Like the optimal institutional structure, the optimal tax structure for cluster growth could be sui generis for each region. An effective tax structure for a semi-conductor manufacturing cluster could be very different from a financial services cluster. Therefore, tax structure is a factor that can help or hinder cluster-based economic development and requires more research. The following proposition regarding the influence of the tax structure on cluster-based economic was derived from the field studies.

***Proposition:** A favorable tax structure (e.g., targeted incentives) leads to greater cluster-based economic development and an unfavorable tax structure (e.g., reliance on the machine & tools tax for the majority of local revenues) lessens the extent of cluster-based economic development.*

Structural Factors and Propositions

The predicted structural factors were present in all of the regions studied, but their influence and characteristics varied (see Table 25). The market model seemed to have a consistent influence leading toward general economic development, but not a cluster-based approach in particular. All the communities stated that they needed to compete for mobile capital and there was no discussion of cooperating instead of competing with other regions. The perceived unitary interest was not as unified as would be assumed under the market model, but there was a generally accepted notion that the rising tide of growth raised all boats. Improvements in the education system and workforce training would address any social equity concerns. Environmental concerns were another issue

that muddled the perception of a unitary interest. For example, in both Austin, and even more starkly in Portland, the economic developers were aware that there were interests opposed to further growth. A unified vision for growth makes it easier for the private sector to take the lead on economic development. Where the market model seemed to err most was in predicting a rational response to the challenge posed by mobile capital. The massive industrial incentives offered by all the communities are a political rather than rational response. Thus, the market model is a useful tool for understanding why local and regional governments feel compelled to implement economic development even if the private sector is not actively involved in these efforts. The market model-based propositions for the revised conceptual framework are:

Proposition: *Mobile capital among political jurisdictions encourages public-sector led economic development.*

Proposition: *Perceived unitary business interest leads toward private-sector led economic development.*

Civic culture provides useful insights into how the institutional arrangements formed while bounding what alternate arrangements are considered. For example, the meritocratic elite-based culture in Austin is conducive to the Chamber of Commerce being the primary economic development organization whereas Portland's culture that values public participation, community, and the environment is less likely to allow a business association to direct public policy. Likewise, the conservative laissez-faire culture in Lynchburg is unlikely to have supported the massive government incentives that Greenville/Spartanburg's corporate paternalistic culture supported. Hence, civic culture influences whether the public or private-sector directs economic development.

The following propositions are presented based on the study of civic culture in the five regions.

Proposition: *A pro-business civic culture leads toward private-sector led economic development.*

Proposition: *A civic culture that looks toward the government to make decisions encourages public-sector led economic development.*

Economic forces were a factor that caused changes in the focus of economic development. Economic crisis often caused changes in leadership and a renewed emphasis on economic development. For example the high-tech bust of the early 21st century led to changes in Portland and Austin. One striking factor after examining the historical evolution of the communities was the passing nature of stability. At the time, tobacco in Lynchburg, lumber in Portland, and textiles in Greenville/Spartanburg all seemed to have reached equilibrium, but this balance was fleeting. The economic forces buffeting the regions were constantly changing the landscape and with globalization, these changes are likely to come more often and be more severe. Economic forces led to change and the propositions derived from these forces will be presented after evolutionary economics is introduced.

Table 25. Summary of the Structural Forces From the Field Studies

	Market Model	Civic Culture	Economic Forces
Austin	Perceived rational need to compete for mobile capital and unitary interest for growth amongst the economic developers, but they are aware that not the whole community is supportive of growth	A meritocratic elite-based culture supportive of state-capitalist technology based development	The high-tech bust led to revised economic development strategy and organizational restructuring including the emergence of public sector economic development organizations
Portland	Unitary interest for planned growth and rational to compete for mobile investment bounded by the values of the civic culture	Dominating civic culture that values public participation, community, and the environment	Economic calamities such as demise of the lumber economy and the high tech bust led to increased economic development efforts and

			reorganizations
Greenville/ Spartanburg	Highly competitive for mobile capital and see a clear unitary interest in promoting growth through industrial recruitment and expansion	Private-sector driven. Corporate paternalism and elite control. Virulently anti-union	Demise of textiles due to foreign competition led to extensive industrial recruitment and expansion
Lynchburg	Unitary interest perceived for conservative growth and perceived as rational to compete for mobile investment	Conservatism and smugness that precludes too much government involvement in the local economy. Evangelical undertones	No “near death” experiences that caused radical changes in policy. Increased competition has caused new policies to be considered
Roanoke	Unitary interest perceived for conservative growth and perceived as rational to compete for mobile investment	Conservative, parochial culture that trusts government to take care of business	Not faced widespread economic problems, but certain distressed areas led toward recruiting any type of company

Network Governance and Human Agency Factors

The actor-centered theories could be identified in all the regions, but they churned over time and this leads toward changes in economic development being public or private-sector driven (see Table 26). The influence of regimes waxed and waned over the decades in each of the communities. The growth machine, particularly in the second tier cities of Roanoke and Lynchburg, are not actively involved as they had been in decades past. Civic entrepreneurs, once the hallmark of economic development in Austin and Greenville/Spartanburg, have all but disappeared and a new generation of leaders has not arisen to take their place. Hence, the relative importance of the various actors varies at particular points in time. The changing importance means that the network governance structure could be private-sector or public-sector dominated depending on how the structural forces influence the mix.

The structural forces influence the relative power of the economic development actors and can cause a change in leadership. An economic crisis, what one economic

developer referred to as a “near death” experience, will motivate civic entrepreneurs to get involved in economic development. The recent high tech crash in Austin is an example of “creative destruction” galvanizing the community and changing the governance structures. These economic shocks can possibly overcome the stabilizing structural factors such as civic culture. For example, if Austin’s semiconductor cluster moves to China, the government might be forced to take over leadership in an attempt to transition the cluster to another form of high technology manufacturing.

However, according to most proponents of the cluster-based approach, economic development should be led by the private sector because a public-led effort is too influenced by political and institutional factors (Rosenfeld, 1997; Porter, 2000). Even though a methodology needs to be developed to effectively measure the extent of cluster-based economic development, it does appear the private-sector led efforts in Austin and Greenville/Spartanburg are more effective at forming the inter-firm relationships that are the hallmark of cluster-based economic development. This leads to the following proposition.

Proposition: *Private-sector led economic development is likely to lead toward greater cluster-based economic development more so than public-sector led economic development*

There appear to be a number of reasons that private-sector led economic development is likely to lead toward greater cluster-based economic development. Porter (2000) wrote.

Active government participation in a privately led effort, rather than an initiative controlled by government, will have a better chance of success. Companies usually can better identify the obstacles and constraints (as well as the opportunities) in their paths than can government. Letting the private sector lead also reduces the initiative’s political content while taking advantage of the private sector’s often superior implementation

ability. Cluster initiatives should be as nonpartisan as possible and should remain independent of any party or administration’s political agenda. Legislators and the executive branch, the opposition parties, and those in power all must be involved. Ideally, the cluster initiative will take place through an entity independent of government. Otherwise, promising efforts might be dropped when a new government takes office (p. 31).

Thus, the factors identified in the regions that helped or hindered taking a cluster-based approach (i.e., elected officials, state policies, performance metrics, taxes, and institutional arrangements) are likely to have greater influence on the extent of cluster-based economic development when the effort is directed by the public-sector. This leads to the following proposition.

Proposition: *Public-sector led economic development is likely to be influenced (positively and negatively) to a greater extent by the facilitating dimensions (political/institutional predictors) than public-sector led economic development.*

Table 26. Summary of the Actor-Centered Forces From the Field Studies

	Regime Theory	Growth Machine	Civic Entrepreneurs	Leadership
Austin	Strong, progressive regimes viewed as one of Austin’s key competitive advantages, but concern that they are disappearing	Active and funds the economic development programs	History of strong civic leaders from the private sector, but the new generation of civic entrepreneurs has not emerged	Private-led
Portland	Described as a growth management regime. The public sector governance networks seem disconnected from business networks	Mild-mannered passive growth machine	Missing the classic civic entrepreneurs from industry who provide collaborative leadership to bridge the business economy and the community, but this role is somewhat filled by local consultants	Public-led
Greenville/Spartanburg	Elite have given way to more of a regime type power structure	Active and engaged in the policy and implementation process	Less dominant than in the past, but key business leaders are active in shaping economic development policy	Private-led
Lynchburg	Weak or non-existent regimes	Limited activity due to corporate relocations and apathy	Currently non-existent	Public-led

Roanoke	Weak or non-existent regimes	Limited activity due to corporate relocations and apathy	Practically non-existent	Public-led
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Supplements to the Literature

Validity of all the theories from the community power structure literature was found in the field studies. The structural factors of the market model, civic culture and economic forces did influence the network governance structures of each region. Likewise, regimes, growth machines, and civic entrepreneurs were part of the network governance structure and their influence played out in different ways. Additionally, the predicted facilitating dimensions were present and their influence seem to vary depending on whether the governance structure was public or private-sector led. However, important factors were identified in the field studies that were not found in the literature.

The important role played by economic developers in shaping policy is not emphasized sufficiently in the community power structure literature. Their role has increased since much of the community power structure literature was written because the economic development game has changed. The process is becoming more professional and superficially rational. Both the businesses and the communities are becoming more analytic. Nevertheless, performance metrics for economic developers are lagging. Businesses, in particular, are becoming less subjective in their relocation or expansion decisions. This increases the role of the professional economic developer in shaping policy. Second, economic development is becoming a profession. It has developed the characteristics of a “community of practice.” This has resulted in more shared knowledge among the economic development community including cluster-based

economic development knowledge. The professional economic developer is an important influence on the extent of cluster policies implemented.

Important Role of Professional Economic Developers

Changing economic development game. The first important reason uncovered for the increased importance of professional economic developers is that the relationship of businesses to government has become more complicated and technical. As one seasoned economic developer lamented, “The great days of going to Ohio and Michigan and stealing companies are gone.” Economic development can no longer be handled by amateurs. Because the economic development professional has become a more critical and consequential factor in a community’s economic development effort, a conceptual framework for the adoption of economic development approaches needs to include a concern for the activities of this professional. This point is echoed by McGuire (2000) and others writing about economic development.

A constant theme in the interviews of economic developers was how the process of business expansion and, in particular, location decisions had changed from a personal subjective decision of top executives to an empirically driven process. For example, as one Portland economic developer described the process,

It used to be the good old boys would get together and have good steaks and drinks. Now it is a very sophisticated process with metrics and spreadsheets. It is hard to transition from sitting in a room with other businesses talking about business and now that being the last thing that happens after the scoring and spreadsheets. Only then, you might have a chance to sit down with a prospect and discuss what it likes. That does not happen in the front end now.

Economic developers believe that the economic development process is becoming more professional and business-like. Organizations dedicated to promoting local, state, and

regional economic growth have grown from no more than 15,000 three decades ago to between 30,000 and 60,000 nationwide, while there are less than 1,500 major expansions or relocations annually (Wagner & Forman, 2000). As the field has become more exacting, comprehensive, and competitive, the need and role for highly trained professional economic developers have expanded.

Impact of the Internet on the game. The Internet has become the single most important development tool. It has ushered in a Website revolution for economic development (Levine, 2002). The Internet helps companies gather information to both eliminate and include areas until they determine final choices. Traditionally, companies would initiate the site location process by contacting a list of potential communities. This was how communities found out they were being considered. Today, companies in many cases will use the Internet heavily in the beginning of the site location process as a source of data to conduct an apples-to-apples comparison of communities. Only near the end of the selection process do the communities get contacted and find that they are on a short, highly competitive list. This means that communities need to maintain a professional and data-rich Website, which requires technical skills. This important domain is the purview of professional economic developers.

Site location consultants. The role of site location consultants has increased dramatically and made the professional economic developers' job more important. The economic development examples of Maple Leaf Foods, Reliable Automatic Sprinkler, and Freescale all demonstrate how site location consultants operate. By some estimates, consultants now handle as much as 60 percent of the relocation business (Khan, 2002). Site location consultants are among the most powerful, yet least regulated, consulting

industries in America (Swope, 2001). They have become indispensable intermediaries between communities seeking investments and companies deciding where to locate new facilities. The problem is that the consultants have persuaded both local economic development officials and corporate executives that the use of subsidies is an inevitable part of the site location process (LeRoy, 2005). This is in part due to their fees being based on how many incentives they can get out of the community. On the other hand, Levine (2002) maintains that building long term relationships with site selection consultants can be a cost-effective marketing tactic for the professional economic developer.

As the gatekeepers to new businesses and jobs, site location consultants have become powerful players in the business of economic development, courted and wooed by economic development officials. The techniques of the usually secretive consultants were openly discussed in an article by Dennis Donovan of the Wadley-Donovan Group, a nationally prominent site location firm. He said a key tactic was to "negotiate incentives for the new project in two or three finalist locations, preferably in different states. Then spend most of the time negotiating in the preferred location. Use offers from the alternate areas for leverage" (Donovan, 1999, p. 1). To handle this kind of aggressive business approach, communities need professional economic developers who are knowledgeable and trustworthy representatives for the community.

Economic development consultants. Going back at least until the 1920s, and consistently over the years, communities have used consultants to help develop their economic development policies. For example, both the Roanoke and Lynchburg chambers of commerce hired the Technical Advisory Corporation of New York in the

1920s to develop economic development strategies. Austin hired the Dallas consulting firm of Koch and Fowler in 1928, and Portland had a series of consultants develop plans. More recently, most every major policy change was publicly based on consultant studies. Market Street Services' *Opportunity Austin* (2003), is just one example. The economic developers interviewed continually referred to various consultants' reports when explaining their policies; however, it is unclear whether these reports led to change itself or merely reinforced predetermined directions. The use of consultants is an indicator of the increasing business-like nature of economic development.

Economic development performance metrics. Even though the process of economic development is becoming more business-like, the performance metrics used by economic developers are not keeping pace. They still tend to rely on the traditional measures of jobs created, capital investment, and local taxes generated, as well as activity measures such as companies contacted and site visits by potential business relocations. The quality of jobs (e.g., salary or wages) created was of particular concern. There was very little usage of econometric models, such as Implan or Loci, as there was a general skepticism regarding multipliers and whether these calculations would be accepted by elected officials. There was some discussion of refining the performance measurement system, such as Portland's Economic Dashboard initiative, but there did not seem to be much enthusiasm from the economic developers interviewed for new performance metrics. However, as economic development becomes more professional-driven, the more important appropriate performance metrics become.

Economic developers as a community of practice. The more competitive and professional environment leads into another reason why the professional economic

developer has become more important. Economic development is an “emerging” profession (Koepke, 1993; Iannone, 1995; Waterhouse, 1997). A profession is an occupation that requires extensive training and the mastery of specialized knowledge, and usually has a professional association, process of certification or licensing, and ethical code (Wansley & Oilschlager, 1995). Since economic development is a fairly new profession, it has yet to develop the type of code that planners and other more established professional associations espouse (Foden & Worrell, 1995). Nevertheless, the field is developing the characteristics of a profession, as well as the characteristics of the more amorphous “community of practice.”

States have their own economic development professional associations and there is an international professional association. By the mid-1920s, a critical mass of industrial development programs across the country led to the establishment of the American Industrial Development Council (AIDC) in 1926. The name was recently changed to the International Economic Development Council (IEDC). A key purpose of this organization has been to raise the profile of the profession. The association offers accreditation for individuals (Certified Economic Developer) and organizations (Accredited Economic Development Organization). The Roanoke Valley Economic Development Partnership was proud to be one of the less than fifty IEDC's Accredited Economic Development Organizations and the only field study organization to achieve such certification. These associations are important venues for inculcating economic developers and are another indicator of the increased professionalism of economic development.

Using academic terms, the economic development professionals have grown into a “community of practice,” which is a knowledge-based structure that supports learning (Wenger et al., 2002). Etienne Wenger, often credited with coining the term, defines it as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al., 2002, p. 4). Likewise, Sawhney and Prandelli (2000) describe a community of practice as “a sustained, cohesive group of people with a common purpose, identity for members, and a common environment using shared knowledge, language, interactions, protocols, beliefs, and other factors not found in job descriptions, project documentation or business processes” (p. 51). Based on the situated learning of apprenticeships, a community of practice involves much more than the technical knowledge or skill associated with undertaking some task (Lave & Wenger, 1991). Members are involved in a set of relationships over time and communities develop around things that matter to people. Communities of practice are everywhere, and their characteristics vary from extremely formal organizations to fluid and informal relationships. Cummings and van Zee (2005) note that networks of learning and communities of practice have become prevalent in international development discourse. Nevertheless, the economic development literature’s perspective of social learning is still based on the concept of a profession.

The implications of the paradigm of communities of practice are that knowledge, such as the cluster-based development approach, is created, shared, and applied across regions. It is socially learned through interactions with other professionals more than through formal education. For example, none of the economic developers interviewed has

an academic degree in economic development. This varied educational background is consistent with Levy's (1990) findings. These network organizations allow popular concepts, like cluster-based approaches to economic development, to become standard parlance. Another example of shared knowledge that passed through the economic development communities of practice network was the public-private organizational form. The following proposition is based on the increasingly important role of the professional economic developer.

***Proposition:** Having professional economic developers leads toward greater cluster-based economic development while having amateur economic developers who are not a member of the "community of practice" lessens the extent of cluster-based economic development.*

Application of Evolutionary Economics

The second supplement to the literature is the application of evolutionary economics. Regional economic development has path-dependency. The outcome of the economic development process depends on its past history, on the entire sequence of decisions made by agents and resulting outcomes, and not just on contemporary conditions. Finally, industries evolve and often die out. Schumpeter (1942) would refer to this industrial transformation as "creative destruction," as the old ways of doing things are endogenously destroyed and replaced by the new. These themes highlight the usefulness of evolutionary economics for a conceptual framework for cluster-based economic development. Evolutionary economic forces impel cluster-based economic development and influence the economic development governance structure.

History matters. The future options for regional economic development are shaped and constrained by past actions. History matters. There was a path dependent quality of growth in each of the regions studied. The outcome was not determined by a

particular condition; rather events were stochastically related. This path dependency implies that the trajectory of specific regions and localities is guided by endogenous factors that influence their evolution over time. The determinants are called conditions of “lock-in” in the evolutionary process of regional clusters (Nelson & Winter, 1982). They can be either negative or positive. A critical policy question is whether the lock-in conditions that influence the evolution of regional clusters can be altered by direct intervention. In the case of Austin, civic entrepreneurs circumvented the anti-industrialization lock-ins, whereas Roanoke’s lock-in conditions appear to be firmly ensconced.

Direct intervention often leads to unforeseen results. Historical accidents or constitutive moments often took decades to come to fruition and never exactly as anticipated. The unpredictability implies a chaos theory-type environment. For example, instead of a technopolis, Austin’s recruiting of MCC and Sematech created cluster dependency on the Silicon Valley. On the other hand, it is too early to say whether Greenville/Spartanburg’s recruitment of BMW will create a sustainable automotive cluster. As Yogi Berra was purported to have said, “The future ain’t what it used to be.” It is difficult, if not impossible, to plan economic development with certainty.

The formation of most clusters occurred over long periods of time, usually many decades, building on some vagrancy of history. Greenville/Spartanburg’s automotive cluster developed from a sequence of events from textiles, to recruiting European investment, to ultimately enticing BMW. Portland’s “Silicon Forest” came about because of a forest service research center and hydroelectric power in the 1930s. Lynchburg’s nascent wireless and nuclear clusters were spawned from serendipitous plant relocations

in the 1950s. However, the role of chance events must be considered in context and “chance alone rarely explains why a cluster takes root or its subsequent growth and development” (Porter, 1998, p.240). A region’s milieu of human agency and structural factors governs the consequences of an historical accident or constitutive moment in an evolutionary manner (Cox, 2001).

The long term nature and unpredictable causality of local economic development makes effective policy difficult to plan. Nonetheless, Kay (2005) finds that despite being theoretically vague and difficult to operationalize empirically, the path dependency concept is useful for public policy. As Cortright (2001) points out, “The path dependent quality of growth means that even in an Internet economy, the opportunities for future growth will depend, in large part, on the current local base of knowledge and expertise, and communities should seek to build this in their strategies” (p. 25). This approach of building on the current local base is at the heart of cluster-based economic development.

Biology rather than physics as a metaphor. Businesses and industries continually change and evolve. Throughout their histories, the regional economies examined did not seem to seek a Newtonian balance of equilibrium. Any stability was short lived. Greenville/Spartanburg’s textile industry rose and fell, as did Portland’s lumber industry, and Lynchburg’s tobacco fortunes. Economic developers cannot afford to become complacent as Austin did in the late 1990s. Schumpeter (1942) famously described the structural dynamic that seeks "new consumers, new goods, the new methods of production or transportation, the new markets, the new forms of industrial organization ... that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. The process of

creative destruction is the essential fact about capitalism" (p. 82). Creative destruction is an incredibly challenging notion to economic developers, but it is the furnace of energy that creates wealth and keeps the community vibrant.

The findings in the field studies imply that instead of neo-classical economics, evolutionary economics, even though it is still an inchoate field of study, is a more useful basis for economic development strategy. Evolutionary economics is modeled on biology rather than physics and stresses complex interdependencies, competition, growth, and resource constraints (Nelson & Winter, 1982; Arthur, 1994). Selection, path-dependency, chance, routines, and increasing returns are key notions. Scholars are beginning to find evolutionary economics a very useful approach for understanding economic development (Boschma & Lambooy, 1999; Lambooy & Boschma, 2000; Cortright, 2001; Nauwelaers, 2001). Using the analogy of biology, rather than physics, and conceiving of regional economies as evolving organisms rather than the outcomes of deterministic laws could lead to more effective economic development policy. Ironically, evolutionary economics rejects the neo-classical notion of rational actors showing profit maximizing behavior, such as selecting optimal site locations, but this quest to possess perfect information on all possible options is what businesses vainly seek from the use of site consultants. Examining a region's historical evolution, rather than a snapshot of current events, puts the biological metaphor in better focus.

The exogenous shocks and pressures, as well as the endogenous factors of evolutionary economic are likely to become even more important as capital becomes more mobile with globalization. Based on the application of evolutionary economics as a structural force, the following propositions are presented.

***Proposition:** Because of institutional lock-in/path dependency, if a region historically had private-sector driven economic development, it will tend to maintain private-sector driven economic development and if a region historically has public-sector driven economic development, the region will tend to stay public-sector driven.*

***Proposition:** Recent economic distress caused by creative destruction will lead to a change from public-sector driven economic to private-sector driven economic development*

Revision of the Conceptual Framework

The revised conceptual framework is primarily based on variance theory, but despite Mohr's (1982) warning against mixing variance and process theory, the revised conceptual framework does include an aspect of process theory by the inclusion of evolutionary economics. The revised conceptual framework is an outcome-driven explanation of the input factors (i.e., structural versus human agency) that explains variation in the extent of cluster-based economic development. While some of these casual forces operate continuously, others (e.g., creative destruction) influence the sequence of events only at particular points in time and therefore tells a story about how cluster-based economic development changes. Nevertheless, the revised framework has a clear variance-theory outlook.

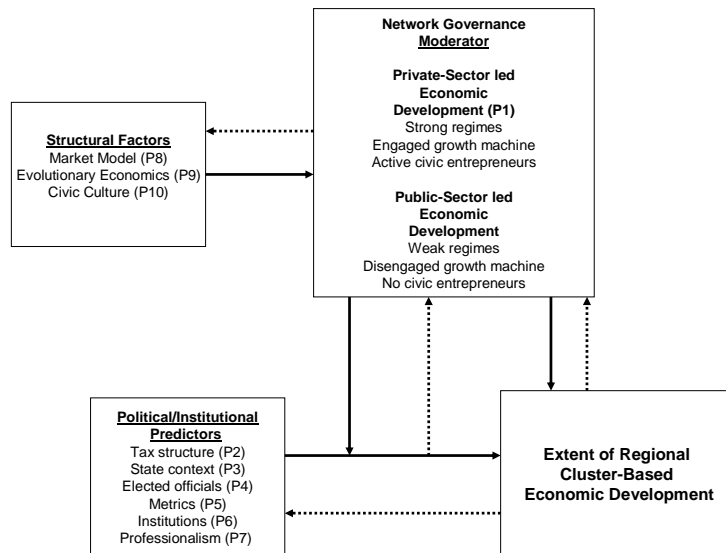
The dependent variable is the extent that a region adopts a cluster-based economic development approach. The limitations faced in operationalizing this variable in this exploratory study and recommendations on how to operationalize cluster-based economic development are discussed in more detail in methodology discussion of Chapter Three. The network governance moderator variable (public versus private-led economic development) directly affects the extent of cluster-based economic development. The more private-sector led the economic development; the more likely the region is to

implement cluster-based approaches. Additionally, the political/institutional predictor variables (e.g., tax structure) affect the extent of cluster-based economic development directly, and the private/public-led economic development strengthens or weakens this effect. There are also reciprocal causal flows as represented by the dotted arrows. For example, cluster development policies are about getting regional firms to work together and this inherently will precipitate greater private sector involvement in economic development. This will create feedback throughout the framework.

The network governance moderator variable is a continuum from completely private-sector driven to completely public-sector driven and the point on the continuum is affected by the structural factors variables. None of the communities studied were completely public or private-sector driven, but Austin and Greenville/Spartanburg were more private-sector driven. Portland, Roanoke, and Lynchburg had less private sector leadership and more public-sector direction. This variable is operationalized by identifying regimes, growth machines, and civic entrepreneurs, which are the vehicles by which the private sector leads economic development efforts. The nature of the governance structure has important implications for the role of public administration that will be discussed in the next chapter.

Propositions underlying the revised conceptual framework. The propositions used to develop this framework each need to be further studied and tested (see Figure 9). Each of these propositions addresses complex social phenomena so are not easily testable. Based on this exploratory study they are not yet testable hypotheses as the propositions still require further research to be directly testable hypotheses. Thus, they are referred to as propositions rather than hypotheses.

Figure 9. Revised Conceptual Framework With Propositions



Network Governance Moderator Proposition

Proposition 1: *Private-sector led economic development is likely to lead toward greater cluster-based economic development more so than public-sector led economic development*

Political/Institutional Predictors of the Extent of Cluster-Based Economic Development Propositions

Proposition 2: *A favorable tax structure (e.g., targeted incentives) leads to greater cluster-based economic development and an unfavorable tax structure (e.g., reliance on the machine & tools tax for the majority of local revenues) lessens the extent of cluster-based economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.*

Proposition 3: *State cluster-based economic development policies lead to greater regional cluster-based economic development and the lack of state cluster-based economic development policies lessens the extent of regional cluster-based economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.*

Proposition 4: *Having elected officials with long term/regional perspectives leads to greater cluster-based economic development and having elected officials with short term/parochial perspectives lessens the extent of cluster-based*

economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.

Proposition 5: *Having a **performance measurement** system that encourages cluster-based economic development leads toward greater regional greater cluster-based economic development while using traditional economic development performance metrics lessens the extent of cluster-based economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.*

Proposition 6: *Having effective **institutional arrangements** leads toward greater cluster-based economic development while fragmented and uncoordinated institutional arrangements lessens the extent of cluster-based economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.*

Proposition 7: *Having **professional** economic developers leads toward greater cluster-based economic development while having amateur economic developers who are not a member of the “community of practice” lessens the extent of cluster-based economic development; however, the effect of this variable is less for private-sector led economic development than public-sector led economic development.*

Structural Factors Propositions

Market Model

Proposition 8a: *Mobile capital among political jurisdictions encourages public-sector led economic development.*

Proposition 8b: *Perceived unitary business interest leads toward private-sector led economic development.*

Evolutionary Economics

Proposition 9a: *Because of institutional lock-in/path dependency, if a region historically had private-sector driven economic development, it will tend to maintain private-sector driven economic development and if a region historically has public-sector driven economic development, the region will tend to stay public-sector driven.*

Proposition 9b: *Recent economic distress caused by creative destruction will lead to a change from public-sector driven economic to private-sector driven economic development*

Civic Culture

Proposition 10a: A pro-business civic culture leads toward private-sector led economic development

Proposition 10b: A civic culture that looks toward the government to make decisions leads toward public-sector led economic development

Concluding Remarks on the Findings

The findings from the exploratory study suggest a different conceptual framework than the literature. There are a number of possible reasons for the difference. First, most of the prior applications of the community power structure theories to economic development were conducted in the late 1980s and early 1990s. Economic development has changed since then. The growth of the knowledge economy and globalization has “flattened” and changed the world’s markets since the earlier studies (Friedman, 2005). Further, economic developers have become more important. Finally, the prior studies were mostly examining economic development in general rather than a specific type of economic development such as cluster-based approach. Thus, it is not surprising the conceptual framework would change once applied in the field.

Additional research is required on several aspects of the conceptual framework and further empirical testing of the framework is necessary. Nevertheless, the findings and the framework do have important implications for public administration that will be discussed in the next chapter.

Chapter Ten

Implications

Introduction to Chapter

This chapter is divided into the following sections: a review and summary of the research questions; a discussion of the challenges of further empirically testing the conceptual framework developed in this exploratory study; a sampling of questions that practitioners should answer in order to understand the political/institutional context of their region; a bifurcation of network governance arrangements to help public administrators understand their role in different institutional settings; a discussion of the implications of the findings regarding performance measurement and institutional arrangements; a table summarizing recommendations for future research; a summary section; and a postscript. This is the concluding chapter and it brings the research to a close.

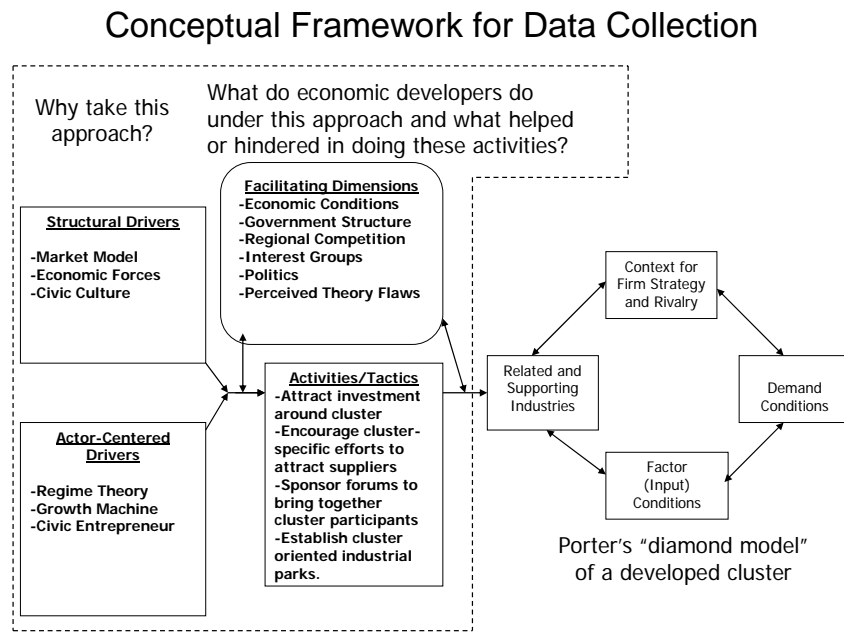
Review and Summary of Research Questions

1. What conceptual framework of the relationship between economic and political factors in cluster-based economic development policy is revealed in the literature?

Figure 10 shows the conceptual framework that is revealed in the literature. The left has the dominant theories from the community power structure literature that are used to explain economic development and the right of the framework is Porter's recommendations on cluster-based economic development represented by his "diamond" model. The control or dummy variables from Appendix A are the facilitating dimension variables. Wolman and Spitzley's (1996) literature review of the politics of local economic development shows that most social scientists studying the question of what

impelled the adoption of economic development policies used statistical methods. What ties most of these studies together is the similar type of data used to measure these variables i.e., survey responses of government officials are used to measure policy (dependent variable) and census data or some other government source is used to provide the community characteristics that make up the independent or explanatory variables. The limitations of the standard approach were discussed in Chapter Three. This prevalent use of statistical methods led to the assumption that the conceptual framework could be developed into a model-like framework for mathematical testing. However, the findings from the field studies highlighted the difficulty of using a statistical approach.

Figure 10. Conceptual Framework Revealed From Literature



2. What relationships among the roles of government, political forces, and economic forces in cluster-based economic development can be understood from contrasting field studies?

The contrasting field studies highlight that each region has a political/institutional context shaped over time by structural and human agency factors. The relationship of the

roles of government, politics, and economic forces varied in the regions studied, but some common patterns emerged. There are often great similarities between communities, particularly when they are in the same state context. Lynchburg and Roanoke are examples. But even these neighboring communities differ because of historical quirks of fate that caused different industries to arise. On the other hand, for locations where the industries are similar, such as Portland and Austin, there are great differences in economic development because of civic culture and other factors. However, all the theories explored did provide useful insights in the field study locations. They also provided insights into trends impacting economic development in general, such as increased professionalism and the developing community of practice among the economic development community. Thus, it should be concluded that the relationship among the roles of government, political forces, and economic forces has important implications for the adoption of regional cluster-based economic development.

a) In these cases, what do economic developers identify as helping or hindering them from taking a cluster-based economic development approach?

The economic developers identified a number of factors that encouraged taking a cluster-based approach. One of the major factors supporting communities taking a cluster-based approach is consultants. In every community consultants played a major role in putting cluster-based economic development on the agenda. Consultants supported the human agency efforts of economic developers and civic entrepreneurs. The use of consultants is an indicator of increasing professionalism in economic development.

State directed cluster-based initiatives also helped regions adopt their own cluster-based policies. Oregon, Texas, South Carolina, and to a lesser extent Virginia all had statewide cluster-based policies that helped fuel regional efforts. The final factor that

could abet taking a cluster-base approach was professional economic developer discretion. The discretion could support or hinder depending on the institutional arrangements and performance metrics. For example, discretion in Lynchburg has been conducive to cluster-development and hamstrings this approach in Roanoke.

A number of factors could obstruct cluster-based economic development and they were discussed in detail in Chapter Nine. These factors included; performance metrics for cluster development, effectiveness of institutional governance structures in clusters, elected officials' perceptions of clusters, and the impact of various tax structures in a cluster-based economic development context. These factors are included as political/institutional predictors in the framework.

b) What do economic developers see as the drivers of the adoption or lack of adoption of different cluster-based economic development strategies in these cases?

Most economic developers conceive of cluster-based economic development as being a common sense and effective means of achieving their economic development objectives. It often took probing questions, to get to the structural or human agency factors impelling this approach. As the practitioners become more professionalized and exposed to the intuitive ideas of industrial agglomeration and externalities through their community of practice, the cluster concept and terminology have become more ingrained in their thinking. This helps translate clusters into policies, particularly if contributory community power structures are in place.

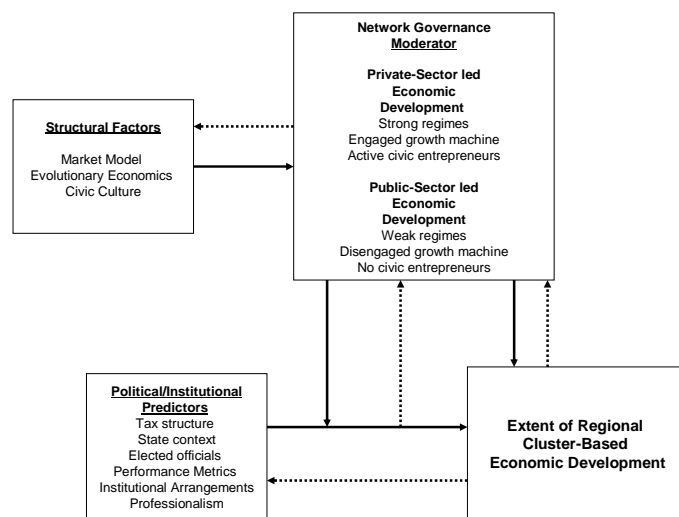
The relative mix of community power structures vary from community to community. All the structural and human agency factors are present in each community, but their influence varies depending on the context and time period observed. The dominant competing theories including economic forces, the market model, civic culture,

regime theory, growth machine theory, and civic entrepreneurs are all driving the communities to take a cluster-based approach to economic development. Their level of influence varies by the milieu in which they are acting. Thus, cluster-based economic development is both structural and human agency driven.

3. What conceptual framework for the political/institutional context of cluster-based economic development can be developed?

Based on the examination of five case study regions, below is the proposed conceptual framework of the political/institutional context (see Figure 11). The workings of the framework are explained in greater detail in Chapter Nine. This framework still needs to be better operationalized in order to be further empirically tested. Additionally, further research is required on the linkages between many of the factors. Nevertheless, it does help identify the advantageous political/institutional characteristics of a region for taking a cluster-based approach. It will allow researchers to begin asking the right questions regarding the governance structures needed for cluster-based economic development.

Figure 11. Revised Conceptual Framework



Further Empirical Testing of the Framework

After conducting the research and analyzing the findings, the conceptual framework changed from a model-like framework to a conceptual framework that can be used to generate the questions used for analysis. With more research, the propositions can be developed into testable hypotheses that could possibly allow statistical testing. There are several reasons that more research than this exploratory study is needed. First, the factors are difficult to effectively define and quantify. They tend to be rather fuzzy concepts that lose their value when turned into numbers. More primary data will need to be collected. Surveys are possible, but extensive interviews will likely be necessary. Additionally, there is still academic debate on many of the issues such as the definition of a cluster. These issues should be addressed before the variables can be quantified.

Statistically testing the model will be challenging. Some of the factors, e.g., civic culture, are extremely difficult to quantify. Empirical testing will require building on the work of researchers such as Reese and Rosenfeld (2001). Besides the challenge of quantifying the drivers (independent variables) and the facilitating dimensions (controlling variables), there is the challenge of defining cluster-based economic development. Despite the case studies being selected as most different, all the regions claimed to be taking a cluster-based approach. All claimed to be doing the cluster-based activities identified by Porter (2004), such as, attracting investment around clusters, encouraging cluster specific efforts to attract suppliers, sponsoring forums to bring cluster participants together, establishing cluster-oriented industrial parks, and developing cluster specific workforce training programs. It could be difficult to find a region that is not at least trying to take a cluster-based approach. Further, academic research, as discussed in

Chapter Three, will be needed to reliably identify and develop gradation scales for cluster-based economic development before the framework can be statistically tested. Despite these issues, the results of this exploratory study provide useful insights for public administration.

Implications for Public Administration

As it is, the conceptual framework leads to a series of questions that can be used to allow researchers to understand a community's political/institutional context. Once the region is better understood from this perspective and specific cluster analysis is conducted, then more effective policy for achieving societal economic development objectives can be crafted. Listed under the elements of the conceptual framework, examples of the questions that need to be answered in order to understand a region's political/institutional context for cluster-based economic development include:

Structural Drivers

The community as a rational economic actor

1. What communities and clusters are considered competitors?
 - a. What cluster-based activities are these communities adopting?
 - b. What is the community's competitive advantage?
 - c. Is there a means for the communities to cooperate rather than compete?
2. Is there a unitary interest of community and who defines this unitary interest?
 - a. If so, what is the unitary economic development interest?
 - b. How is consensus reached on the unitary interest?
 - c. Are the targeted clusters a match for the unitary interest?
3. What is a "rational" approach to achieving the public interest?

Evolutionary Economics as a driver of economic development policy

1. What is the historical trajectory of the region and the clusters in the region?
2. What past events are likely to trigger constitutive moments?
3. How is "creative destruction" likely to impact the region? (For example, what would Greenville/Spartanburg and Roanoke do if their vaunted automobile cluster radically changed due to rising gasoline prices?)

4. From the perspective of evolutionary economics, institutions play specific roles in the functioning of an economy so the institutional arrangements of the regions need to be understood; not just the statutory organizational structure, but how the organizations operate.
5. What kinds of positive and negative lock-ins are there in the region?

Civic Culture

1. What is the community's vision and goals?
2. How are decisions made?
3. How entrepreneurial or reactive is the approach to economic development?

Actor Centered Drivers

Regime Theory

1. Who comprises any informal, yet relatively stable, groups, which have a significant impact on local policy and administration?
 - a. How do these groups operate and make their decisions?
 - b. What are their perspectives on cluster-based economic development?

Growth Machine

1. What individuals and institutions directly benefit from economic development activities?
 - a. What are their perspectives on cluster-based economic development?

Civic Entrepreneurs

1. Who are the leaders of the community?
 - a. What are their perspectives on cluster-based economic development?

Professional Economic Developers

1. What are their perspectives on cluster-based economic development?
2. Do they have the training and resources that they need to implement policy?
3. How do they utilize consultants?

This inquiry into the community power structure will supplement methods, such as Mayer's (2005b), for analyzing a specific industry cluster. Some of the questions mentioned above are already included in her methodology. For example, she recommends asking about pivotal events in the region's cluster development history. The

objective of supplementing the specific cluster analysis with an understanding of the political/institutional context is to support the design of more effective public policy. An understanding of regional economic development governance is an important addition to cluster analysis. This exploratory study is an effort to enhance existing cluster-based development research.

Once the findings from the questions above are analyzed, a determination can be made about the nature of the network governance structure. Based on where the region finds itself on the private/public-led economic development continuum, public administration should adjust its role (see Table 27). Common wisdom is that clusters should be private-sector driven. For example, Rosenfeld (1997) wrote, “Only the members of a cluster can make it function as a system, and only the members can identify their most pressing needs. Regions that let the companies take charge of their efforts have the most to show for their investments” (p. 21). This implies that economic development should not be public-sector driven.

However, as demonstrated in the field studies of Roanoke and Lynchburg, the private sector in the form of strong civic entrepreneurs and regimes are not always present so it is up to economic developers to take a leadership role. Likewise, Portland’s civic culture is not conducive to private sector leadership of economic development. Thus, there are regions that will need to have public-sector driven cluster-based economic development. The emphasis of public administration will need to be different depending on the network governance leadership.

Table 27 Network Governance Leadership and Implications for Public Administration

	Network Governance: Public-Sector Driven Cluster Development	Network Governance: Private-Sector Driven Cluster Development
Examples	Roanoke Lynchburg Portland	Austin Greenville/Spartanburg
Actor-centered arena Variables	Weak or non-engaged civic entrepreneurs, regimes, and growth machine with economic developers in the lead	Strong civic entrepreneurs and regimes along with an active growth machine
Structural Variables	Influences the network governance structure and can shift locus of control from public to private and energize actors, but also constrains actors	
Market model	Constant influence to compete for mobile capital and assume a unitary interest of community	
Civic culture	Community values bounds alternatives (e.g., distrust of business in Portland and laissez-faire attitudes in Roanoke)	
Evolutionary economic	Path-dependency and lock-ins limits options while creative destruction can motivate private sector to become engaged	
Political/Institutional Predictor Variables: <ul style="list-style-type: none"> ▪ Tax structure ▪ State context ▪ Institutional structure ▪ Elected officials ▪ Performance metrics ▪ Professionalism 	Important	Less important
Implications for public administration	<ul style="list-style-type: none"> ▪ Need to adjust the political/institutional variables for effective cluster-based policy ▪ Need to increase involvement of the private sector 	<ul style="list-style-type: none"> ▪ Promoting social equity becomes essential

In regions with public-sector driven cluster development, the emphasis of the economic developers will be somewhat different than in those regions with an active private sector leadership. In those regions with public sector leadership, the economic

developers will need to engage business more to take a leadership role. They will need to create an environment conducive for business to become engaged. Additionally, they will need to carefully evaluate the political/institutional variables (e.g., tax structure and performance metrics) to ensure that they contribute to a cluster-based approach rather than a traditional approach to economic development. The economic developers will need to be pushing the region towards being more private-sector driven. This push could be aided (e.g., a creative destruction shock) or hindered (e.g., institutional lock-in) by structural forces.

Once a region becomes private-sector driven, the economic developers will need to support the private sector leadership, but will also need to be vigilant that social equity is being protected. For example, knowledge-based clusters often do not employ many low skilled or uneducated workers so the public administrators need to make sure the less advantaged also benefit from the development of knowledge clusters. This will probably mean more than just education. The barriers to education will also need to be addressed. The economic developers will also need to make sure that the networks are open and transparent to everyone. The economic developers will need to become the conscience for the cluster.

The political/institutional variables influence the extent of cluster-based economic development for both public and private-led economic development, but these variables have a greater influence on a public-sector led network governance structure. These predictors, in particular performance metrics and institutional arrangements, have important implications for public administration that will be discussed further.

Measurement of Economic Development Programs. For traditional and second wave economic development, the government has a direct role, which theoretically allows a clear “input-process-output-outcome” continuum. The outcome measures of job creation/retention and tax revenue growth should be the result of companies relocating, buying equipment, or increasing sales. Theoretically, the companies decided to move, buy, or expand due to government action. This is a clear series of expected events. Table 28 provides examples of indicators of expected events in the traditional economic development process.

Table 28. Traditional Performance Indicators (Source Hatry, 1990)

Number of assisted firms that visited the jurisdiction to assess it as a possible location for a facility
Number of responses to advertising or direct mail solicitations
Number of jobs projected by assisted businesses at the time of the announcement of their decision to locate in the jurisdiction
Number and percentage of assisted firms that subsequently located in the jurisdiction
Number of actual jobs added by assisted locating firms 12 months/24 months after their initial contact with the program
Dollars of capital investment made by assisted firms 12 months after the announcement of their location decision
Number and percentage of assisted firms that located in the jurisdiction and that felt the assistance contributed to their location decision
Number and percentage of clients that (a) decided to start a business; (b) made a significant change in the nature of their business or markets; (c) solved an operational problem; or (d) improved regular business operations or methods; <i>and</i> , if any of these occurred, also reported that the business assistance program office's help contributed at least somewhat to the outcome
Number and percentage of clients that (a) actually started a business; (b) expanded current operations; (c) increased sales; or (d) increased the number of employees; <i>and</i> , if any of these occurred, also reported that the business assistance program contributed at least somewhat to the outcomes
Number of additional jobs, as reported by clients <i>and</i> for which clients reported that the business assistance program contributed at least somewhat to the outcome--or the number of additional jobs indicated by state unemployment insurance data

Attributing causality, however, complicates measuring these outcomes.

Performance outcomes need to be significantly caused by or result from implementation

of economic development programs. Since it is not conceivable that all jobs created or additional sales in a region are the result of economic development programs, measuring total increased employment or business tax revenue is not an acceptable measure without some qualification. These increases could be the result of outside factors or the efforts of other agencies. For instance, the school system could be providing a better education or the nation's economy could be booming. Thus, causality complicates performance measures for traditional or second wave economic development; nevertheless, there is a clear expected sequence of events.

The new role for government under the cluster-based development rubric, as a pusher/challenger, catalyzer/coordinator, or nurturer/promoter of industry, muddles the sequential process and creates causality issues. In addition to working through a network rather than directly with companies, economic developers are being asked to lay the groundwork and trust the private sector to achieve societal goals. This creates two levels of long-term outcomes. At one level, the government wants innovative and competitive industries with increased productivity, which hopefully will create the desired societal outcome. The second level of long term outcomes (e.g., increased quality of life, fully employed workforce, social justice, etc.) is outside of the direct influence of government, which makes it harder to impose accountability.

Some argue that innovative, competitive, and productive industries will not necessarily lead to societal objectives (America, 1995; Blakely, 1995; Henry 1995). This could potentially lead to greater inequality, negative externalities, and lower quality of life for the uncompetitive. For example, in a reply to Porter's call to use his model in the inner cities, Henry (1995) writes, "development involves considerably more than

provision of a hospitable environment for private profit-seeking enterprises. This approach per se will simply add to the sum of human misery...development requires a broad, innovative and refreshing approach in which the socioeconomic well-being of the residentary is paramount” (p. 153). With the government taking an indirect role, society will need to rely on the benevolence of the market to achieve societal objectives.

Another issue with the performance measurement of cluster-based economic development is quantification and what to measure. Rosenfeld (2002) recommends measuring the following outcomes:

- Number of business or trade associations
- Number of initiatives adopted and implemented by associations
- Amount of resources shared by members of association
- Frequency of contractual and non-contractual networks
- Surveyed estimate of trust of the networks

However, these measures are intermediate outcomes at best and do not directly address the desired condition. For example, does an increase in number of business or trade associations directly cause innovative and competitive industries and increased productivity? Clearly, a new set of measures will need to be adopted for economic developers if the cluster-based approach is to be faithfully implemented. An example of new metrics is Portland’s Economic Dashboard measures. Performance measures have important implications for public administrators because they directly impact their efforts and deserve greater attention in the cluster-based economic development literature.

Public-private partnerships. Another political/institutional variable with important implications for public administration is the institutional arrangements of regional economic development. In all the regions studied, the institutional arrangements were in transition as the network governance configurations were influenced by changing

structural forces. These forces were culminating in public-private partnerships, but the balance and organizational features of these partnerships have not been settled.

Public-private partnerships was the buzzword of the 1990s when it came to economic and community development efforts (Premus & Blair, 1991; Woodward, 1994; Larkin, 1994; Kolzow, 1994). Development partnerships are an “alliance formed by local governments, often with the help of private sector firms and nonprofit organizations, that has a mission of enhancing the economy of a multi-jurisdictional area” (Olberding, 2002, p. 253). In the 1960s and 1970s, public-private partnerships emerged at the city level and initially focused on central city development. By the 1980s, development was taking place within an entrepreneurial culture of deal making between the private and public sectors, so public-private partnerships were a logical step. Publicly-funded organizations were thought to operate like bureaucracies, which were more concerned with due process and procedures, than being results-oriented and efficient in the use of resources. Nevertheless, the public sector was needed as a catalyst in the negotiations between a potential investor and the representatives of the various government departments and elected officials. Further, it was felt that “privatizing” government economic development might emulate business salaries and attract a class of CEO types that could build relationships with their fellow site-selecting tycoons (Levine, 2002). This reasoning, occurring in a context of changing global economic patterns, government funding and changing economic structures, led to a call for the restructuring of economic development organizations (Weaver & Dennert, 1987). The result was a flurry of quasi-governmental, non-profit economic development organizations being created.

A study by Olberding (2002) found that the number of regional partnerships for economic development increased fourfold from the 1970s to the 1990s because the idea that certain social goals can be achieved best through private-sector activity supported in some way by government has become the central structural feature of economic development policy. “The union of government and business in common effort, called a partnership in the economic development domain, is said to unite the greater vision, expertise, and management skills of the private sector with the risk-bearing capacity and resources of the public sector” (Eisinger, 1988, p. 22). However, who funds economic development and who decides policies is still a matter of contention.

All the communities studied had some form of non-profit organization and every community was still striving to achieve the proper public/private balance of power (see Table 22). Only Austin relies exclusively on private sector finances for economic development marketing, but inducements still come from public funds and a publicly funded university is a partner. In lieu of a formal partnership, local governments in the Austin area are building their own economic development organizations. In the other cases, partnerships between governments and businesses were justified on the grounds that private investment is essential to the economic health of the community, but without public inducements it will not take place to a sufficient extent. Perhaps more importantly, private industry was not seen as having the same goals as the community at large. Thus, there has been a general institutional isomorphism of economic development organizations into non-profit public-private partnerships.

The challenge each of the public-private arrangements faces is who should provide the bulk of the funding and who has the power. The matter of public versus

private sector driven economic development policy is still in question. O’Looney (1992) found that newly instituted economic development partnerships often go through a honeymoon phase and a success (or failure) phase. During the honeymoon phase, characterized by a high degree of flexibility, the early signs of tension between flexibility and accountability are likely to be ignored. Eventually, tensions arise over who has control. This seems to be the case in the regions studied. The elected officials want to control economic development policy. This is epitomized by the 2001 coup in Greenville and the establishment of the government funded Greenville Area Development Corporation. Meanwhile, the private sector has either realized that its return on investment is not sufficient and/or that it can free ride, so private sector contributions are diminishing. For example, Virginia’s Region 2000 Partnership in Lynchburg and the Roanoke Valley Economic Development Partnership are both receiving less private financial support. Each community studied is struggling in its own way with finding a balance between public and private sector driven economic development policy. Until each region finds its sui generis balance that aligns with the regions structural context, effective cluster-based economic development policy will be challenging.

These institutions will need to be able to operate in a supra political jurisdictional manner, finding ways to share the costs and benefits of economic development. This issue is exemplified by Virginia’s independent city system and the problems identified by economic developers in Lynchburg and Roanoke. As long as tax abatements are integral components of economic development, and without regional taxes, sharing the costs and benefits of economic development will be difficult. Detailed studies suggest that direct local spending on economic development is far exceeded by local tax incentives to

promote economic development, and a 1999–2000 ICMA survey indicated that 74 percent of local governments offered infrastructure improvements as an incentive, whereas only 36 percent offered workforce training support (Bartik, 2003). This means that most economic development costs are borne locally, but cluster-based economic development is a regional policy. Institutional arrangements need to be established that share the costs and benefits over the entire region. In the meantime, these institutions will need to concentrate on activities with costs and benefits that can be shared regionally, such as establishing networks, and workforce training. Fortunately, these latter activities are at the heart of cluster-based economic development.

The economic developers interviewed consistently recommended a single regional economic development agency that was truly a 50/50 public private partnership. The funding should come from the localities and from business associations based on a formula that considers benefits and ability to pay. It does not necessarily have to have a headquarters building, but there does need to be staff devoted to the agency. Power needs to be shared between public administrators and civic entrepreneurs from the business sector. Accountability to elected officials will be through the public administrators. The agency needs to have representation and be involved in all facets of economic development, not just marketing. Relocation and expansion activities need have equal priority with workforce development, small business assistance, and the other activities under the broad rubric of economic development. Promoting and developing networks will need to be an essential function. The new institutional arrangements in Lynchburg are an example of a step in the direction of this regional cluster development organization. The organization will need to be based on the requirements of cluster-based

development. Therefore, this exploratory study has several implications for public administration as it becomes involved with network governance and cluster-based economic development.

Future Research

In many ways this study raised more questions than it answered and has set the stage for a lifetime of academic research. Table 29 presents the most pressing research questions raised by this study.

Table 29. Summary of Future Research

Issue	Research Questions
Further Empirical Testing of the Conceptual Framework	Do the findings hold up with more extensive research? -Develop the propositions into testable hypotheses -Greater sample size, interview more than just economic developers, and more varied selection of regions, including regions outside of the United States context
Performance Metrics	Do performance metrics based on cluster-based economic theory lead to more effective policy implementation?
Institutional Arrangements	What economic development organizational arrangements have the greatest network effectiveness?
State Context	What is the relationship between state and regional level cluster-based economic development policy?
Tax Structure	Does adjusting the regional tax structure lead to more effective cluster-based economic development?
Elected Officials	Do elected officials who understand cluster-based economic development have less parochial and longer term perspectives on economic development?

Implications Summary

In conclusion, the revised conceptual framework requires further empirical testing and additional research conducted in the areas of performance measurement, institutional structure, state context, elected officials, and tax structure. However, the framework should be a useful start for those who want to better understand the important

political/institutional contexts upon which cluster-based economic development strategies need to be built.

The implications for public administration from this research are that it plays an important role in cluster-based economic development that is often overlooked. Public administration is the glue that holds the network governance structure together, but in certain cases may need to fill a leadership vacuum. Depending on whether public administration is leading or supporting will affect what role it needs to play and what considerations need to be paramount. The typology developed from this research should help public administration clarify its role.

The findings also should be taken as a caveat to communities that view cluster-based economic development as a standard formula that can be applied effectively in all contexts. Porter's model by itself is not a panacea. This is a naive perspective that ignores political and economic realities and the complexities faced by public administrators implementing policy. One size does not fit all. History, politics, institutions, and the social context matter for cluster-based economic development.

Postscript

Going back to the metaphor of Captain Kirk and the Tholian web that started off this story, this dissertation was not meant to be about “high” public administration theory and network governance, but it could be the basis for research in that area. For example, echoing Eikenberry (2006), what should be public administration’s role in promoting social equity in economic development network governance? I did consistently ask the economic developers if they felt part of their job was promoting social equity. It was a difficult question for most. The common reply was that with improved education and a rising economy everyone would be helped. However, with cluster-based economic development, which is often geared toward the high-technology sectors, the problems of social equity are exacerbated. The economic developers generally claimed to serve as advocates for business interests in the bureaucracy. If that is the case, who is going to speak up for the underrepresented? These are difficult questions to answer, and it seems in order to avoid having the values of public administration being crushed in the Tholian web of cluster-based economic development, we as public administrators, like Spock and McCoy, need to work together combining logic (business) with humanity (politics).

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Appendix A
Summary of Statistical Studies

Statistical Studies Exploring Development Policy Change

Author	Findings	Level of Analysis	Methodology/ Analysis Technique	Dependent Variables	Independent Variables	Control/Dummy Variables
Feiock and Clingermayer (1986)	Selection of policy depends in part upon the presence or absence of political institutions affecting representation and executive power	City	Mail survey and simple cross tabular analyses using Chi square measure of association	Business assistance, grants, tax abatements, and advertising	Partisanship of elections, city manager, executive veto, and ward system	Population size, personal income, and fiscal stress
Rubin and Rubin (1987)	It is the symbolic value of the actions based on economic and fiscal distress rather than their concrete consequences that motivate activity.	City	Bivariate relationships with Kendall's tau-B as a measure of association	Frequency of cash subsidies, revenue bonds, subsidized water rates, and infrastructure.	Measures of citizen's needs, urban capacity, fiscal need, and process of growth	Pass-through measures of federal financial support
Grady (1987)	The diffusion or "arms race" hypothesis accounts for state policy choices	State	A series of rank order correlations (Kendall's tau b) within regions over time	Incentives from <i>Industrial Development</i>	Foster's regional classification of the American states	
Mueller (1987)	State characteristics are significant for local government programs	State	Multiple regression analysis	State programs assisting distressed local communities	State characteristics (i.e., innovation, inter-party competition, legislative professionalism, centralization, tax rates, and tax collections)	
Bowman (1988)	The competition ethos is pervasive with cities establishing aggressive programs to compete with larger jurisdictions	City	Survey and cross-tabulation	Economic classification	Competitive groupings	
Ambrosius (1989)	Policies are adopted as result of the strength of	State	Multiple regression and examination of the	Programs categorized as distributive,	Occupational interest strength (i.e., lawyers,	Tax capacity, tax effort, party

	interests within the states which combine to advocate such measures		adjusted regression coefficients	upwardly redistributive, or downwardly distributive	unions, business establishments, bankers)	competition, urbanization, and industrialization
Gray and Lowery (1990)	Industrial policies represent a meso-corporatist form of development	State	OLS Regression Analysis	The index of Direct Financial Incentives (DFI), and the Industrial policy activism (IPA) index.	Registered business interest groups and proportion of business lobbyists	Economic conditions and state capacity
Sharp (1991)	The linkage between economic distress and policy adoption is strongest when officials are less insulated from the public	City	Survey with measure of association calculated through bivariate relationships with Kendall's tau-B	Financial inducements (e.g., loans, tax abatements, etc) and development strategies (e.g., promotional activities)	Economic distress (i.e., fiscal stress, unemployment) and accessibility (i.e., citizen participation, locus of decision-making)	Institutional context
Sharp and Elkins (1991)	Citizen involvement has implications for economic development policy choices	City	Survey with measure of association calculated thru bivariate relationships with Kendall's tau-B	Economic development activities (visible tax costs, minimizing apparent tax costs, and maximizing apparent benefits)	Property tax stress (tax per capita, tax dependence)	Citizen involvement in economic development decision making
Hanson (1991)	Different political subcultures imply different strategies, but economics might erode cultural values	State	Kmenta's procedure and generalized least squares using SHAZAM	Economic development strategies aimed at operating returns, operating subsidies, capital subsidies, and capital returns	Elzar's classification of state political subculture	
Green and Fleischmann (1991)	Regional competition is strongly associated with the number of development programs	City	Survey and regression analysis	Index of development programs	Nine socioeconomic variables and a measure of regional competition	Form of government and locus of economic development control
Boeckelman (1991)	Political culture is an important factor	State	Simple regression analysis	Economic development strategies (business incentives and citizen oriented policies)	Elzar's classification of state political subculture	Urbanization, industrialization, economic condition, party competition, and public opinion
Clarke and Gaile (1992)	Policy changes are a response to changing	City	Field visits and mail survey			

	resources					
Feiock and Cable (1992)	Institutions directly affect policy selection	City	OLS regression of national survey results	Number of incentives and strategies	Participation, locus of policymaking, and government structure	Fiscal stress and unemployment
Fleischmann, Green Et al (1992)	Policy making is a joint product of structural constraint and complex political factors	City	OLS regression of an ICMA survey	Count of economic development programs	Sixteen variables representing structural or actor-centered theory	Metropolitan status, leading organization, and presence of a formal plan
Berman and Martin (1992)	Innovativeness is a direct determinant of economic development policies	State	Pooled regression analysis	Corporate for Enterprise Development Index of approaches to economic development	Walker's index of state innovation	Environmental (industrialization, urbanization, education) and political (legislative professionalism, union strength, level of voting)
Donovan (1993)	High levels of community controversy are associated with lower levels of policy adoption	City	OLS regression of survey of economic development officials in California	Number of economic development programs	Index of controversy regarding economic development	City growth rate, age, land use, home ownership, decision locus, interest groups
Reese and Malmer (1994)	State enabling legislation has an impact on local policies	City	Cross-tabulation with t score measure of association	Eisinger's categorization of policies as demand or supply-side activity	State level enabling legislation for financial incentives	
Eisinger (1995)	Policy change is occurring primarily because of a change in strategic calculations by state-elected officials	State	NASDA survey of state development agencies			
Goetz (1994)	Political actors and local political conditions are important in explaining policy choices	City	Survey and multiple regression analysis	Progressive economic development policies	Fiscal conditions, economic conditions, indicators of need, political mobilization, bureaucratic experience, and political culture	
Boeckelman (1997)	Policies change due to issue redefinition using	State	Issue definition model as per Baumgartner and	Classification of news articles on tax	Industrial tax exemptions	

	rhetoric and symbols		Jones	incentives according to tone and subject of article		
Bradshaw and Blakey (1999)	Recognition of global economic competition forces changes	State	Case studies and survey of leading states with high-technology sectors			
Clingermayer and Feiock (2001)	Institutions matter in selection of policy choices	City	Nationwide survey and logistic regression	Tax abatements, development bonds, advertising, grants, and business assistance	Need (per capita income, bond rating, and population), activity of coalitions, and governmental structure	
Saiz (2001)	Strategy choices are largely a function of interjurisdictional competition	State	Pooled regression analysis	Locational or entrepreneurial categorization of programs	Mean strategy for bordering states, state index of fiscal comfort (fiscal capacity divided by fiscal need), state ideology	Per capita income, manufacturing employment change, change in federal revenue to state, and unemployment rate
Reese and Rosenfeld (2001)	Environmental and regime factors only partially explain policy. Need to include civic culture	City	Survey with regression analysis and case studies	Economic development policies (loans, zoning, demand-side policies, incentives, and Type II policies)	Residential need (average income, poverty rates, and unemployment) and governmental structure	

Appendix B
Interview Questionnaire and List of Confidential Interviews

Open Ended Interview Questions

1. Do you feel that XXXX is using a cluster-based economic development strategy (governance activities meant to develop and strengthen geographically proximate groups of interconnected companies and associated institutions in a particular field, including product producers, service providers, suppliers, universities, and trade associations) rather than a traditional approach?
2. Why do you believe communities generally adopt a cluster-based approach to economic development?
3. What individuals and groups are involved in the development of economic development policy?
4. Has the “growth machine” (that is the bankers, lawyers, real-estate developers that directly benefit from economic development) been influential?
5. Are there political/economic/institutional issues that help or hinder taking a cluster based approach?
6. How do the institutional arrangements in XXX impact various economic development players?
7. Do you think economic development should be funded by the private or public sector?
8. How does "social equity" impact XXX economic development approach?
9. What are your economic development performance metrics and how do they affect the economic development approach?
10. How does the industrial recruitment process work? Could you give an example?
11. Are there some particular concepts or "theories" from the economic development literature that seem to best explain economic development?

Confidential Interviews			
Name	Title	Organization	Data Collection
Aric Bapp	Director	New River Valley Economic Development Partnership	July 22, 2004
Philip Sparks	Director	Roanoke Economic Development Partnership	August 29, 2004
Elizabeth Neu	Economic Development Director	City of Roanoke	August 29, 2004
Carl Snodgrass	Economic Development Director	Wise County	September 16, 2004
Charlotte Mullins	Economic Development Director	Dickenson County	September 8, 2004
Jill Loop	Economic Development Director	Roanoke County	December 17, 2004
Wayne Strickland	Director	5 th Region Planning District Commission	December 17, 2004
Andrew Warren	Planner	City of Roanoke	December 17, 2004
Jason Ford	Director of Economic Development	Greater Austin Chamber of Commerce	May 4, 2005
Dr. Alex Cavalli	Executive Director	IC2 Institute of the University of Texas at Austin	May 12, 2005
Dr. Eliza Evans	Program Manager for Research	IC2 Institute of the University of Texas at Austin	May 12, 2005
Carolyn M. Stark	President and CEO	Austin Technology Council	May 12, 2005
Mark Ellison	Director	Texas Workforce Commission	May 12, 2005
Jubal Smith	Director Economic Development	City of Austin	May 13, 2005
Susan Davenport	Director of Existing Business	Greater Austin Chamber of Commerce	May 13, 2005
Dr. Ethan Seltzer	Director and Professor	Portland State University	June 15, 2005
Duke Shepard	Economic Development and Business Policy Manager	Portland Business Alliance	June 16, 2005
Elissa Gertler	Economic Development Manager	Portland Development Commission	June 16, 2005
Larry Pederson	Director of Economic Development	City of Hillsboro	June 17, 2005

Janet Young	Economic Development Manager	City of Beaverton	June 17, 2005
Doug Rux	Community Development Director	City of Tualatin	June 17, 2005
Jerry Howard	President/CEO	Greenville Area Development Corporation	June 23, 2005
Nancy Whitworth	Economic Development Director	City of Greenville	June 23, 2005
R. Carter Smith	Chief Executive Officer	Spartanburg County Economic Development Corporation	June 23, 2005
Lee Cobb	Director	Region 2000 Partnership	July 7, 2005
Dr. Roger Beeker	Existing Business Director	Region 2000 Partnership	July 7, 2005
Mike Davidson	Economic Development Director	Amherst County	July 7, 2005
Rick Moorefield	Economic Development Director	Chester County	July 15, 2005
Mike Eades	Economic Development Director	Florence County	July 21, 2005

Appendix C

Detailed Early Histories of the Field Study Communities

Early History of Austin until the 1940s

Founded on a vision to be more than a political center. Originally called Waterloo, the small village on a gentle bend on the Colorado River, changed its name to Austin in 1839 as it heatedly competed with several other cities to be the capital of the new Republic of Texas. It took two statewide elections, after Texas was annexed by the United States in 1845, to keep Austin the capital city. However, the commissioners who selected the site for Austin envisioned not just a political city, but rather an entrepôt for the rich fertile lands and the four cardinal directions trade routes that converged there (Humphrey, 1997). Regardless of these early aspirations to be a center of business, it would take over one hundred years for Austin to become more than a governmental center.

Surviving the in-state competition, Austin grew from 856 citizens in the 1840s to 3,494 in 1860 with much of this growth the result of slave labor. Austin escaped the ravages of the Civil War and at the end of the conflict Union troops occupied the city for five years. The influence of federal money and freed slaves (by 1870 three out of five Austinites were blacks) kept the city prosperous during the reconstruction period (Humphrey, 1997). This would not be the last time that the federal government would come to the aid of Austin.

Elusive early attempts at industrialization. An uneven period of growth began with the arrival of the railroad in 1871 and the founding of the University of Texas (UT) in 1881. The Austin Board of Trade (Chamber of Commerce) was established in 1877

and was initially concerned with Austin's poor infrastructure. In order to have stable growth and keep pace with the other booming cities of Texas, in the late 1880s, Mayor A.P. Woolridge launched a campaign to make Austin a manufacturing center. Austin developed promotional pamphlets entitled *Austin, Texas, The Future Great Manufacturing Center of the South* and built a dam to provide waterpower for manufacturing. Despite these efforts, Austin remained primarily a place for education and politics, rather than industry. This was epitomized by the Austin Board of Trade's major industrial claim going into the 20th century of having the largest chili canning plant west of the Mississippi.

Industrialization continued to elude Austin and the economy remained sluggish in the early 20th century. As the Chamber noted, Austin's sluggish economy was the result of "poorly paved streets, lack of sufficient pure water, inadequate sewage disposal, poor health conditions, and not enough hotel rooms" (Blount et al., 2004). One solution was to reform the traditional board of aldermen structure of government in favor of the commission form of government in 1909. This was further reformed to the council-manager structure after a messy 1924 referendum led by the Chamber. Another reform effort was the hiring of Dallas consulting firm Koch and Fowler in 1928 to prepare a 20-year plan, the first since 1839. As for economic development, the plan proposed that Austin remain a residential community and not emphasize industrial development. The Chamber of Commerce and its secretary, Walter E. Long pursued and defended Austin's no-industry growth plan (Bridges, 1997). Clearly, many Austinites were content to remain a placid non-industrial community into the 1950s.

Early History of Portland Until the 1940s

A distinct culture founded in scenic beauty. As the Pacific Northwest opened up in the early 1840s, Portland's strategic location practically at the mouth of the vast Columbia River basin where two great rivers converge at the head of the verdant Willamette Valley became evident to the region's traders. Awed by the beautiful surroundings, merchants envisioned a great commercial future for the majestic mountain-ringed, timber-rich land. Abbot (2001) argues that this powerful sense of place, shaped by the area's scenic beauty, nurtured a distinctive civic culture that supports progress, but closely monitors its effects on the environment and community culture.

In 1843, Asa Lovejoy, a Massachusetts-born lawyer, and Maine-born Francis Pettygrove established a settlement halfway between Oregon City and Fort Vancouver. Supposedly, Pettygrove won a coin toss and the trading post was named after Portland, Maine rather than Boston. They cleared the dense fir stands and laid out a town for development. This began a period of entrepreneurship. Often backed by financing from New England or San Francisco, adventurous Easterners took advantage of Portland's location to make, and sometimes lose, trading fortunes. Until the 1860s, Portland was a small entrepreneurial agricultural marketing and shipping center.

In its early years, Portland existed in the shadow of Oregon City, the territorial capital 12 miles upstream on the falls of the Willamette. However, Portland was located at the river's head of navigation, giving it a key advantage over its older peer. It also triumphed over early rivals like Milwaukie and Sellwood. By 1851, Portland was incorporated and had approximately 800 inhabitants, a steam sawmill, a hotel, and a newspaper. In 1870, the Portland Chamber of Commerce was founded. The population

would grow to over 17,000 by 1880. Testament to Portland’s environmental ethic was already evident with the planting in 1852 of a twenty-five-block boulevard, now known as the South Park Blocks, with trees and grass (Seltzer, 1995).

The rise of the business elite, boosterism, and planning. Local industrial growth was uneven until the 1880s. Excluding some brief activity in iron and paper manufacturing, woolen manufacturing was the predominant regional industry (MacColl, 1988). Industry, such as sawmills, was hampered by the high transportation costs of the Oregon Steam Navigation monopoly, however, the arrival of the railroad in 1883 allowed industry, in particular lumber, to grow. Wheat, livestock, and other agricultural products also began to flow out of the fertile valley and enrich Portland. In 1885 alone, twelve major businesses were incorporated including the Oregon Artificial Stone Co., the Oregon Pottery Company, and the Oregon Paving & Contracting Company. By 1900, Portland had a population of more than 90,000. See Table 26 to see how dramatic this population increase was compared to the other cities studied.

Table 30 Field Study Cities’ Populations 1870-1900 (Source: Andriot, 1983)

Year	Austin	Portland	Greenville/ Spartanburg	Lynchburg	Roanoke
1870	4,428	8,293	3,837	6,852	634
1880	11,013	17,577	9,413	15,959	669
1890	14,575	46,385	14,151	19,709	16,159
1900	22,258	90,426	23,255	18,891	21,495

The business elite equated growth with progress, but were afraid that growth might erode their social influence and physical control over the city. Urban planning offered these business elite a key method for imposing order upon the city, while also permitting the city to expand (Blackford, 1984). Organized efforts to improve Portland began with the formation of the Committee of One Hundred, which was established in

1906 by the Portland Board of Trade. Large contributions to fund the planning came from Portland's major lumber, manufacturing, real estate, and banking companies. The main aim of the organized beautification efforts was to advertise Portland's economic potential and compete against the rival cities of San Francisco and Seattle.

The epitome of this promotion was the 1905 Lewis and Clark Centennial and American Pacific Exposition and Oriental Fair, which put Portland on the economic development map. Large expositions were the fad of boosterism. Philadelphia (1876), Chicago (1893), Nashville (1897), Omaha (1898), Buffalo (1901), St. Louis (1904), Norfolk (1907), Seattle (1909), San Francisco (1915), and San Diego (1915) held similar promotional extravaganzas (Abbot, 1983). Portland's corporate establishment's goal was to promote Portland as the commercial hub of the Pacific Northwest.

The fair offered attendees a slice of the world including entertainment, enlightenment, novel inventions, and unique experiences. It showcased the natural resource bounty of the region and offered Portland up as the gateway to commercial opportunities in and with Asia. Over 2,500,000 visitors attended the exposition including 135,000 from east of the Mississippi (MacColl, 1976). The exposition was followed in 1907 by another promotional event, the Portland Rose Festival, which gave Portland its nickname, the Rose City. Thus, at the start of the twentieth century Portland was a true player in the economic development game.

Between 1843 and 1913, Portland's entrepreneurs became mercantile-capitalist leaders who exhibited stability and continuity in their control of economic development. The merchants and shippers' prosperity was helped by gold rushes, federal spending on Indian wars, and sustained agricultural production. A regime of "first families" developed

and became a benevolent plutocracy that maintained close ties to their New England roots. The early emergence of a class-conscious stratum of society produced anti-egalitarian forces and “reflected a variation of the old American tradition of community development, with imitation, not innovation, as the key principle” (Merriam, 1976, p. 52). It would not be until the Progressive Era that the grip of the high-society elite would loosen on economic development.

The rise of the radical middle class. Nevertheless, by 1913, the political power of Portland had changed. The city had grown larger, economically diverse, and socially more heterogeneous, which limited the pioneer merchants and their families from the control that they held in the early years (MacColl, 1988). The elite reluctantly accepted a limited role for government in promoting certain political, economic, and social reforms. This was exemplified by their losing fight against the establishment of the commission form of local government in 1913, after winning the battle against a progressive city manager form of government the year before (Abbot, 1983). Under Portland’s commission charter, the mayor and each of the four independently elected city commissioners manage separate sets of city departments. Members of the City Council retain legislative, administrative, and quasi-judicial powers (when handling land-use and other appeals). The matter of the commission form of government has come before the voters seven times since 1913 and is the last remaining commission form of government among large cities in the United States.

An important characteristic of Portland that aided the demise of the total control of the business elite, as compared to other cities at the turn of the last century, was the prevalence of small businesses. Johnston (2003) examined the structure of manufacturing

in pre-Depression era Portland and found the city a virtual “small property holder’s paradise” with thousands of small commerce and manufacturing concerns. One out of fourteen members of the industrial workforce owned and operated their own firm. This distinct vibrant small-scale manufacturing community formed divisions with the city’s corporate-identified local bourgeoisie and wrested some of the power from the benevolent plutocracy. Boosters pointed proudly to Portland’s high level of home ownership as an indicator of social stability (Abbott, 1983). During the Progressive Era, this radical middle class would take over urban planning to serve the public interest (e.g., maintaining quality and property values of neighborhoods) rather than as an elite means of social control. This public interest-driven urban planning would flourish in the distinctive environmental culture, but would also at times conflict with traditional economic development approaches.

Military shipbuilding brings the seeds of industrialization. Into the early twentieth century, Portland continued to be primarily a regional agricultural marketing and shipping center with most manufacturing geared toward local development and construction. The First World War would temporarily change that situation and lay the groundwork for future industrial development. The Pacific Northwest steel and wood shipbuilding boomed during World War I, employing more than 50,000 people. Companies like Northwest Steel Company, a subsidiary of Joseph R. Bowles’ Northwest Construction Company, switched from making steel bridges and became one of the country’s largest and most productive shipyards. Interestingly, the greedy Bowles, who lacked social responsibility, was convicted of bribing government ship construction inspectors (MacColl, 1976). Albina Engine and Machine Works was another Portland

shipbuilder which started operations during this time and continued until the 1980s. When the war ended in 1918, the Portland shipbuilding industry suffered an immediate decline. By the 1920s, Portland counted fewer than 3,000 shipyard workers and agriculture resumed its primary place in the economy (Abbott, 1983). However, the seeds of industrial development were planted.

Portland's strong competitive showing in the 1920s and 1930s was tied to continued growth in the farming hinterland in Oregon and southern Idaho (Abbott, 1992). It is illustrative that the Birdseye Organization went to Hillsboro in 1929 to begin the first commercial freezing of fruits and vegetables. In the 1920s, Portland became the largest lumber manufacturing city in the world, as well as the leading lumber exporting port ("Portland Climbs," 1924). In 1924 alone, three large lumber mills were opened in the Portland area including Long Bell Lumber Company, which was the largest lumbering concern in the nation. The mill built its own city, Longview, to house its 6,000 workers. Portland's economy was becoming intertwined with lumber's fortunes.

However, with Portland's economy tied to lumber, the city experienced greater, and longer, economic doldrums when the Depression hit than most other cities (Mullins, 1991). Lumber supplied directly and indirectly 45% of the payroll dollars in Portland, so when 5,000 mill workers went on strike in 1937, the National Labor Relations Board was brought in to restore the peace ("Portland Moves," 1937). Also, the city leaders wanted to avoid the violence of the waterfront dock strikes of 1934 (Buchanan, 1975). The Great Depression caused many lumber firms to merge or seek outside investors, but the industry survived. It also was an omen of how dependent the city was on the lumber industry.

Attempts to diversify from a lumber economy. The area made several attempts to diversify from its dependence on the lumber industry including seeking to develop the woolen manufacturing industry, furniture, and the flax industry. Based on the plentiful supply of raw material and waterpower, local boosters in the early 1900s concluded that Portland would “become the center of the greatest woolen manufacturing district in the United States, and that it may attain this position within fifteen years” (“Textile Manufacture,” 1909). It would take more than fifteen years, but by the early 1950s Oregon had become a top 10 producing center of woolen sportswear including Pendleton Wool Mills, Jantzen Inc., and White Stag Manufacturing Company (Hoyt, 1949). Established in 1938 as a hat distributorship in Portland, Columbia Sportswear Company now has annual sales of over \$1 billion. Homegrown Nike has become the largest sports apparel company in the world and the German company, Adidas, was attracted to the area because of the specialized apparel labor (Mayer & Provo, 2004). More recently, British owned Dr. Martens, maker of counter culture apparel, selected Portland for its North American corporate offices and distribution center. On the other hand, White Stag was bought by Wal-Mart and Jantzen by VF Corporation of North Carolina. Nevertheless, the sports apparel cluster still employs more than 10,000 workers and contributes upward of \$1 billion a year to the regional economy, but gets little attention from economic developers compared to the sexier high technology clusters (Herzog, 2003).

Other attempts at diversification from lumber were not so successful. Another textile-related attempt was the Oregon Development League’s long initiative to grow, ret, and manufacture flax into linen (“Williamette Valley,” 1916). Furniture was another target diversification industry as the Portland Chamber of Commerce sent a delegation in

1913 to High Point, North Carolina and New York to try to attract furniture manufacturing branch plants to Portland (“Northwest Wants,” 1913). Based on the existing abattoir industry, efforts to launch a horse meat cannery industry for the European market using bands of wild ponies proved unsuccessful (“Horse Meat,” 1900). Despite some successes, the area remained dependent on lumber until the harnessing of the area’s rivers for hydroelectric power in the late 1930s.

Notwithstanding the conservative nature of the industry, the area’s wood industry was innovative in developing new techniques to make a tree go further. Innovations in plywood, laminate, and composite wood products helped keep the industry strong until the 1970s. The Portland Manufacturing Company produced the first commercial plywood in the US and pioneered the use of plywood in automobiles (MacColl, 1979). In 1955, Oregon had produced enough plywood to cover the state of Rhode Island and demand was expected to double by 1975 (“Oregon Now,” 1955). Companies like the Prefabricated Engineering Company of Portland developed prefabricated housing to meet the post World War II housing boom (Davies, 1947). From the 1920s, the lumber manufacturing industry continued to innovate, but gradually moved south to be closer to sources of supply. Nevertheless, the wood industry still remained important to Portland fifty years later.

Early History of Greenville/Spartanburg until the 1940s

From its inception Greenville/Spartanburg had to struggle to survive. The upcountry Piedmont area of South Carolina was a contested area in its early years and remains a dissimilar region from the rest of the state. The bloody struggles were first between the settlers and Native Americans and then among the settlers themselves. After

defeat of the Cherokee in 1761, land which now includes Greenville/Spartanburg was ceded to the English. During the Revolutionary War, the area experienced a bloody civil war between Tories and patriots. With the end of the Revolution, veterans of the war claimed the land of their former Loyalist neighbors. By the end of the 18th century, Greenville and Spartanburg were established as courthouse towns. As roads reached the area, the Piedmont even became known as a health resort for low country people escaping malaria and humidity of the coastal regions. However, the South Carolina backcountry remains distinct from the more gentrified coastal area.

Soon small scale manufacturing and in particular textiles were attracted to the area by the abundant waterpower. Manufacturing was conducted by individuals rather than corporations. This small scale manufacturing included iron works, foundries, and firearms manufacturing. By the late 1850s, Greenville had the south's largest carriage and wagon plant, employing about 80 workers (Lander, 1954). However, it was the manufacture of textiles that laid the foundations for the post-Civil War industrial revolution in the upcountry as other industries petered out. Although the geography invited factory development, the low country South Carolina state legislature offered little support for industrial projects and indeed often worked against such developments in the antebellum era (Eelman, 2004).

Despite the success of some manufacturing enterprises, there remained a general attitude in the state that industry was a danger to South Carolina's way of life. The prevailing Jeffersonian ideology identified independent agrarian farmers as the only truly free citizens in a democracy, and industrialization was equated with dependence, corruption, and social decay (McCoy, 1996). It was not deemed proper for a white man

to be tied to a machine, and blacks were needed for plantations. Powerful political leaders, such as John C. Calhoun, warned against the dangers of industrialization while low country slave plantations dominated political power in the state and blocked industrialization. Eventually, the political realignments caused by the Civil War would allow the town-based elites to wrest power from the rural elites (Eelman, 2004).

The development of a textile cluster and corporate paternalism. The textile industry in the Piedmont was initially established by northern immigrants, but by the Civil War, most of the mills were locally owned (Mitchell, 1921). Following the War of 1812, a group of Rhode Islanders, facing depression of the New England textile industry because of competition from more efficient English mills, set up four textile operations in Spartanburg (Huff, 1995). Within 30 years, five mills in Spartanburg County employed 114 people (Teter, 2002). Like New England manufacturers, the northerners established the mills in rural areas where they could take advantage of waterpower, and where some provided tiny villages, which included housing, stores, hotels, churches, and schools for workers. This was the beginning of a culture of corporate paternalism.

New England still dominated U.S. textile production. Only a few South Carolina mills employed more than a few dozen operatives to spin yarn and weave cloth. Most of this production was coarse cotton yarn and linen warp destined primarily for local household looms. A few bales of local cotton might wind up in local mills instead of Lowell, and a few poor white families found mostly seasonal work, but the presence of small-scale mills and their tiny villages did nothing to threaten the overwhelming agrarian cast of life in antebellum Piedmont (Waldrep, 2000). The area was not yet a maker.

Starting a tradition of local industrial boosterism, a North Carolina real estate speculator, Vardry McBee, set up a mill in Greenville in 1815. Sensing an opportunity, the so-called father of Greenville bought most of what is now the downtown area and then sold it in a controlled manner for profit and development. McBee also started a brick factory, stone-quarrying and opened a general store. He was instrumental in securing the area's first railroad in 1853 by raising funds in New England and moving Furman University to Greenville in 1851. Furman was followed by the Greenville Female College in 1855 and the Southern Baptist Theological Seminary in 1859. By the 1850s, Greenville and Spartanburg had become established towns and the area was growing slowly and steadily. Greenville/Spartanburg began emerging as a bustling commercial hub surrounded by scattered mill villages and small farms only marginally dependent on slave labor compared to the huge plantations in South Carolina's low country.

Although the Civil War brought hardship and privatization to many upcountry residents, the area's manufacturers experienced a wartime boom as a result of demands for uniforms, weaponry, and ammunition. During the Civil War, refugees came to the area, but Greenville/Spartanburg was not in the path of Sherman's march through Georgia and South Carolina, and it escaped the war relatively unharmed. Interestingly, Greenville was solidly Unionist until the outbreak of the Civil War, when the Reverend James Clement Furman, president of Furman University and a virulent Secessionist, persuaded many residents to change their minds (Huff, 1986). Besides shattering the old commercial system of the South, the war helped diversify and tune the manufacturing abilities of Greenville/Spartanburg.

Reconstruction and industrialization. The Reconstruction period brought the area new challenges and a change in social and economic prosperity. The new political environment freed the town-based entrepreneurs from many of the antebellum era obstacles to their goal of a more industrial society. Upcountry boosters were able to secure northern funding and low country political acquiescence for new rail lines to Greenville and Spartanburg. With the transportation infrastructure in place, the local industrialists began an effort to attract northern and foreign investors by touting the area's cheap labor and construction costs.

By the 1870s, this boosterism, the so-called cotton mill crusade, began to pay off. In 1874, the Camperdown Mill was built in Greenville for weaving cotton. Other large mills followed including the Huguenot, Vardry, Pelzer, Pelham, Pacelot, Piedmont, Clifton, and Inman. By the turn of the century, over 140 large mills were operating in the Piedmont, employing almost 50,000 (Carlton, 1982). Many of these workers were women and children. As early as 1882, Greenville County had more mill workers than any other county in the state, including 1,250 children (Ashmore, 1986). Even more significant was the dramatic increase in factory size. This enlarged scale of operations reflected a fundamental shift away from small factories producing primarily yarn for local sale to integrated cloth mills competing in national and international markets. Ironically in light of the future demise of the U.S. textile industry in the wake of Asian competition, Teter (1982) points out that almost half of these textile exports went to China.

Another important point is that the mill owners dominated the political economy of the Piedmont, establishing their own social order. These industrial aristocrats often

took honorary military titles such as Captain Ellison Smyth, the “Dean of Southern Cotton Manufacturers” and Colonel Henry Hammett. However, few of the mills were locally owned and operated. Most mills were either built outright by northern interests or ultimately controlled by northerners such as the Milliken family (Waldrep, 2000).

The local elite hoped that they could create a diversified economy around “King Cotton Mill,” however, they found themselves with a single industry economy heavily dependent upon the North for machinery, finance, textile finishing, and other auxiliary services (Carlton, 1982). Whereas, New England, due to English embargos, was forced to develop its own mill equipment industry and related services, the South did not develop this component of the cluster until after World War II. It was easier to purchase the equipment, as well as auxiliary services from the North rather than develop their own. Not until the virtual collapse of the New England textile industry in the 1920s and the emergence of the synthetic fiber industry, did a true cluster begin to form in the Piedmont (Oates, 1975).

The mill problem. The textile boom precipitated the so-called “mill problem.” The mills demanded more workers, which were increasingly harder to find. Many of the freed blacks left the area after emancipation and for those who stayed, racism prevented their being hired to work alongside whites. Mill owners proudly proclaimed that their factories were “white only” in order to protect their white workers (Sloan & Hall, 1979). Therefore, the mill owners were forced to send their agents to the Appalachian hills to recruit Anglo-Saxon rural folks. To a lesser extent they also attempted to recruit immigrants from northern Europe, but many of these were scared away by the poor reputation of life in the southern mill towns. The proud, independent, and poor mountain

folks tended to be unhealthy, rowdy, and crude (Edgar, 2000). Soon the middle-class merchants and professionals realized the workers they had so eagerly recruited could be threats to the order so carefully crafted in the generation since Reconstruction.

Cotton mill paternalism was celebrated in order to assuage fears of a wage-earning white industrial class. This welfare capitalism was deemed necessary to protect the workers, and thus society, from the demoralization that many South Carolinians saw implicit in industrial life. The major industrialists established villages around their mills complete with housing, stores, churches, and schools for all the employees on the mill payroll. They established fraternal orders and textile-league baseball teams. The government, of course, was completely in the hands of the company, which enforced its own regulations and employed its own public administrators (Waldrep, 2000). Around the turn of the century with the shift to hydroelectric power, mills were built on the edges of Greenville and Spartanburg, but the same paternalistic system was maintained with mill districts in lieu of isolated villages.

An anti-union civic culture. Despite the long hours and low wages in the mills, unions did not make any real progress until the 1930s and even today the area prides itself on its non-union culture. In 1888, the Knights of Labor stirred up a disturbance in Greenville, but the swift response of the industrialists quashed the union movement. This started the trend that continues until today of a virulent anti-union stance by business and community leaders. In 1934, a general strike erupted in both Greenville and Spartanburg. Under pressure from the mill owners, the governor called out the National Guard. Several strikers were killed as the union movement was violently suppressed. Huff

(1995) sees this as the end of the paternalistic mill system as the mill owners viewed the strike as a sign of their workers' ungratefulness for the industrialists' benevolence.

Continuing anti-union sentiment is exemplified by the banning from the area's public television stations in 1995 of a documentary, *Uprising 34* because the film was sympathetic to the unions (Stoney, 1995; Teter, 2002). It is insightful to note that into the 1980s, the Greenville Chamber of Commerce and area schools offered anti-union courses (Sloan & Hall, 1979). Russell (1979) likening Greenville/Spartanburg to a laboratory for a social experiment to see if through paternalism and corporatism, a community can prevent workers from organizing.

Federal military spending helps the region. Coinciding with the development of a textile economy was a trend in military supported development. With the outbreak of the Spanish-American War, the Army started looking for warm weather staging bases. In 1898, the community leaders of Greenville convinced the military to establish Camp Wetherill. The training base closed in 1899, but not before making a significant economic impact on the region (Huff, 1995). When World War I broke out, a group of local business leaders from the Chamber of Commerce petitioned the military to establish another base in Greenville, and in 1917 Camp Sevier was established. Not to be outdone, the Spartanburg Chamber of Commerce raised \$200,000 to lure Camp Wadsworth to Spartanburg and build a major highway between the cities (Works Project Administration, 1940). The thousands of soldiers who passed through these Piedmont bases gave the area a great economic boost.

The 1929 stock market crash, the subsequent prolonged closing of all banks in the county, and the national depression hit Spartanburg hard. The arrival of another large

troop-training facility in the buildup to World War II, Camp Croft, brought hundreds of thousands of soldiers through the county and helped revive the local economy. In Greenville, the U.S. government built Donaldson Air Force Base, which was an active base until 1963 when it was turned into an industrial park. Clearly, federal spending helped to keep the local economy afloat, but it also fostered development of some key industries.

Early History of Lynchburg until the 1940s

Founded on transportation, tobacco, innovation, religion, and slavery.

Founded in the mid-eighteenth century by Charles Lynch as a trading depot on the southern bank of the James River, the mountainous town quickly gained prominence as a regional tobacco market. John Lynch, son of landowner Charles Lynch, established a profitable ferry service in 1757. That same year saw the beginning of regular meetings of the Society of Friends (Quakers), which lasted until the 1820s when most of the religious community left the area due to their opposition to slavery (Brown, 1936). An official town charter from the General Assembly of Virginia was granted in 1786 and the town of Lynchburg grew steadily. By the turn of the century, Lynchburg had several tobacco warehouses, a few stores, homes, taverns, a Masonic Lodge, and one small church.

Thomas Jefferson's Poplar Forest retreat was nearby and Lynchburg was even rumored to have been considered a potential location for the new University of Virginia (Potter & Potter, 2004). By 1833, the predecessor of the Lynchburg City Chamber of Commerce was established and a business community was forming.

Transportation infrastructure was important to Lynchburg's early economic development. By the early 1800s, tobacco was the city's major economy, with numerous

warehouses processing and shipping the product east to Richmond by bateau boats. By the 1820s, a turnpike was completed to Salem and a toll bridge was built across the James River. During this time the town accomplished a major engineering feat with the construction of a waterworks system, which drew its supply from the river below. By 1840, the James River to Kanawha River Canal was completed as far as Lynchburg and packet boats began regular operation between Lynchburg and Richmond. In 1848, Lynchburg incorporated the Lynchburg and Tennessee Railroad (soon to be named Virginia & Tennessee Railroad), following the refusal of the state to fund its construction (Horner & Winfree, 1936). By 1852 the locally controlled railroad was operating. In 1854, the South Side railroad began operation with the arrival of the first train from Petersburg. Lynchburg would see its third railroad, the Orange and Alexandria, a northern route, in a few more years. Lynchburg achieved full status as a city in 1852. By 1860, the Hill City had become the seat of learning, art, trade, and manufacturing for the western part of Virginia. Future Reconstruction Governor Francis H. Pierpoint noted in 1858 that Lynchburg had more the appearance of an industrial Yankee town than a gentile southern city (Christian, 1900).

The Second Richest Town in the United States. Antebellum Lynchburg's tobacco industry made it the second richest per capita town in the United States behind the whaling town of New Bedford (Horner and Winfree, 1936). According to Joseph Robert (1938), Lynchburg produced more tobacco in proportion to its size than any other city in Virginia or North Carolina. The Hill City was proclaimed the largest leaf inspection station and was behind only Richmond and Petersburg as the most important tobacco manufacturing center in the nation prior to the Civil War (Robert, 1952). In

addition to services related to the distribution of tobacco, Lynchburg developed a booming tobacco manufacturing industry. A local tobacconist, Jesse Hare, found how to mix licorice with tobacco to make chew and made a large fortune from the manufacture of this new and unusual product. Another Lynchburg tobacconist invented a granulator to make pipe tobacco and sold it under the popular Killikinnick brand name. Yet another tobacconist, John W. Carroll created the Lone Jack smoking tobacco brand, which was one of the most popular brands throughout the Civil War. Priding themselves on their innovativeness in tobacco, Lynchburgers unabashedly asked to be called, “Tobacco City.” Essentially, Lynchburg had a tobacco cluster.

However, the world of tobacco factories was a world of black slavery. The factories employed over a thousand workers, virtually all of whom were black and most of whom were slaves (Tripp, 1997). The slaves were for the most part leased, which was more economical than owning them and providing shelter and maintenance (Scruggs, 1970). Consequently, Lynchburg’s skilled workers were often slaves.

Other industries, in particular foundries, profited from the area’s railroads and slaves. The Oxford Iron Works in nearby Campbell County, which was in business from 1781 until 1875, was one of the largest foundries in the Revolutionary and post Revolutionary south (Dew, 1974). It supplied the Continental Army with pig iron and cannon balls during the American Revolution, as well as nails, kettles, horseshoes and other iron supplies to civilians. On the eve of the Civil War, Lynchburg and vicinity were home to six foundries that included the manufacture of passenger and freight cars for the railroads (Tripp, 1997). Like the tobacco manufacturers, these foundries depended almost

exclusively on skilled slave artisans who often had considerable leverage in a highly competitive hiring market (Dew, 1994).

Surviving and recovery from the Civil War. In January 1861, the city of Lynchburg voted to stay in the Union, but by April 1861, they repealed their decision due to a strong orientation to southern trade (Goldfield, 1977). During the Civil War, Lynchburg served primarily as a supply and hospital center, and was spared most of the destruction that befell other Virginia cities and towns (Morris & Foutz, 1984). Lynchburg did see battle action, however, when Confederate forces successfully fought off a Union raid. From April 6 to 10, 1865, Lynchburg served as the capital of Virginia. Under Governor William Smith, the executive and legislative branches of the Commonwealth moved to Lynchburg for the few days between the fall of Richmond and the fall of the Confederacy. With the fields converted to staple crops and the tobacco warehouses converted to hospitals, it would take a few years for Lynchburg to recover from the war.

During the late 1870s, the tobacco trade revived and, as it did, Lynchburg's prospects brightened. By 1883, thirty factories manufactured over six million pounds of tobacco, despite unrest from black and, since emancipation, white workers (Tripp, 1997). A tobacconist from nearby Bedford County invented a cigarette rolling machine in 1880 that revolutionized the industry, but sold the rights to the machine to North Carolina manufacturers in 1884. Nevertheless, Lynchburg's days as Tobacco City were numbered as the milder leaf of tobacco more suited to the Virginia/North Carolina border area gained popularity and the Piedmont soil became depleted. Further, the Bright tobacco belt area developed improved transportation facilities, and the Durham, Winston-Salem, and Danville manufacturers better incorporated mechanization (Christian, 1900; Tilley,

1972). Wisely, many of the wealthy Lynchburg industrialists foresaw the demise of tobacco in central Virginia and shifted their fortunes to other industries that would continue Lynchburg's prosperity (Robert, 1952). By the 1920s, tobacco was practically non-existent in Tobacco City, but it would be a relatively smooth economic transition.

A smooth transition through the demise of the tobacco cluster. Many of the industrialists who made their fortunes in tobacco invested in speculative economic development land companies. Often working with northern financiers, they created stock ownership companies that bought up large tracts of land for industrial and residential development. For example, in 1889 Senator John Warwick Daniel and a number of prominent Lynchburg citizens established the West Lynchburg Land Company for the purpose of developing residential and manufacturing sites on 1,000 acres. They soon attracted a zinc works, paint plant, knitting mill, silk factory, glove factory, woolen mill, railroad car plant, brass foundry, and paper mill (Christian, 1900). Other land companies included the South Lynchburg Company, the East Lynchburg and the James River Land Company, and the Rivermont Land Company. These private economic development efforts experienced booms and busts, particularly during the national depression of 1893, but ultimately paved the way for Lynchburg's manufacturing diversification from tobacco.

Lynchburg entered a period of prosperity in the latter part of the 19th century, with iron works, blast furnaces and steel mills fueling the growth. Lynchburg Foundry & Machine Works was founded in 1882 and is known today as Griffin Pipe. Lynchburg was the first southern city in which cast-iron pipe was made, and by the 1930s, pipe and fittings became one of Lynchburg's principal industries. The company still manufactures

cast-iron pipe for municipal water systems. Lynchburg Plough Company followed in 1896 and was renamed in 1902 to Lynchburg Foundry, which still makes parts for the automotive industry, albeit, the old foundry is currently in financial trouble. Other major products from Lynchburg's foundries included rail cars, threshing machines, and tobacco factory fixtures. The Lynchburg area steel manufacturing business boomed, and along with Chattanooga and Birmingham, dubbed itself "the Pittsburgh of the South."

Several other industries developed or relocated to Lynchburg including textiles and in particular shoes. A Bavarian immigrant, Max Guggenheimer Jr., began an innovative retail and wholesale distributing house for shoes and boots. Some of his innovations included posting a single price, sidewalk displays, ready-to-wear clothing, and persuading the city to have street cars to bring customers to his stores from outlying areas (Laurant, 1997). He became an important civic leader and was dubbed "Lynchburg's First Citizen." Guggenheimer was also instrumental in establishing Craddock-Terry Shoe Co. in 1888, which became Lynchburg's largest industry and the largest shoe manufacturer in the South. The first hosiery mill was opened in 1899 by the Chemnitz Company of Rhode Island and became the Lynchburg Hosiery Mill. At one point, Lynchburg based Blue Ridge Manufacturers was the top ranked producer of work clothing ("Blue Ridge," 1952). Thus, shoes, retail, and textiles were important industries making Lynchburg the third richest per capita city in the nation according to the 1913 Lynchburg Directory.

Another innovative company that started at this time and remains until today was founded by a young pharmacist, Dr. Charles Brown Fleet. In 1893, Fleet developed the formula for phospho-soda, the basic ingredient for the Fleet enema. He also invented

Chapstick and sold the recipe to Morton Manufacturing Corporation of Lynchburg, who produced the famous lip balm until selling the rights in the 1960s (Hodges, 1986). Today C.B. Fleet is a worldwide leader in personal health and beauty products. By the dawn of the 20th century, Lynchburg was well underway in its evolution from a tobacco-based economy to one driven by manufacturing. A large diverse number of industries developed, some of which would remain cornerstones of the economy for over a century.

A brief period of boosterism. Lynchburg experienced economic booms during the World Wars and a mild depression. The First World War saw many of Lynchburg's men in the military and the city's industries supplying the war effort. It was during the First World War that Lynchburg received its nickname of “Lunchburg” by the many troop trains that stopped on their way to embarkation points on the East Coast. Despite a wartime spike in the economy, the essential nature of the city remained constant and the census figures from 1910 to 1920 show a population growth of fewer than 600 people (Loyd & Mundy, 1975).

The 1920s was a brief period of boosterism and business led change for Lynchburg. The city developed its manufacturing base, particularly its foundries, but lost much of its wholesale business to larger cities in the South. For a brief period Lynchburg became the home to locally financed and managed Piedmont Motor Car Company, which produced a line of vehicles from 1917 to 1923. The Lynchburg Chamber of Commerce built a four-story industrial manufacturing loft building to encourage small manufacturers in 1924. In a promotional pamphlet titled, *Lynchburg in Old Virginia: The City of Industry and Opportunity*, boosters touted Lynchburg's geographic situation, distribution facilities, native born labor situation, and the city's business like government (Lynchburg

Chamber of Commerce, 1924). Further, the Chamber was reorganized to better promote industrial recruitment.

Nevertheless, the boosterism was short lived and by 1929 the city began an extended developmental hibernation. A confidential 1929 study for the Chamber by the Technical Advisory Corporation, the same New York based consultants who did a 1928 study for the Roanoke Chamber of Commerce, claimed that the city was economically dormant and had fallen behind Roanoke. In spite of the attraction of a number of new industries, a wise program of site control, and the establishment of a manufacturing incubator building, Lynchburg growth had been underwhelming and did not seem to have great potential. The main reason given for Lynchburg's unsatisfactory growth was the dominance of Craddock-Terry Shoe Corporation of which one-fourth of the city's population was dependent. The shoe manufacturer employed nearly 4,000, the predominance being women, and this prevented more industries from being attracted to the area.

Progressive backwardness. In 1920, Lynchburg became the second community to adopt the council-manager form of government. The bicameral form of government had become too unwieldy so, under pressure from business leaders, Lynchburg adopted the commission form of government with authority invested in a city manager and a council of five, one of whom served as mayor. In 1928, the city council was increased to seven members to provide more representation. The city had become a sophisticated urban center run by an "oligarchy that was efficient, honest, and often boring," gently nudged by a rotating panel of businessmen known as the City Council (Potter & Potter,

2004, p. 126). The city elite were able to maintain their control over the Hill City's government and preserve the social order until the 1990s.

During the Great Depression, Lynchburg remained solvent and honored its bonds when they came due, a feat that would have been impossible were it not for the availability of New Deal funds (Heinemann, 1983). Elson (2004) claims that Lynchburg's construction industry did recover quickly during the depression because of a number of publicly funded projects including an airport, jail and refurbished city hall. Further, the city did not experience the violent labor unrest of other southern industrial cities ("Full Operation," 1934). Cole (1998) maintains that while Washington's programs placated and encouraged an entitlement mindset among the Lynchburg's needy, the elite also succumbed to a similar reliance on the federal government, as evidenced by the quest to gain all they could for Lynchburg from the federal government. The Hill City's progressive backwardness helped it muddle through the economic storm.

Like the First World War, the Second World War was a boon for Lynchburg's economy. Over 100,000 GIs came to Lynchburg for its wholesome War Recreation Center and notorious red light district (Elson, 2004). Craddock-Terry pumped out boots for the military, the hosiery mill was making parachutes, and Lynchburg Foundry made parts for troop ships, as well as parts for the top secret atomic program. However, mass production of basic commodities did not bring with it advanced technologies.

Early History of Roanoke until the 1940s

The founding of Roanoke: location, location, location. The key to Roanoke's economic development has been its location. The history of Roanoke began in the 1740s when settlers came from Pennsylvania and occupied land near the salt licks where Native

American and animal trails converged. The original town was called Old Lick, but in 1874 the town was chartered as Big Lick. The main community in the area and the county seat was nearby Salem, which was chartered as a town in 1806 (Norwood, 1986). The Salem-Lynchburg turnpike was opened in 1817 and the railroad came to the Shenandoah Valley in 1852 en route from Lynchburg to Bristol with a station in Salem and small depot at Big Lick. In 1847, the Virginia Collegiate Institute, later renamed Roanoke College, moved to Salem. After the Civil War, Salem was predicted to be a huge, thriving city by the turn of the century, and marketed itself in pamphlets as the "Switzerland of the South" (Colquitt, 1890). However, thanks to civic boosterism and a northern owned railroad, Roanoke would take advantage of its location to become the major city of the valley.

In the 1880 census, Big Lick was a small agricultural trade center of 669, about half of whom were black. The town had a few grist mills, lumber firms, canneries, and tobacco warehouses when Norfolk & Western (N&W) officials came to the area seeking a site to link the north/south Shenandoah Valley line with their east/west line (Antonelli, 1988). The lines would open up the coal and iron ore of the Blue Ridge, as well as bring industry to the region. Hearing that the railroad was getting a cool reception from the civic leaders of Salem and Lynchburg, Big Lick called a town meeting. Major local land owners, Mayor John Trout and Councilmen Peyton L. Terry convinced the community to raise \$10,000 as a cash bonus to the railroad and sent a young man on a midnight ride to Lexington to tell the railroad executives from Philadelphia that Big Lick wanted their business (Coleman, 1954). The town resolution inviting the railroad to make its junction at Big Lick, along with the cash pledge, plus free land for the terminal facilities and tax

incentives convinced the railroad president, Frederick Kimball in 1881 to establish the junction at Big Lick (Dotson, 1993). When the railroad executive visited Big Lick, they were met with a brass band and an offer to change the town name to “Kimball.” The railroad president demurred and the name was officially changed to Roanoke, the Native American word for shell “money.” Roanoke would, at least for a time, become the “gateway” to the iron and coalfields of southwest Virginia and live up to its namesake.

Riding the railroad for the long term. Investment by N&W spurred growth. In just a few years, Roanoke would become Virginia’s fifth largest city, as well as the fourth fastest growing urban area in the nation (Larsen, 1985). In 1881, N&W created the “The Roanoke Land & Improvement Company” (RL&IC) as its real estate and development subsidiary, which bought up most of the desirable property, laid out streets and squares, and sold parcels for development. N&W also built the Roanoke Machine Works (RMW) to manufacture and repair railroad cars and locomotives. Crozer Steel & Iron Company set up its blast furnaces nearby to service RMW. In 1882, the first train on the new line arrived in Roanoke, and N&W constructed the grand sixty-nine room “Hotel Roanoke.” Norfolk & Western railroad moved its headquarters from Lynchburg to Roanoke in 1883. The railroads had jump-started Roanoke’s economic development.

Under northern tutelage, local entrepreneurs took advantage of opportunities created by the railroads. Trout and Terry, who lucratively sold their farmlands to N&W, were rewarded with appointments to the N&W Board of Directors. Terry founded Roanoke Gas Company in 1883 and set up Roanoke Development Corporation (RDC), a real estate development company. RDC enticed Duval Engine and Machine Works, Bridgewater Carriage Works, and Norwich Lock Manufacturing Company from

Connecticut to its industrial park. These companies soon employed over 600 workers (“Marvelous Growth,” 1891). Other local/northern partnerships for industrial development included Buena Vista Land Company and Messrs Powell, Whitehurst & Company. The development companies distributed extravagant promotional circulars in the North and offered deals for companies willing to invest quickly. The land developers’ efforts paid off as in five years the price of some farms went from \$800 to \$125,000 (“Growth of Southwestern,” 1883).

A local government open for business. Local government began to develop, but it could not keep pace with the city’s economic expansion. Roanoke legally became a city in 1884. The charter provided for a mayor and a unicameral twelve member ward council. The charter exempted capital invested in manufacturing enterprises from municipal taxation for ten years and limited property taxes to less than one percent of assessed value (Moger, 1968). The local government’s “open for business” ethos prevented much public infrastructure investment as mud streets and open sewers greeted visitors until the early 1890s. Realizing that inefficient government was bad for business, the Roanoke Chamber of Commerce led an initiative to adopt the city manager form of government in 1918 (Writer’s Program, 1942). However, government could not handle Roanoke’s spectacular growth.

News of the growing opportunity in Roanoke drew in hundreds of entrepreneurs hoping to turn a profit in the new “boomtown” and created real estate speculation frenzy. Unskilled workers flocked to the city from the hills and hollers of Appalachia, however, Roanoke’s new railroad industries required hundreds of highly-trained skilled laborers. Most of these technicians had to be imported from the North since Virginia and the South

lacked such skilled workers. Merchants, saloon keepers, bordello operators, lawyers, insurance agents, and surveyors flocked to the city. Manufacturers were also attracted to the growing city.

Companies were attracted by a Roanoke Commercial Club ad campaign and promises of free land and a fifteen year tax exemption for new manufacturers. J.P. Bell Printery, later known as Stone Printing and Manufacturing Company, moved from Lynchburg to service the railroads with their printing needs. Six local entrepreneurs started the Virginia Brewing Company, which grew to be one the largest breweries on the east coast until being put out of business by Prohibition. In 1890, a Connecticut businessman founded Old Virginia Company, which is still extruding bricks today (Adams, 2005). The population increased at least 416 percent from 1880 to 1883, another 579 percent from 1883 to 1890, and an additional 143 percent from 1890 to 1892, for a combined 3,472 percent increase in twelve years (Dotson, 2003). New South pundits labeled Roanoke the “Magic City” because of its spectacular economic growth; however the image of the city would soon be tarnished.

Economic forces shake the “model” New South city. The Depression of 1893 was one of the worst in American history with the unemployment rate exceeding ten percent for half a decade (Steeple, 1998). The depression burst Roanoke’s real estate bubble and created widespread unemployment. Orders for rail cars and locomotives plummeted. Dozens of local firms went bankrupt, scores of residents lost their jobs and left town, and the city itself teetered on the edge of ruin. Already with meager budgets because of its pro-business tax policy, the city closed schools and aborted all planned

improvements. Even Terry, who had become grossly over extended, went bankrupt. Things would get worse for the symbol of the New South.

Racism and segregation had always been part of the “Magic City” and economic depression would bring this evil out. This turmoil came to a head in September of 1893 when Mayor Trout called the state militia to keep a mob of over one thousand from lynching a black man accused of assaulting a market vendor (Alexander, 1992). The police shot and killed nine people and injured dozens, but could not keep the mob from hanging and burning the innocent black man. The mayor was injured and forced to go into hiding as the mob rampaged through the city.

Northerners were shocked by the anarchy in this “model” New South City. The New York Times (“Roanoke’s Reproach,” 1893, p. 4) editorialized, “Roanoke has disgraced itself and brought reproach upon a flourishing community that should have prided itself on maintaining order and upholding law. It is of the new South, and owes its vitality to northern blood, but its birthright has been flung aside. It can only redeem itself by facing about and showing a determination to restore the sway of law, which a wild impulse led it to overthrow.” It would be a new generation of business leaders that would revive the city as Trout and Terry and their peers were disgraced, as well as bankrupt.

A new generation of boosters and the rise of the steel fabrication cluster. In the aftermath of the riot, the city’s next generation of businessmen and promoters mounted a campaign to rehabilitate the city’s tarnished image and prevent any recurrence of challenges to their authority. The town’s business leaders sought outside investment as the best possible remedy and this even included courting other railroads. Steel and iron fabricating plants became the main industries. In 1895, the Virginia Bridge and Iron

Company was established and grew to be the largest structural steel plant in the south before being acquired by U.S. Steel in 1952. The plant was finally closed in 1965. The Roanoke Bridge Company, incorporated in 1906 by several southern businessmen, built over six hundred bridges throughout the South. In 1907, a group of Richmond businessmen established the Virginia Metal and Culvert Company. Because of Roanoke's strategic location near the iron ore and coalfields of Appalachia and its transportation infrastructure, steel fabrication would remain an important industry for Roanoke up to the present day.

Other industries included textiles, and building materials would develop in Roanoke for similar location reasons. The Roanoke Cotton Mill, established in 1901 through a combination of native investors and a New York City financier, employed several hundred women and children ("From Roanoke," 1901). In 1906, local industrialists opened the Adams, Payne & Gleaves Company and the brick factory employed several hundred men. In 1895, another group of investors founded the Roanoke Marble and Granite Works. The Virginia Lumber & Mfg Company began operations in 1906, and other wood products companies like Harris Hardwood (1919) from Tennessee and Johnson Carper Furniture Plant (1928) followed. By 1912, the booster's campaign had been rewarded as Roanoke could boast of:

"...two bridge companies, several large planing mills, flouring mills, two ice plants, a large brewery, several bottling works, two blast furnaces, two overall factories, one iron works, three marble factories, a fertilizer factory, a metal culvert factory, a cotton mill, a box factory, one packing house, several large printing houses and book binderies, a barrel and stave factory, one extraction and proprietary remedy manufactory, an enamel-ware factory, an aerial tramway manufactory, several sash, door and blind factories, a sheet metal manufactory, a candy factory, several cigar factories, as well as numerous smaller industries" (Jacobs, 2000, p. 27).

Roanoke's economy was back on its feet.

The New South paradigm. Roanoke had emerged as an extreme version of all that was supposed to remedy the South's post-Civil War economic stagnation. The "New South Movement" marked the end of an era of social, economic, and political revolution and the beginning of the Industrial Revolution in the South (Woodward, 1951). The business revival brought the rise of southern factories. Southern empires of timber, coal, and iron attracted northern and foreign investors. Agricultural production was revitalized, and railroads and bridges were constructed in response to the expanding economy. The South, rich in natural resources, but poor in capital, represented an appealing economic frontier for investors toward the end of the nineteenth century. Roanoke epitomized this New South movement.

Nonetheless, Roanoke showed the downside of this movement. Dotson (2003) concludes in his dissertation on early Roanoke that the city had a:

business-friendly ethos that put economic development ahead of all other causes, envisioned industrial expansion as a panacea for social ills and infrastructure troubles, and channeled municipal capital into investment schemes instead of solutions to the rapidly growing city's numerous other needs. The consequences were widespread societal and institutional malfunctioning that climaxed in a cataclysmic lynch riot. When that revolt and the city's decrepit appearance threatened to stall additional development, local elites 'reformed' Roanoke in ways that made investors less anxious. Those modifications, however, were largely superficial and failed to resolve the municipality's systematic and deeply embedded problems (p. 2).

Roanoke would never again experience the anarchy of 1893, but many of the latent tensions are still being addressed.

A rayon plant rivals the railroads. The 1910s and 1920s were prosperous times for Roanoke and saw the arrival of one of the areas largest employers: the American

Viscose Corporation. In 1916, the Chamber of Commerce heard that a representative from the English company was looking for a location for its second U.S. plant for the manufacture of filament yarns used in apparel and decorative fabrics. The plant was expected to employ 1,000 workers for the malodorous process of turning wood pulp into artificial silk (Bishop 1998). The plant would emit waste sulfuric acid and zinc compounds, so access to a river was required, as well as railroad service, inexpensive labor force, a considerable tract of land, and secrecy for its novel process. Roanoke had all these characteristics. After a secret series of meetings, the Roanoke Association of Commerce was able to convince American Viscose to locate their rayon manufacturing mill in Roanoke (Tappert, 1992). Arrangements were made by the Chamber with the public utilities, and the City agreed to extend a road to the plant and construct a bridge (Barnes, 1968). Roanoke now had a large employer to rival the railroad.

The massive rayon plant would have significant influence on the local economy. In order to attract and retain a loyal, efficient workforce, the company constructed a dormitory for women, who were needed for their soft hands, and who made up almost half of the plant's labor force ("Viscose Corporation," 1927). As demand for rayon continued to grow into the 1940s, the plant expanded to almost 6,000 workers and became the second largest employer behind only the railroad. The plant did shut down temporarily during the Great Depression, but bounced back with World War II demand. However, by the 1950s, nylon, acrylics, and polyesters were overpowering rayon, so in 1958 American Viscose gradually consolidated its production to Lewiston, PA and Parkersburg, WV and closed the Roanoke plant leaving the city with a Superfund site ("American Viscose," 1958). Nevertheless, the Roanoke economy managed to hold its

own after the initial impact of the American Viscose plant closing and the near simultaneous loss of 2,500 relatively high-wage jobs, due to modernization, of the area's largest employer, Norfolk and Western (Hammer, 1965). New companies attracted to Roanoke, were able to compensate for many of these losses.

Roanoke hires an economic development consultant. In the late 1920s, The Roanoke Chamber of Commerce hired the Technical Advisory Corporation of New York, the first private planning consulting firm in America, to develop an economic development plan for the area. The Technical Advisory Corporation (1928) recommended that the city concentrate its economic development efforts on ten industry sectors including: canneries, cheese factories, textiles, locomotives, structural steel, fertilizers, furniture/wood products, leather, Portland cement, and chemicals. In addition to attracting these industries and helping those already located in the area, the consultants recommended that the Chamber establish a revolving loan fund for manufacturers and seek alternative taxes to the machinery and tools tax. This study was remarkably similar to future studies of economic development in Roanoke.

Rayon and railroads boost the economy in depression and war. The Magic City escaped the full force of the Great Depression. By 1930, Roanoke was boasting that it had the largest rayon producing mill in the world and the largest railroad shop, largest structural steel plant, and the largest tin can factory in the South (*Roanoke Times*, 1982). These large industries would help cushion the local economy. N&W's net income, the city's largest employer, was cut in half, but still generated positive income. Sales of steam locomotives slowed, but did not stop. Only one local bank went bankrupt. American Viscose began recalling workers as early as 1932. The area did receive help

from the federal government, such as the building of the Blue Ridge Parkway and the establishment of a Veterans Administration Medical Center in Salem. By 1934, the city felt confident enough in its finances to celebrate its Golden Anniversary and start construction of an airport.

World War II helped revive the economy and laid the groundwork for a period of economic growth. American Viscose shifted to large quantities of high-strength rayon for use in airplane tires, paratroop uniforms, parachute cloth and shroud, and self-sealing gas tanks. It took two daily trains to carry workers from Roanoke to the Radford Ammunition plant fifty miles down the valley. The symbol of this revival was the construction of a large star on a mountain overlooking the city sponsored by the Roanoke Merchants Association to promote the holiday shopping season of 1949. The temporary Christmas decoration would become permanent as the Magic City had evolved into the “Star City of the South.

