

## **INTRODUCTION**

**"May You Live In Interesting Times"**

**Traditional Chinese Curse**

The United States is preparing to enter an age of technological domination unprecedented in the world's history. This new age is the culmination of a slow, but steady, marriage of computer science and communications science that has been evolving since the Second World War. At its most fundamental level, this new science is the convergence of the methods of human discourse and the forms of human information into a single, continuously interactive stream. According to futurists such as Toffler and Negroponte, the convergence of science and human discourse will unleash forces in our societies which will affect every aspect of human existence. According to these prophets, the physical and mental bounds of our personal relationships will evaporate, our understanding of organizations, governments, and religions will be expanded, and the world of economic growth or decline will be transformed beyond national boundaries and cultural identification.

We as a nation stand ready to enter this "Brave New World", but we have not yet agreed upon the way we will enter this new age. Currently we are presented with a single vision of our future, but contradictory recommendations on the means that will be employed to achieve this future.

One vision sees the Federal government developing both tax and regulatory policy that underwrite the development of a comprehensive computer literate society. Under this vision, free email accounts are available to all citizens, free terminal access is provided through public schools and libraries, and charges for home access to the Internet are subsidized by commercial and business users.

The opposing vision sees the end of all Federal and State involvement in the development of the new society. Under this vision, the free market and competition are the mechanisms whereby services, products, and access are developed. Demand for services and equipment control pricing, and eventually the "invisible hand" of the market place lowers the cost of communications to such a point that everyone in the society will gain access.

While disagreeing on the means, both protagonists agree on the method to reach the end. To achieve our brave new world, the United States must possess a high speed, broadband communications network which reaches into every office, home, and classroom in the country. Broadband networks digitize signals from computers, telephones, televisions, and radios into a simultaneous single interactive communications medium. Data, video, and sound merge into a single stream flowing to and from users on the network, creating a world where information, personal thought and expression, and imagery become one. This process of convergence and merger is the doorway to the future "information" society.

In order to create this "doorway" it is estimated that 100 billion dollars will have to be invested in upgrading the current telecommunications infrastructure of the United States.<sup>1</sup> Once the investment

---

<sup>1</sup> The traditional telephone network is changing its character. Having been built as a universal carrier for voice, it now has to meet the communication requirements of a modern economy going far beyond simple telephone calls. One important development is the Integrated Service Digital Network ISDN. This offers the opportunity to send not only voice, but also data and even moving images through telephone lines. ISDN is particularly suited for the communications needs of small and medium sized enterprises. It permits, for example, direct PC to PC communication, for instant, low-cost transmission of documents. Teleworking using ISDN services can be attractive to a wide range of businesses. ISDN is also an ideal support for distance learning. But ISDN is only the first step. New multimedia services, for instance high quality video communications, require even more performance. ISDN is showing the way, and the next technological wave aims for the multimedia-world. This is integrated broadband communications, providing an opportunity to combine all media in a flexible way. Integrated Broadband Communications, IBC, is the next step in the development of telecommunications and computer science. It is actually the technical convergence of the two fields into a single system. IBC is the process of digitalization of computer networks, telecommunications networks, television and radio networks, and satellite linkages

is made, the estimated returns are impressive: \$321 billion in net new GDP growth, 3.6 million new jobs nationwide, \$137 billion in new consumer spending over 10 years, and a 4 percent increase in United States productivity over 16 years. But questions remain unresolved over who will pay for the upgrade, how fast will it occur, who will control and benefit from the new system of communication, and how this new paradigm will be integrated into the fabric of our society and our daily lives.

The United States Congress, in an attempt to unravel this Gordian Knot, approved two conflicting legislative agendas. The Senate vision, SR652, provided for the beneficent hand of government to guide our development as an information society; an active interventor achieving balance between a competitive environment and the public interest. The House vision, HR1555, focused on the invisible hand of the market place, and relegated government to the role of an umpire in a no-holds barred contest of commercial rivals seeking to dominate both development and access. Both bills were sent to a Conference Committee that sought to resolve the differences between the two visions. Eventually the compromised vision was approved by both the House and Senate, and signed by the President. It is known as the Telecommunications Deregulation Act of 1996.

During the debate over the two differing visions of our future, the private sector mounted an unprecedented campaign to influence the legislative agenda. The siren's song of sales, estimated to reach one trillion dollars annually by 2010 in both national and international markets, unleashed thousands of lobbyists, and millions of dollars in campaign contributions, on Capitol Hill.

In the process of advancing their individual corporate interests, the telecommunications business community fragmented into warring factions where former allies became enemies, and former enemies became allies. This was no more evident than in that group which formerly composed the telephone policy subsystem.

In this war over future profits, we saw the strange alignment of A. T. & T. and its former opponents, M. C. I. and Sprint, united against the seven Regional Bell Operating Companies (RBOCs), the former corporate partners of the A. T. & T./Bell System. In addition, we found the

---

into a single all embracing interactive communications medium that handles voice, video, and data simultaneously. The lead technology to implement this is called Asynchronous Transfer Mode (ATM). Highly developed broadband distribution already exists in the form of cable and satellite networks, or it is being deployed. Application of currently available sophisticated digital techniques, such as picture compression and digital signal transmission, will easily enable these networks to fulfill mainstream demands for interactive individual information and leisure uses. The development of such a system will require the upgrading of existing copper telephone lines to handle higher transmission rates. In addition to upgrade of copper lines, fiber optic cabling will also need to be laid not only for long distance communications, but also linking such lines into local homes, businesses and institutions. The cost in recabling the existing telephone system has made the development of satellite and microwave transmission a viable alternative to the physical recabling of the country. Satellites are mainly used for television broadcasting, Earth observation and telecommunications. The crucial advantage of satellites is their wide geographical coverage without the need for expensive terrestrial networks. Satellites have many advantages for providing rural and remote areas with advanced communications. Full exploitation of satellites can only be achieved by a new phase in satellite policy. The total retooling of the existing network, coupled to the development of signal based transmissions using satellite and microwave, are major factors in the final costs involved in developing this new electronic doorway. New basic services such as e-mail, file transfer and interactive multimedia are needed in order to promote the usage of such systems, and are dependent on the quality of the telecommunications infrastructure to handle this level of advanced communications. The necessary technology is available. New networks are developing, eliminating the present limitations of the telephone network. But two basic elements are needed for such services: unambiguous standards of communications and critical mass of customers. The attraction of a telecommunications service depends directly on the number of other compatible users, and this is dependent on the level of communications technology available to the customer. Thus, a new service cannot really take off until a certain number of customers has subscribed to the service. Once this critical mass has been achieved, growth rates can increase dramatically, as in the case of INTERNET.

Federal Communications Commission, the historical regulator of long distance service, supporting the challenge by the long distance service providers against the local Bell operating companies, while the State Public Utility Commissions (PUCs) lined-up with the RBOCs against the long distance providers, whom they had historically depended on for the influence and support necessary to create and maintain inexpensive local telephone service.

Traditionally, political scientists and policy scholars have referred to the historical relations that existed in the telephone policy subsystem as an "iron triangle", "policy monopoly", or "sub-government". Under this view of a policy monopoly, members in the subsystem share common policy goals that produce a sense of cohesion. The members sustain this cohesion by distributing policy benefits to the various members of the subsystem, and minimize conflict by extending benefits to potential opponents. To a great extent the policy monopoly is able to sustain itself because it uses technical expertise to limit participation, and remove the policy arena from public scrutiny.

The current development of a new telecommunications "regime" <sup>2</sup> within the United States demonstrates conclusively that what formerly composed the policy subsystem within the telephone regulatory system has fragmented, and is in the process of transformation and change. The question as to why such a powerful policy subsystem, one that has existed within the United States in one form or another for over one hundred and twenty-five years, should now, at this critical juncture of our social development, be in the process of radical transformation and change, is the focus of this dissertation.

In order to analyze this transformation, elements of policy analysis research developed previously to explain decay and transformation in a policy subsystem will be used in conjunction with the broader analytical framework of Anthony Giddens' "Theory of Structuration". This theoretical approach will allow for the creation of an analytical framework oriented toward the concept of a policy subsystem as a belief maintenance system. This new framework will be applied to the telecommunications regulatory regime of the United States, in particular focusing on that aspect of the regime involved in telephone regulation, and seek to ascertain the underlying causes for this policy subsystem transformation, and the possible consequences being created for our not too distant future.

---

<sup>2</sup> The term "regime" is used here to denote a formally established system of governance composed of generally accepted and customary procedures, rules, and laws. The system constitutes both a system of administration, and a set of legally recognized rights and obligations for officially designated members