The Spark that Ignites the Creative Idea: An Examination of the Group Practice of LAUNCH

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ACADEMIC ABSTRACT

LAUNCH is a multi-organizational initiative led by NASA, Nike, USAID, and Department of State to seek and accelerate disruptive innovations to address intractable sustainability issues. The focus of this embedded case study is the evolution of the idea of LAUNCH through the lens of group practice. The empirical evidence includes detailed documentation of artifacts, group practice constructs, interaction and process maps for the five embedded cases, sentiment analysis of 25,000 email interactions, as well as a unique contribution of insights from a LAUNCH co-founder and participant-observer that were continually woven back into the conduct of LAUNCH group practice. The study looks at the conduct of group practice in a continual pull and tug across four construct continuums: tall-flat governance, expedite-explore deliberations, control-create idea generation, and electron-proton behaviors. Process maps of the group activities and artifacts demonstrate the continual tension along these continuums, which is supported by sentiment analysis of email interactions among group members. Plotted over time, sentiment analysis illustrates successive waves of positive and negative interactions during deliberation around development and implementation of ideas and processes. These findings are described using scientific metaphors from atomic physics and quantum mechanics. The behaviors of individuals within the LAUNCH core group resemble subatomic particle behaviors, while the group interactions sentiments resemble quantum theory wave behaviors, such as light waves. The quantum revolution resolved the scientific dilemma of wave and particle behaviors of matter and energy – which is much like the duality of the conduct and behavior of individuals and the interconnected interactions in group practice, and its effect on the rise and fall (wave) of ideas. The particle-wave duality in quantum theory sparked the big idea for a quantum theory of social dynamics, proposed in this study. The proposed theory applies to the conduct of group

practice, behaviors exhibited by individuals and groups of individuals, and the generation of ideas evoked by disruption through social interactions. The proposed theoretical tenets may shed light on the broader understanding of the social dynamics embedded in group practice: 1) group practice is convened around and bound by a shared goal – the strong force; 2) individual actions influence the conduct of group practice in positive and negative ways; 3) individuals convened in group practice interact with one another through interconnected wave patterns of sentiment that affect the rise and fall of ideas; 4) individual behaviors and group interactions fluctuate in dynamic patterns of interference that disrupt the conduct of group practice; 5) individuals and groups of individuals mutually reinforce one another and amplify ideas with in-phase behaviors, while obstructing people and progress with out-of-phase behaviors; 6) disruptive thinking is a discomfort factor necessary for idea generation in a socially constructed world; and 7) creativity that arises in response to disruption can evoke idea-generation, new knowledge, and new ways of knowing.

GENERAL AUDIENCE ABSTRACT

LAUNCH is a multi-organizational initiative led by NASA, Nike, USAID, and Department of State to seek and accelerate disruptive innovations to address intractable sustainability issues. This study looks at how tension and conflict generated by team collaboration can lead to innovative outcomes. The study maps individual and group interactions, processes, and products over a five-year period as the LAUNCH team conducted innovation events around the topics of water, health, energy, waste, and materials. The findings are described using scientific metaphors from atomic physics and quantum mechanics, which sparked the proposed quantum theory of social dynamics that applies to collaborative behaviors exhibited in teams, and creativity evoked by disruptive social interactions.

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Chapter 1: Introduction

Premise: The idea of LAUNCH has evolved over time.

"Our society has reached a point where its progress and survival depends on our ability to organize the complex and to do the unusual."

James Webb, former NASA Administrator

LAUNCH is a multi-organizational initiative to seek and accelerate disruptive innovations to address intractable sustainability issues that affect the quality of life for global citizens and the planet that hosts us. The focus of this study is the evolution of the idea of LAUNCH through the lens of group practice. The research premise is: the idea of LAUNCH evolved over time. The central question is: in what way and how. The three sub questions are: what group practices have been used in the five embedded interactions of LAUNCH; to what effect (i.e. how has group practice affected the conduct of LAUNCH); and how does group practice influence idea generation.

The study uses a practice-based approach, which offers a "radical alternative" for the organizational learning and knowing, by offering a fresh perspective of the world as "relationally constituted" in a "seamless web of heterogeneous elements kept together and perpetuated by active processes of ordering and sensemaking" (Nicolini, Gheranrdi and Yanow 2003: 27). The collaborative co-creation and evolution of the LAUNCH sustainability innovation program exemplifies a practice-based way of knowing, in a socially constructed world that continually changes how we know and understand it. In particular, LAUNCH is a case of collaborative problem-solving and innovative knowledge-creation, designed to address what Weber and

Khademian would characterize as a "wicked" problem, i.e. sustainability, where no consensus

exists on the cause and effect of the problem or solution, and the issue is laced with

ambiguity, uncertainty, conflict, and complexity (2008: 336; Roberts 2000). The degree of

uncertainty dictates the level of information, processing, and decision making required to reach

acceptable outcomes (Scott 1987: 88; Galbraith 1977:36).

Section 1 describes the methodology for this study, including a discussion about the data

collected and process of analysis. Section 2 includes a summary of the literature that framed the

research and is organized in four categories: knowledge generation, decision making, group

dynamics, and motivation. An additional category for science contributed to the analysis of the

results. Section 3 discusses the significance of this study for specific audiences in the fields of

organizational dynamics, group practice, social science, education, and innovation.

Section 1. Methodology

LAUNCH is a complex initiative with innovative processes built upon the foundation of

collaborative principles. Using the embedded case study methodology, I examined group

practice and idea generation across the five LAUNCH cycles: Water, Health, Energy, Waste, and

Materials. I compared the interactions, processes, and outcomes over time from 2009-2013 based

on LAUNCH documents, artifacts, and email within the five embedded cases of interaction that

align with the challenge topics each cycle. Each of the five cases provides a snapshot of group

practice in terms of different or similar processes and practices, as well as the rise and fall of

ideas. "Groundbreaking cases provide the soil for generating ill-defined problems;" therefore, the

case study methodology is well suited for an examination of LAUNCH group practice (Scholz

and Tietje 2002: 26). Using case study methodology, I can offer "naturalistic generalizations"

that combine my personal experiences with a summary of observations and interpretations

(Creswell 2009:64) in order to shed light on or gain understanding of the "structure of a phenomenon in order to develop hypotheses, models, or theories" (Scholz and Tietje 2002: 11). Built inductively, these generalizations about LAUNCH group practice represent the whole as "interconnected thoughts or parts" (Creswell 2009:64). The sentiment analysis offers an objective check to validate or refute my participant-observer experiences. The context of this study offers particularity (Creswell 2009: 193), rather than generalizability, yet it is my hope that the constructs and proposed quantum theory of social dynamics offered in the study may be used to shed light on group practice interactions outside the context of LAUNCH.

The embedded case study method allowed me to focus my research on the barriers between an idea's initial state and target state – specifically the wicked problems where the "initial state cannot be precisely described, [the] target is not sufficiently known, [and the] types of barriers to be passed are not known" (Scholz and Tietje 2002: 26). In this study, I looked at the interactions of group practice – the barriers, such as disruption and conflict – through which an idea must survive in order to complete the journey from initial state to target state, as suggested by literature on practice-based theory (Nicolini et al 2003). I looked at the meaning and patterns that emerged from the data (Creswell 2009: 175). Using the embedded case study methodology, I hope to contribute to scholarship of group practice with the intent to "expand our knowledge, to explore the unknown – to discover" by seeking anomalies and conditions "not explainable by the current state" (Hatton and Plouffe 1997: 107) of how we know and understand collaborative practice and knowledge generation.

This research represents a participant-observer point of view. As an employee of NASA and co-founder of LAUNCH, I am uniquely positioned to research the practice of LAUNCH, though I bring my personal bias into the study as a participant-observer. I contributed to the practices and generation of knowledge through the evolution of the idea of LAUNCH. This

qualitative research was conducted inductively through the practice theory lens, using a

systematic analysis of the data through process mapping and sentiment analysis to uncover

insights about patterns and generalizations of group practice and the influence of group practice

on the rise and fall of ideas. In the tradition of social constructionism, this study looks at the

"conditions of knowability" (Kubik 2009: 38; Creswell 2009: 8) and the "processes of

interaction among individuals" (Creswell 2009: 8) – using the following frameworks: idealism,

"attention to how reality is mediated by interpretation;" diachronism, "attention to process;" and

interactionism, "attention to the social interaction as constitutive" (Kubrick 2009: 39).

"Interpretivists are also constructivists in the sense that they see the world as socially made"

(Weeden 2003: 80) with actions or deeds repeated over time as practice. "They are learned,

reproduced, and subjected to risk through social interaction" (Weeden 2003: 87). Social

interactions in the practice of LAUNCH are the building blocks to construct knowledge and

ways of knowing, in terms of relationships, processes, and products. The practice-based

approach methodology takes the stance that the "world is always in the making" with "doing" as

the heart of the research (Nicolini et al. 2003: 21). Practice is an important factor in

comprehending "knowledge-related phenomenon" (Nicolini, et al. 2003: 26) in the evolution of

LAUNCH as the core team generated new ideas.

In the case of LAUNCH, knowledge is situated in the context of practice – which is

understood based on the topic, relationships, time period, or application (Weber and Khademian

2008: 339; Nicolini et al. 2003). The sampling strategy included five embedded cases of

interaction, within the larger context of the LAUNCH practice, that reflect the sustainability

challenge topics: water, health, energy, waste, and materials. The focus of interactions was the

smaller subunit of LAUNCH – the core team – comprised of representatives of the four founding

organizations and the consulting staff. The diversity of the core team includes a range of ages

from the 20's-50's, male and female, multiple ethnic and religious backgrounds, and a

geographic mix from Washington, D.C, Portland, San Francisco and Mountain View, British

Columbia, New Zealand, and multiple European countries. The individuals themselves are

embedded in the cases based on their participation. I could make the case that each individual

came to us through random sampling – we didn't recruit members, they recruited themselves.

Only on two occasions did we invite members to the team. They had both been former

LAUNCH Council, and we (collectively agreed) to bring them on contract with NASA.

The theoretical purpose and relevance of the interactive data is to map the relationships that

characterize the practice – what happened when; what interactions and alliances shaped or

influenced behaviors, process, and outcomes; and what circumstances and behaviors contrib

uted, if at all, to idea creation. I framed the analysis of group interactions within the five

embedded cases in terms of how LAUNCH practice shifted on the continuum toward or away

from collaborative principles; and how group practice influenced idea generation and evolution.

Within this framework, I organized in a three-tiered architecture of analysis (Scholz and Tietje

2002: 31). _Level 1_ provides the holistic perspective of LAUNCH from an historical viewpoint

and includes process maps that demonstrate the evolution of the idea generation within

LAUNCH group practice across the five embedded cases. _Level 2_ provides an assessment of

group practice norms using constructs to determine characteristics of collaborative practice, and

to assess the conduct of group practice through governance, deliberative processes, idea

generation, and behaviors. In addition, metaphors from science provide insights into the social

science of group practice. _Level 3_ assesses the effect of group practice on LAUNCH process

through the lens of Level 2 constructs, providing a process maps of 1) contract language, 2)

tensions across cycle processes; 3) cycle milestones with breakdowns, breakthroughs, and big ideas at each milestone; and 4) sentiment analysis of group practice email collections consisting of 14 or more interactions. In each level of analysis, I overlay my participant-observer interpretations of group practice and process – tensions, barriers and breakdowns, breakthroughs, and idea generation – which are unique to this study from the perspective of a civil servant embedded in a collaborative initiative that includes public and private partners. My perspective, in the form of interpretation, is what qualitative studies scholar Fred Erickson called "the most distinctive characteristic of qualitative inquiry" (Stake 1995: 8).

The data available for this study includes email, internal and external historical documents, and field notes. I relied on outcome-related artifacts to map the knowledge generation process, including contract statements of work outlining requirements for the consultants and with our collaborating organizations (IDEO, Architecture for Humanity, Office of Naval Research, and Vestergaard Frandsen), idea concept papers, meeting agendas, draft terms of service with Nike, Memorandum of Understanding with USAID, and other logistical documents for the LAUNCH Forum planning. This documentation provides a timeline for when new practices and processes were put in place, using the bureaucratic mode of rules and procedures. With the more than 25,000 email files exchanged among the LAUNCH core team that document the evolution of LAUNCH during the planning and implementation of each of the five embedded interactions, I found that my field notes weren't necessary. The relevant data from my notes is documented in email exchanges, because my observations about LAUNCH for this study fed back into the conduct of LAUNCH in my role as participant. This process itself makes an interesting case for the practice-based approach methodology that the "world is always in the making"(Nicolini et al. 2003: 21) – with my participation in this research influencing the

conduct of LAUNCH, and my participation in LAUNCH influencing the conduct of this
research.

I informed the LAUNCH core team that I was performing research on LAUNCH during
the third cycle, LAUNCH: Energy. Because LAUNCH is a program funded out of taxpayer
dollars, none of my colleagues had an expectation of privacy – other than the government is
required to protect their sensitive data, i.e. name and email, or name and address. By
corresponding with any of the team members who work for the government, core team members
agreed to government scrutiny. The Freedom of Information Act (FOIA) allows citizens to
request government documents, including email transactions; however, the government has the
right to make the determination not to release data for pre-decisional document or proprietary
contract information. The NASA Office of General Counsel approved my request to use email
transactions and internal documents as long as I removed all names and personal information the
data as well; but stated that the government reserved the right not to release email and
documentation used in this study.

My conundrum in the data analysis phase was how to protect the anonymity of the core
team, a small number of individuals. Even with names removed, those of us who took part in the
planning and implementation of the idea of LAUNCH may imagine we know who said what and
when. I took great care to generalize descriptions and to leave out examples that might reveal
specific individuals. During the data analysis phase, I encountered the "unexpected and/or
unexplained" and, quite often, the "path to their resolutions is not always clearly marked"
(Hatton and Plouffe 1997: 108). The data analysis of the email files created a near
insurmountable stumbling block when I set out to use the data as an objective means to assess
group practice – i.e. to verify or refute my observations and assumptions of tension and conflict

as the ignition switch for innovative thinking and new knowledge generation. I originally developed a list of emotion words that I planned to use as text analysis within the email interactions that might paint a picture of group practice sentiment. The flaw of this methodology is that a simple word count, key words, or word co-occurrence misses the context of the conversation (Turian 2013: 4; Cambria, Poria, Gelbukh and Kwok 2014). My innovation journey to retrieve sentiment from more than 25,000 email exchanges over the five embedded cases of LAUNCH mirrors the rise and fall of ideas in group practice. I hit my first of many roadblocks with the sheer volume of the data. My attempt to organize the email into a format I could sort and search proved unwieldy. One option was to select representative email exchanges that demonstrated sentiment. I certainly had plenty of choices over the five cycles of email traffic, but by doing so I would introduce concerns of selection bias or errors of omission that would draw into question the validity of the results (King, Keohane and Verba 2004: 186-88). A path forward using natural language processing enabled me to unlock insights from the email data, though not without significant technology hurdles with the unstructured (non-tabular) email format and locked format files from Microsoft Outlook on my Apple computer. With significant help from a software engineer colleague and friend, I leveraged the AlchemyAPI to conduct sentiment analysis on all five embedded cases of LAUNCH.

AlchemyAPI is an application programming interface (API) that leverages deep learning, the latest computer processing development in multilayered neural networks which marries context and intelligence (Fast Forward Labs 2015, Katz and Boboc 2015). AlchemyAPI relies on "patented deep learning algorithms and infrastructure to expose PhD-grade natural language processing" (Katz and Boboc 2015: 6) through its web-accessible APIs to provide artificial intelligence knowledge insights. I used three AlchemyAPI tools: entity extraction to analyze

keywords, concept tagging to leverage "concept relationships to derive macro-concepts out of recognizable text patterns and keyword/entity associations" (Katz and Boboc 2015: 11), and sentiment analysis, which looks at the text in context to analyze expressed attitudes or opinions, leveraging words used as negations (something is good or not good), amplifiers (very), diminishers (somewhat, little), and intensity (disgusting, incredible) (AlchemyAPI 2013).

To analyze the core team email exchanges for the five embedded cases of LAUNCH, my colleague worked with me to run the data multiple times to ensure I retrieved the most relevant results. The data itself was messy. Each individual email had an embedded chain of historical responses representing the entire conversation in the body text. Therefore, each conversation could be represented multiple times with successive interactions. For example, one negative comment embedded in the historical chain at the end of the email will show up (and be added to the sentiment analysis) on dozens of email with new information added on top; therefore, muddying the sentiment scores. In addition, the sentiment analysis provided one score for the individual email, which included the past conversation, giving an average score. A negative embedded email would offset a positive response to render neutral results. The email had to be stripped of the embedded sections and re-run through the AlchemyAPI.

I leveraged three of the AlchemyAPI tools: sentiment analysis, entity extraction, and concept extraction. Of the three, I only found the sentiment analysis relevant to this study. The entity extraction identified "persons" and provided sentiment analysis about the person based on the context of the email, which intrigued me as a matter of personal interest, but wasn't consistent in the output. Because many of the email formats split first and last name as two entities, meaningful results required reformatting the email based on the to-from headings. I was more interested in the content of the email body, which provides relevance for a measurement of

group practice sentiment. I also used the concept extraction, but the results added no insights relevant to the study. The API tool extracted concepts, like NASA, and provided a web search synthesis of what others say about the concept. I ended up using the first level sentiment analysis results, disregarding the entity and concept extraction results from runs two and three.

Though the results of sentiment analysis provide a non-participant-observer perspective of LAUNCH group practice, it is not without flaws. The technology is its infancy, and is only as good as the data used to train the API algorithm. Let me explain. Advancements in neural networks enable humans to use machines to consume and analyze, simplify, and generalize complex data. Through deep learning capabilities, we can take unstructured data, such as the body (content) of email, and extract meaning from the surrounding context (Katz and Boboc 2015: 5). Inspired by the "behavior of neurons in our brains," computers are taught to "abstract representations of the training data" to classify the data (Fast Forward Labs 2015: 5) – in this case, sentiment classification. In essence, the computer learns context based on what we feed it to learn from – just as humans learn context based on our experiences, education, and culture. What we consume is what we know. What humans give the computers to eat is what they know. The neural network learns from labeled datasets that "model the correct relationships between the input and desired output" but may miss the subtleties in the data where it's not "robust enough to fully describe the problem" (Fast Forward Labs 2015: 49). This, too, is an issue with humans, where we miss subtleties in context of group practice because we're busy applying the context of our training – experiences with someone or something like the current person, behavior, or situation we're encountering in practice. We apply what we know, make potentially faulty assumptions, and churn out bad data (that may create breakdowns in group practice).

Unless we're willing to consume more data, like a neural network, we may stay stuck with a behavioral do-loop – the computer term for executing the same sequence in repetition.

Another limitation to sentiment analysis is the fact that the dataset for this study only includes my email or email forwarded to me. I will not have dyadic exchanges that resulted from alliances of which I was not a participant, unless they were forwarded to me. My experiences, personal background, and education shape my views and spill over into my perceptions (and my email exchanges), which required "explicit reflexivity" (Yanow 2009: 27-78) on my part as a participant-observer. I made every effort to take my impressions apart (Stake 1995: 71) – to dissect them and remove value judgments, but this is clearly a NASA-centric perspective of the evolution of LAUNCH, and my participation as a NASA employee reflected agency priorities. For our partners' perspective, you will see LAUNCH through a different lens; however, the generalizations of group practice and its influence on the rise and fall of ideas, rather than specific LAUNCH outcomes, may be more closely aligned.

King, Keohane, and Verba argue caution against a research design with causal hypotheses where nothing is learned – i.e. indeterminate design (1996: 118). I began the data analysis phase with partial conceptual frameworks that outlined the structural or processual features such as who, what, where; yet as emerging patterns came into focus during the study, new questions emerged. I went back to the data – artifacts and sentiment analysis scores – to slice and dice it in new ways. To ensure determinacy of the research design, I added "new observations from different levels of analysis" (King, Keohane, and Verba 1996: 121).

In order to increase the veracity of the research results, I leveraged the method of data "triangulation" (King, et. al 2004: 192), the practice of collecting "as much data on as many...observable implications as possible" from as many diverse contexts and sources at

different times and places in varying formats (King, et. al 1994: 24). The diversity of data includes group practice sample conversations from email, historical documents, process and practice mapping of actions and interactions, with sentiment analysis of collections of email and summary assessments of email over time within each embedded case of LAUNCH.

In order to meet the requirement by King, Keohane, and Verba for the research to be replicable, I would need to make all the data available to the public (1996:26). With the exception of the formal contract documents, all the other documents are pre-decisional and generally considered internal. With the federal mandates encouraging open data, I may be able release the data results from the sentiment analysis with all the names and subjects removed; however, I'm not sure how meaningful the data is without looking at what the group practice interaction the sentiment analysis is generated from. Much of the historical data is available to the public from the LAUNCH.org website.

Norms of group practice, the constructs and the proposed quantum theory of social dynamics, can generalizable and have potential to contribute to literature on organizational design, collaborative practice, and education and training. Individual behaviors within the group practice, as well, can be generalizable, as the social psychology literature can attest; however, specific outcomes, such as unique ideas or new ways of knowing, from group practices would be difficult to generalize. Broadly general patterns emerge that show disruption in group practice can induce creative environments, without predicting what specific ideas can emerge.

Section 2: How Literature Frames the Research

This section provides an overview of the scholarly foundations for this research; however, the literature references are embedded within each chapter. I organized the relevant literature in four streams of thought for the purposes of readability: knowledge generation,

decision making, group dynamics, and motivations. The categories overlap and can easily be organized any number of other ways. As I embarked on the research analysis, I added a fifth category for the science of particle physics and quantum mechanics to shore up metaphors for the social science of group practice.

Creativity and Knowledge Generation

This study looks at LAUNCH as a pragmatic, abductive, and collaborative engine for knowledge production. The literature that supports this research is organized around the concept of knowledge generation, also described in literature as innovation, creativity, new ways of knowing, and ideas. In addition, the scholarship around collaboration and practice theory provide rich insights. The logic of qualitative social research is comprised of "abduction, deduction and induction" (Reichertz 2014: 125). From a pragmatic point of view, knowledge creation is derived from continual learning, knowing, thinking and deliberating (Turner 1998) through a scaffolding process of building upon what we know (Ansell 2011). The creation of new knowledge, defined by Charles Peirce as abduction, is a distinct process of inference from induction and deduction, ignited by doubt and imagination with no clear resolutions (Reichertz 2014, 2010; Locke Golden-Biddle, and Feldman 2008; Amabile 1990). The ingredient of doubt and surprise for knowledge creation is joined by uncertainty, ambiguity, and conflict within the context of wicked problems (Weber and Khademian 2008; Roberts 2000; Milgram 1990; Hatton and Plouffe 1979); and degree of uncertainty affects the outcome (Scott 1987; Galbraith 1977) and feeds into the garbage can model of decision making (Scott 1987:279-80; Cohen, March, and Olsen 1972). DiMaggio and Powell describe organizational change, or new knowledge, in terms of coercive, mimetic, and normative (1984). Levine and Moreland (2004) identify divergent thinking, with a sprinkling of conflict and disruption, as critical ingredients in creativity.

Csikszentmihalyi (1990) points to idea generation as a result of the social system rather than the individual.

Abduction is a "cognitive logic of discovery" (Reichertz 2010: 219; 2014: 127) and opens "new ways of acting in the world" (Locke et al. 2008: 909) as a result of the breakdown of what we know; which is mirrored by the literature on a practice-based approach to knowledge creation as a radical process of continual destruction and reconstruction as we make sense of what we know through social interactions (Nicolini, Gherardi and Yanow 2003) – the "fluidity of knowing" (Feldman et al. 2006: 89). The practice-based approach offers an examination of group practice through a vocabulary of disruption and conflict that may seem counterintuitive to traditional concepts in organizational theory, yet "breakdowns and 'disturbances' are not only observational occasions for the researcher but also reflexive learning and fundamental innovation opportunities for the activity system" (Nicolini et al. 2003: 23). Practice theorists offer the community of practice perspective where the group engages in activities to recognize and fill knowledge gaps within an environment of mutuality and reciprocity (Weber 2003) built on social contingency factors such as reputation and trust (Burt 2012). These practices create "congealed group-based outcomes, such as their story, symbols or unique terms (Wenger 1998: 59).

Much of the literature on group creativity focuses on the conditions under which creative outcomes can be derived from collaborative activity, including group composition and group processes that enable diversity of opinion and dissent (Levine and Moreland 2004; Paulus and Nijstad: 2003). Kuhn describes paradigm shifts in how we view the world as a result of incongruity (Gleick 2008), disruption (Nicolini et al. 2003), breaks and breeches (Locke, Golden-Biddle and Feldman 2008), and creative abrasion (Leonard-Barton 1995). Conflict is the learning trigger forces individuals and groups to think abductively (Reichertz 2010; Locke, et al.

2008; Nicolini et al. 2003; Peirce 1976). The eureka moment follows chaos and creative anarchy

(Koestler 1990). These new ideas must gain adoption before becoming innovation (Hooker,

Nakamura, and Csikszentmihalyi 2003; Matherly and Goldsmith 1985; Leavitt 1963); but may

require a crisis to overcome group objections and barriers (Kirton 1984).

Decision making

Literature offers a wealth of information on how organizations operate, through a mix of

bureaucratic, institutional mechanisms. Scott defines organizations as a collection of cooperative

systems that integrate contributions of individual members (Scott 1987: 62). Literature points to

the positive aspects of collaborative co-production of knowledge yet field researchers describe

collaboration as "highly complex and fraught with tensions" often due to imbalances in power

(Phillips, Kristiansen, Vehvilainen, Gunnarsson 2013: 1, 7). Power is portrayed most often as the

villain in literature about organizations – omnipresent, according to Michel Foucault (Faubion

1994) with "asymmetric control over valued resources" (Anderson and Brion 2014). Power is a

capacity or influence, a resource or outcome, and/or an individual, dyadic, or group interaction

(Tjosvold and Wisse 2009); it can bring about tyranny, manipulation, and violence or halt and

prevent abuse. Power can corrupt or empower depending on who wields it (Clegg, Courpasson

and Phillips 2006). Organizational power involves three stages: acquisition, the factors that

enable power; maintenance, how power is retained; and loss of power, what leads to the

downfall(Anderson and Brion 2014: 68); and the dynamics and outcomes surrounding power

depend upon an individual's point of view within the collective (Lammers and Galinsky 2009).

Clegg, Courpasson and Phillips offer a construct of power in terms of organizational control over

efficiency and discipline, which leads to hierarchy; where control over commitment (soft

coercion) and contest (productive resistance) leads to polyarchy (2006: 18).

Power has a constructive side, when associated with collectivist values, such as interdependency and the shared pursuit of goals (Tjosvold and Wu 2009), and as a vehicle for reciprocal exchange (Molm 2009) that nurtures relationships based on trust and fairness. Individuals within group practice can use personal power as agents of change (Munduate and Medina 2009). For complex projects, individual or collective influence can ignite change through a combination of power, networked relationships and shared values (Barbuto and Gifford 2009). Nemeth and Nemeth-Brown (2003) identify majority rules as a vehicle to still dissenting voices and shut down creativity. Weick notes that majority decisions are often made by one through a pattern of alliances (1979:16).The "innovation paradox," according to Paulus and Nijstad, describes the necessity of decentralization of power to induce and nurture creativity, but implementation of creative ideas "requires some degree of power centralization" (2003: 338). Bourdieu (1977) notes the transformational qualities of power to change forms.

Scholarship is growing on inclusive, consensus-building decision-making processes (Chen 2009; Levine and Moreland 2004; Rothschild 2000; Iannello 1992; Rothschild and Whitt 1986) as a process of reflexive dialogue, which is a crucial factor in the creative process. Collectivists reject the legitimacy of a central command and rely instead on personal appeals based on shared values and common purpose (Musick and Wilson 2008; Rothschild and Whitt 1986: 54; Perrow 1976). Stasser and Birchmeier, however, view consensus building as the "antithesis of group creativity" (2003: 85) yet concede the necessity of collaboration for new ideas to take root. Chen introduced the concepts of do-ocracy, where participants take ownership of group activities (2009).

Much research is available about attributes of good teams, including the Levine and Moreland concept of complementarity as different yet complementary skills and expertise (2004); and complimentary work styles, disciplines, and theoretical perspectives (John-Steiner 2000). Milliken, Bartel, and Kurtzberg (2003) focus on emotion-laden processes as part of group formation and interaction. "Oppositional complementarity," or cognitive conflict is necessary to "stimulate thoughtful consideration of new ideas" (Levine and Moreland 2004: 168; John-Steiner 2000) and prevent premature conformity to the prevailing views of the majority (Chen 2009: 159). The dissenter in group practice may free the others from forced conformity (Nemeth and Nemeth-Brown 2003). Social psychology offers insights into the effect of cognitive styles on group practice. Peter Suedfeld and Philip Tetlock look at the conceptual/integrative complexity of how individuals affect decision making (2001), and David Dunning distinguishes between uncertainty-oriented and certainty-oriented individuals (2001). The Kirton Adaption-Innovation Theory provides attributes of adaptors and innovators within an organizational setting to provide insight on how each deals with moving new ideas through the system (Mudd 1995; Kirton and De Ciantis; 1986; Kirton 1984).

Motivations

Sociologists look at motivations through frameworks with which we can understand the values and beliefs individuals use to give their world meaning, and the choices they make based on a social situation (Musick and Wilson 2008; Carver 2001). Weick describes this as sensemaking, where the behavior occurs first, and interpreted later for meaning (Scott 1987; Weick 1979). Robert Wuthnow depicts motivations in terms of humanitarianism, happiness, reciprocity, and self-realization (1995) which were extended by Musick and Wilson (2008) to

include altruism, personal growth, social interaction, status, and ideological and material justifications. Dunning describes basic human need to fulfill the desire for knowledge, affirmation, and coherence (2001). Batson's Four Motive Theory included egoism, altruism, collectivism, and principlism (Musick and Wilson 2008, Batson et al. 2002; Bernstein and Branigan 2001). Erik Erikson's concept of *generativity* describes a concern for the "welfare of the next generation" (Musick and Wilson 2008: 67; McAdams et al. 1998:10). Max Weber offers motivation in terms of legitimate authority, value-rationality with shared goals, or a moral imperative (Rothschild and Whitt 1986).

Social capital is a newer thread of scholarship, offering perspective on the connective tissues that bind individuals within group practice: trust; commitment, reciprocity; shared values, knowledge, behaviors (Kadushin 2012; Hooker et al. 2003; Nemeth and Nemeth-Brown 2003; Putnam 2002) and social and cognitive development (Coleman 1990). Key to creativity within group practice is safety, respect, thoughtful consideration of ideas, and open communication (Levine and Moreland 2004; Paulus and Nijstad: 2003). Intellectual capital in a collaborative setting is recognized in literature as diverse talent, experience, and opinions (Levine and Moreland 2004).

Science – Atomic theory

Polkingham (2002) and Born (1989) describe atomic structure and quantum theory, wave mechanics, electron spin, and the relationship between particles and waves trains. Teramoto (2015), Close (2004), and Schwartz (1997) examine atomic particle and behavior interactions at the subatomic level.

Section 3: Significance of this Study

This study supports and contributes to the literature on creativity and knowledge generation, decision making, group dynamics and motivations by providing first-hand participant-observer analysis to the five embedded cases of LAUNCH over five years. This study not only maps the interactions and artifacts produced by LAUNCH, but supplements the observations with sentiment analysis from 25, 000 email interactions among team members. As scholars seek to gain a better understanding of organizational transformation, it is my hope this study may contribute to a better understanding of collaborative practice embedded within a bureaucratic organizational context; but also for self-selected groups who come together for a shared passion and shared purpose – the superordinate goal. For researchers who engage in group practice to generate new scholarship, and for educators who form teams of students to create group projects, I hope this will bring comfort in the discomfort of disruption as the norm of group practice. The constructs provided in the study, as well as the proposed Quantum Theory of Social Dynamics, may provide insight on conflict and disruption as ingredients in idea generation, and help distinguish between the positive nature of disruptive thinking, as opposed to the negative nature of disruptive behavior. Both can lead to the generation of new knowledge and fresh understandings, but the latter requires more emotional energy than the former.

Chapter 2: LAUNCH Evolution Process

Central question: in what way and how has the idea of LAUNCH evolved?

"To survive is to adapt and to adapt is to change" (Scott 1987: 91)

This study is organized into a three-tiered architecture of analysis (Scholz and Tietje 2002: 31). This chapter includes the Level 1 analysis of the case of LAUNCH evolution from an historical viewpoint. Section 1 provides a top level description of LAUNCH. Section 2 provides the big picture perspective of the evolution of the LAUNCH idea over time with process maps and historical context. Section 3 describes the five core processes of LAUNCH, as well as the two evolutionary processes that grew out of the LAUNCH practice, illustrated by Figures 2.2.1-2.2.10. Section 4 includes a process map to demonstrate change over time across the five embedded cases. Table 2.1.1 denotes the evolution of ideas over time.

Section 1. What is LAUNCH

LAUNCH is a "purpose without profit" endeavor hosted by three federal agencies and one private company. A small core team created the idea of LAUNCH to address the wicked challenge of saving the planet through innovative sustainability technology that would enable citizens to thrive, but not at the expense of Earth's fragile ecosystem. We shared the belief that we only have one habitable planet capable of supporting human life – at least within our reach with current technology – and we, as citizens of Earth, need innovative ways to leverage finite supplies of natural resources and to improve human health and dignity. These are, indeed, wicked challenges facing humanity. Weber and Khademian tell us that any effort to address complex, relentless, unstructured, cross-cutting problems will require an ongoing, cooperative effort to access a "broad range of knowledge," as well as the creation of new knowledge (2008: 337). They point out the need for "building collaborative capacity" to generate knowledge (2008: 337) which is, in essence, the core of LAUNCH.

The practice of LAUNCH was conducted by an ever-evolving core team consisting of representatives from NASA, USAID, Department of State, and Nike, as well as contract staff of consultants who were compensated by the U.S. government for their contributions. What is unusual about LAUNCH, at first blush, is the collaboration between three different federal bureaucracies and a private sports apparel company. The first question about LAUNCH is generally: what can these four organizations possibly have in common? The answer: a shared commitment to the discovery of sustainability solutions. Despite our differences and disagreements over time, the core team never wavered on the convening concept that drew us, and glued us, together.

Observers of LAUNCH are intrigued by the collaborative nature of team decision making – though the degree and character of collaboration shifted over time with each cycle of LAUNCH. Unique to LAUNCH, in the beginning, was the co-creation of the idea of LAUNCH among a

team of organizational representatives and paid consultants. The founding attributes of LAUNCH reflected collectivist-democratic principles, such as equality in contributions; shared credit; inclusive decision making; openness to diverse opinions and ideas; generosity and reciprocity; safe, supportive environment for creativity – divergent, convergent, and abductive.

LAUNCH, born out of the bureaucracy, existed as an independent subunit – operating both within and outside the government. Funding for the consultants who worked with NASA employees for the original co-creation, definition, and development of the idea of LAUNCH came from within the bureaucracy and all operations had to comply with federal legislation and regulations. Yet, the LAUNCH team set in place collaborative procedures and processes that defied bureaucratic traditions. LAUNCH existed in an organizational space, somewhere between bureaucracy and participatory-democracy – a hybrid, described by Katherine Chen as one that blends practices (2009: 9), taking organizational elements and attributes to fit the needs of the participants. In practice, hybrid organizations such as LAUNCH, typically mix bureaucratic and collectivists practices (Chen 2009: 8; Rothschild 2000:50). Over time, however, the practice shifted in varying degrees toward a more traditional practice of haves and have-nots, with those in power making decisions on behalf of the group.

Rothschild and Whitt developed an ideal-typical continuum to characterize degrees of bureaucracy and collectivism (1986; Chen 2009: 6; Iannello 1992: 28). The original LAUNCH founders created LAUNCH by drawing from both sides of the continuum: stable, efficient, and fair bureaucratic practices; and flexible, responsible, and meaningful collectivist practices (Chen 2009: 21). The operational and interactional attributes of the LAUNCH practice slid back and forth on the continuum over the years, representing a continually changing hybrid. LAUNCH is fully a government program situated at NASA with consultant subcontract labor shared between NASA and USAID and bound by the rules of their contract agreement, just as the founding organizational representatives are bound by the rules of their employing agencies. In many ways, LAUNCH operates like a do-ocracy, where participants can launch an idea or activity to address a need (Chen 2009: 55), with the understanding that approval would be required if additional federal funds are required beyond the operating budget.

The group practice activities and interactions of the LAUNCH participants are components that have collectivist tendencies and can be identified along the Rothschild-Whitt continuum, which is outlined in Chapter 3 Section 2. Over the five cycles of LAUNCH, the attributes shifted between bureaucratic and collectivist tendencies – as core team members changed, and altered priorities and behaviors shaped the group practices. Chen describes this process as the natural development of organizing practices, where individuals continually make decisions about how to operate (2009: 6).

The unit of analysis for the purposes of this study is the small core team of representatives from the founding partner organizations, as well as the three founding consultant organizations. The disruptions and misalignments experienced through the five cycles of LAUNCH reflect the interactions between the core team members who shaped the idea of LAUNCH and framed the conduct of group practice. The larger LAUNCH Collective Genius, consisting of Big Thinkers, Council, Innovators, and Accelerator collaborators is not part of this study, except in the

description of LAUNCH process. Core team interactions with the Collective Genius influenced the idea of LAUNCH through an infusion of intellectual, social, human and financial capital – more in keeping with normative isomorphism, which changes the organization through education and professional connections (DiMaggio and Powell 1983: 152).

NASA, the initiating agency, held authority for the conduct of the LAUNCH group practice by virtue of the incumbency in the federal government (Iannello 1992: 17; Rothschild and Whitt 1986: 62); yet the NASA core team members set up an egalitarian, consensual, collectivist practice (Rothschild and Whitt 1986, Iannello 1992: 27) within the bureaucratic-hierarchical practice of the federal government, ensuring that all six original participants had an equal voice. The original six co-founders worked through each aspect together, side-by-side – sifting through options, conducting analysis on rules and regulations, taking assignments on a rotating basis to develop concepts to bring back to the collective table for discussion (Chen 2009: 6). Each member drew upon different experiences, capabilities, and perspectives, which created a much richer concept than any one person could have created alone – described well by Musick and Wilson when "working to achieve desired goals, or values, people remain true to an ideal conception of themselves" (2008: 57).

In a bureaucracy, social control is ruled by individuals in authority positions, rules and regulations, and centralized authority, while collectivists reject the legitimacy of a central command but rely on personal appeals based on shared values and common purpose (Rothschild and Whitt 1986: 54; Perrow 1976). From within the bureaucracy, the NASA core team members joined together to form LAUNCH based on shared values – a desire to save the world from destruction of natural resources through innovative technology solutions – placing the LAUNCH group practice on the collectivist side of the continuum. The small core team intentionally created a diverse, heterogeneous group with different worldviews and values who came together with a homogeneity of common purpose.

The idea of LAUNCH (originally called Shuttle BarCamps) required the core team to rethink established ways of knowing (Nicolini, et al. 2003: 7) – in terms of what conference conversations and content looked like. The connection between NASA and sustainability, at the time, evoked a narrative of the negative environmental impact from rocket launches. At NASA, we avoided the topic, if at all possible, especially in a public context. Dorothy Leonard-Barton describes this perspective as "functional fixedness," the tendency to fix "perception of how objects could be used once that use was suggested" (1995: 61). NASA's cultural "mindset" segmented, processed, and retrieved information (Leonard-Barton 1995: 61-62) in terms of human spaceflight mission goals, rather than the larger context of sustainability issues facing humanity. How we know NASA was based on how we did our jobs every day in a "collective, emergent, pragmatic, situated, and historical" way (Feldman, Khademian and Quick 2009: 125); however, through LAUNCH, the NASA founders opened up new possibilities for fresh narratives and creative ways to know NASA.

Through LAUNCH, we positioned NASA as a sustainability leader, shifting what Leonard-Barton describe as the "mind-set trap," a bias of prior experience (1995: 61) – i.e. we know and care about what we know and care about. In fact, before LAUNCH, few citizens knew that

astronauts onboard the International Space Station consume less energy, water, and waste than citizens living in developing countries. LAUNCH provided NASA the opportunity to retell the story of human spaceflight in terms of sustainable systems to support human life – whether on or off the planet. The perspective of Space Station as a biosphere, much like Earth, thriving in the extremely hostile environment of space without access to the resources to sustain human life, served as the foundation for why NASA initiated and supported the LAUNCH group practice. LAUNCH offered NASA a vehicle to demonstrate relevance in the shared search for innovative technology solutions to meet the necessities to sustain human life – clean water, energy generation and storage, access to healthcare and diagnostics, reuse from expended or wasted products and materials, and new material stock to replace expended supplies. The narrative inside NASA shifted as leadership embraced the recognition that living in the extremely resource-constrained environment of space mirrored life on Earth.

Section 2: Evolution of LAUNCH Processes

The evolution of the ideas and practices of LAUNCH, over time, behaved much like a morphogenetic entity that grows, learns, and changes processes to adapt to the external environment (Scott 1987: 82, 91). The original founding team at NASA intended the idea of LAUNCH to leverage NASA's trust brand and problem-solving reputation to engage the sustainability community to bring about new, unexpected innovation outcomes. With the addition of three partner organizations, the core team continually refined LAUNCH through the five embedded cases: water, health, energy, waste, and materials. The learning from each cycle served as the basis for the next round, in a process described by Feldman, Khademian and Quick where "knowing builds on previous engagement and evolves" as participants "engage in actions" (2009: 125). We never reached a state of completion because core team members continued to reshape what we knew, and develop new concepts and processes to fill the gaps in knowledge.

Figure 2.2.1 depicts the five cycles of LAUNCH to demonstrate the continual process to define the challenge cycle topic, develop the content, and operate the Forum and Accelerator. Each cycle overlapped. The post-Forum Accelerator team worked with LAUNCH Innovators up to six months to implement recommendations by Council, while the planning team defined the next topic.

Figure 2.2.1 Level 1 analysis of the creation process for each embedded case of LAUNCH in a repetitive pattern to define, develop, and operate each challenge topic. The cycle cadence ranged from six months to 13 months, reflecting shifts in core team priorities.

LAUNCH Process Flow
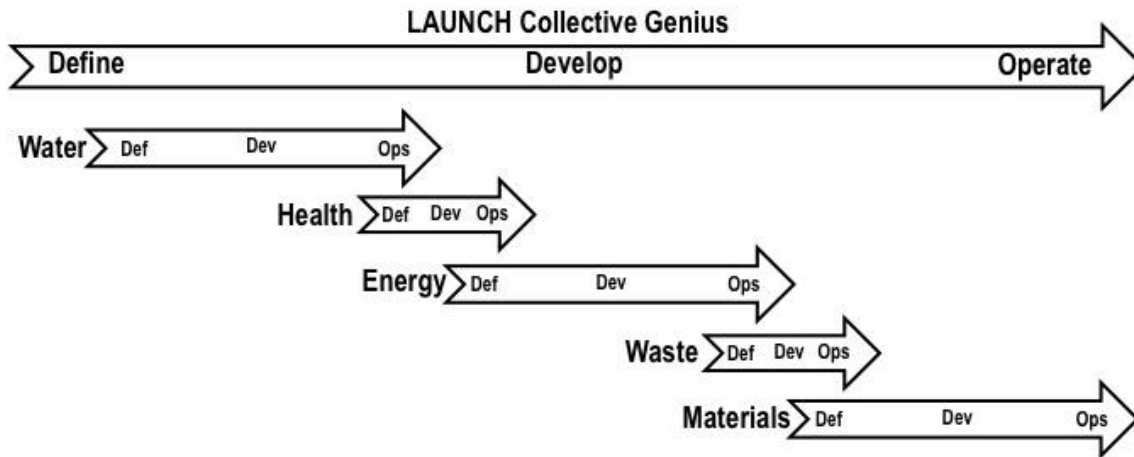
Etienne Wenger asserts that a "community of practice produces abstractions, tools, symbols, stories, terms, and concepts that reify something of that practice in congealed form" (1998: 59). If this is the case, the congealed form of LAUNCH can be found in the processes, which endeavor to create a high-touch experience where each individual has the opportunity to engage fully at any level of the process, depending on the level of interest, expertise or time

available. The founding core team defined five key processes to bring the vision of LAUNCH to reality: 1) convene a sustainability conversation around innovation; 2) identify and select game-changing technologies; 3) invite thought leaders to join the conversation; 4) mix leading thinkers with innovators to ignite new ideas; and 5) accelerate innovation on path to success. For the purposes of this study, the USAID-led Accelerator is addressed descriptive terms for a better understanding of LAUNCH, but is not part of the analysis. Figure 2.2.2 illustrates the key processes that comprise the idea of LAUNCH.

Figure 2.2.2 Level 1 analysis depicting the cycle of five key processes that comprise the original idea of LAUNCH from which all group practice organized around for each of the five embedded cases of LAUNCH.

Idea of LAUNCH: *Original* Creative Processes
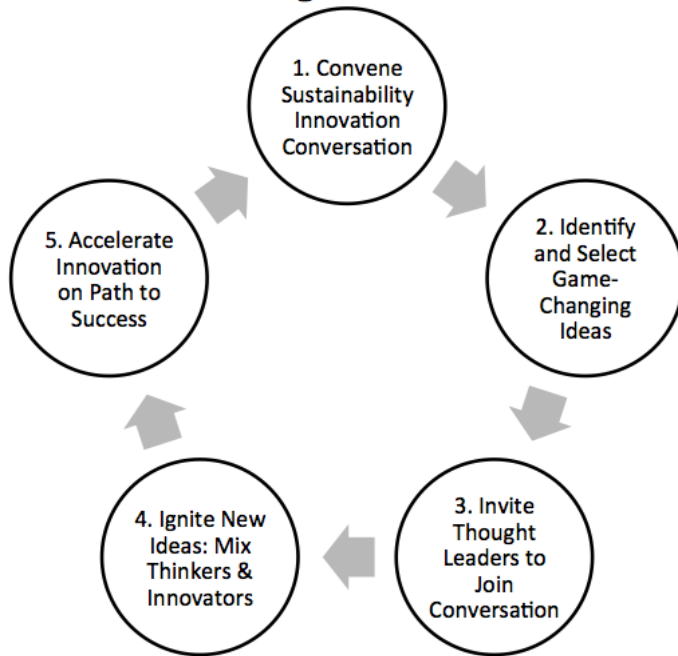
2.1 Convene a Sustainability Conversation

Each LAUNCH cycle topic required consensus among the partners. NASA originally intended each sustainability conversation to focus on the technology that supports human life, both on Earth and in space – specifically International Space Station technology. We weren't looking for innovations to benefit NASA, but rather to tell the story of how space exploration benefits citizens of this blue planet. Before the partner organizations joined LAUNCH, the founding core team selected water as the first innovation topic to coincide with the launch and activation of the International Space Station Sabatier water filtration system, which offered a leap in technology for NASA's regenerative environmental control and life-support system to recycle crew waste-water. We felt this demonstrated relevance that access to clean water is vital to human survival. Once our partner organizations joined LAUNCH, each successive cycle topic involved complex negotiations among the partner organizations to reach consensus, or perceived consensus.

2.2 Identify Game-changing Innovation

The second of the five original key processes is the identification and selection of game-changing technology solutions. Our team researched the innovation field of interest to discover promising gaps in technology ignored by the mainstream technologists and venture capitalists.

In this process, the core team sought to understand emerging areas with the greatest potential to disrupt the status quo. Next, the team researched discipline experts to convene to explore potential criteria for the challenge statement from which to solicit and select game-changing

innovations. The first two cycles, we hosted working group sessions, which we later called Big Thinks.

Figure 2.2.3 Level 1 analysis depicts the second of five original processes of LAUNCH to convene a sustainability conversation around innovation.

LAUNCH Creative Process Cycle: Identify and Select Game-Changing Ideas

Research Cycle Topic

Solicit Expert Input

Develop Challenge Criteria

Post Challenge

Review Innovator Applications

Select Top 10 Innovators
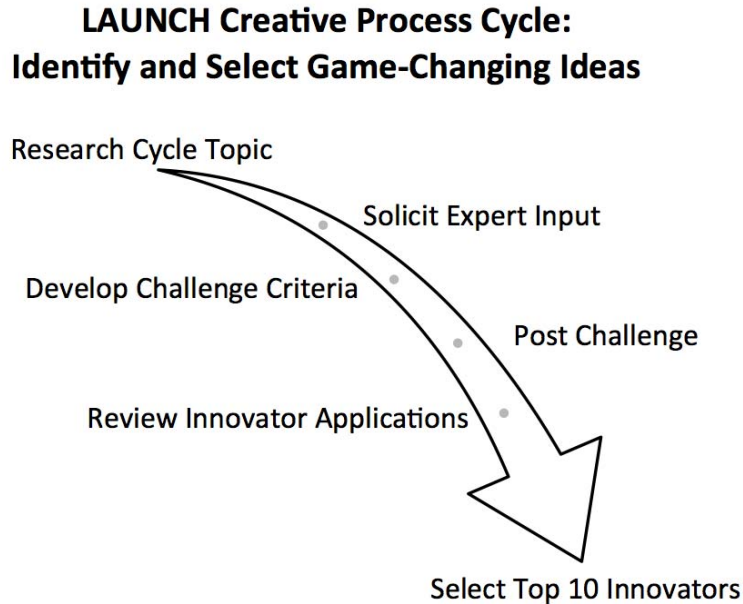
The original intention of the core team was to base the challenge on expertise gathered in these sessions. In the health and materials challenge cycles, we reversed the process. Core team members drafted the challenge criteria internally, and invited experts to validate a draft challenge statement. Once the partner organizations approved the criteria, we reached out to innovators and organizations to apply. Innovators submitted applications for the challenge, to be reviewed by the LAUNCH core team and discipline experts, using an evolving process of expert review panels and technology platforms to manage scoring. The review process matured each cycle, in a trial and error fashion, that began with a simple, single-stage review to a multi-phased review that incorporated scoring for technical and business criteria, as well as individual interviews for the top 20 finalists. Through the internal research component and external challenge solicitations, we identified hundreds of innovations each cycle, and narrowed the field down to the ten with the greatest potential to bring about transformative change.

For each cycle, the core team brought together a group of carefully selected thought leaders, called Council members, chosen to support each successive group of ten LAUNCH innovators. We sought out leaders within multi-disciplinary fields with expertise and experience in industry, government, non-profit, business and technical, design and entertainment, and startups, in addition to the subject matter experts who participated in Big Thinks.

Figure 2.2.4 Level 1 analysis depicts the third of five original processes of LAUNCH, the selection of Council Members.

LAUNCH Creative Process Cycle:
Invite Thought Leaders to Join the Conversation
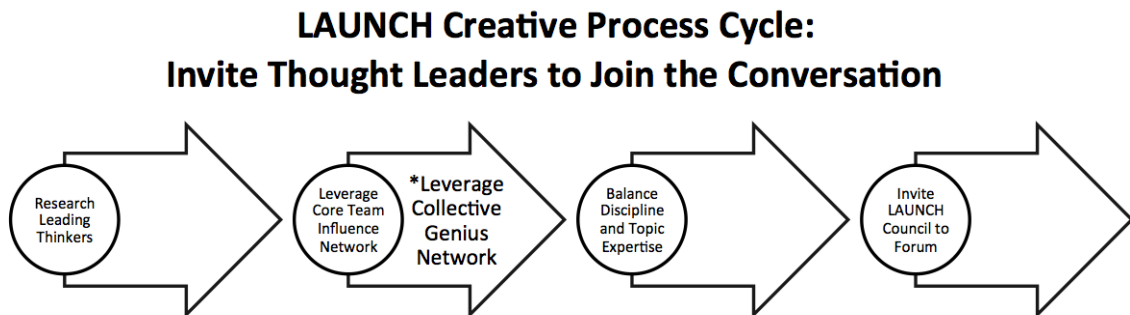
The balance of personalities and expertise for the Council was a highly negotiated, and often contentious, process among the core team members. Once we agreed to a balanced list, we crafted an official invitation signed by the partner organizations to participate in the LAUNCH forum. Council members, with the exception of the first forum, paid for their own travel and lodging – which contributed to the calculation of the LAUNCH Valuation formula, described in Section 2.6.1. They came together at the Forum to listen and discuss the ten innovations and look for ways to refine and rethink their ideas for positive benefits. The diversity of thought convened through the intentional mix of expertise and experience among LAUNCH Council offered fresh insights to the innovation conversation at the Forum, largely in part to the fact that most Council represented unique influence circles. Only during the energy cycle was this not the case. The

core team experimented with the composition energy Council, and set aside the multi-disciplined

approach to favor an innovation-specific approach where experts were selected to match the ten

innovations. In this case, the majority of the Council members knew each other, and the core

team noticed a lack of serendipity among the interactions between Council and Innovators to

uncover unexpected ways to apply or use the Innovations, as discussed more fully in Section 2.4.

2.4 Mix Thinkers and Innovators at the LAUNCH Forum

Of all the processes of LAUNCH, this is the heart of what LAUNCH is all about – the

facilitated innovation conversation that enables "innovator speed dating" with Council members.

Figure 2.2.5 Level 1 analysis depicts the fourth of five original processes of LAUNCH, the
Forum process.

LAUNCH Creative Process Cycle:
Mix Leading Thinkers with Innovators to Ignite New Ideas

| Shape and Refine Innovator Presentations | Prep Innovators – Dry Run | Facilitated Round Table Discussions – Innovator Speed Dating | Collect Council Recommendation for Each Innovator |
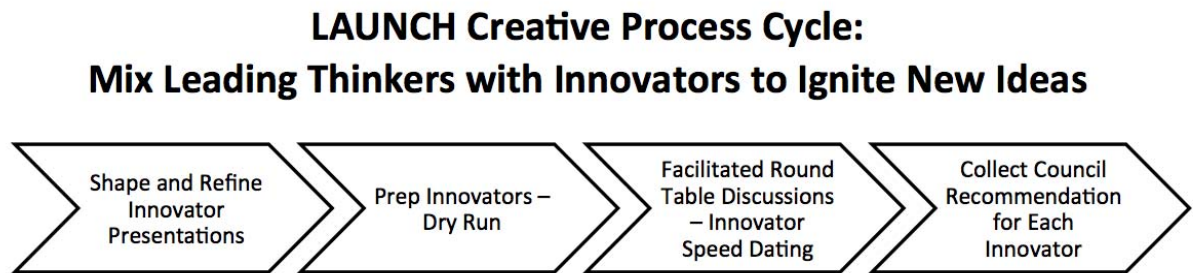
In preparation for the LAUNCH Forum, the core team worked with each Innovator to

craft a compelling story about his or her solution, including a list of "asks"for the Council – i.e.

what each innovator needs to move from the present state to a desired future state. Council

members can give rise to breakthrough opportunities for Innovators – through influence, ideas,

contacts, and resources – *if* the innovation aligns with their organizational needs.

The LAUNCH Forum itself is where the magic happens. Over two and a half days, the

core team facilitates a conversation between the Innovators and Council. On Day One, five

Innovators present their presentations in the morning. In the afternoon, Council is divided into

groups of eight-ten per table for a 30-minute facilitated rapid-fire conversation about the

innovation. Council members ask questions to better understand the implications of the

discovery, make observations about potential applications, or recommend ways to improve it. I

coined the phrase, Innovator Speed Dating, because each Innovator moves from table to table to

"court" the Council members, and potentially connect with a mentor or benefactor. The core

team, in an effort to intentionally design collaboration rather than competition into the process,

placed the five Innovators who were not presenting that day at the Council tables. We found the

Innovators offered insightful observations to support one another in this process.

During these facilitated sessions, the core team recorded notes in the form of

recommendations and follow-on actions, which served as the basis of the Accelerator Plans for

the post-Forum activities. In order to capture the fast-flowing conversation occurring in tandem

at multiple tables, NASA created a task to design, develop and deploy a virtual eavesdropping

tool that allows note takers to collect, tag, and archive comments and commitments in real time,

while displaying them on multiple screens and allowing virtual participation in the conversation

on the web. We called this tool MindMapr. I managed this task through a separate funding

vehicle and outside group practice; then deployed it as part of the LAUNCH process when it was

fully functional. MindMapr was one of the many ideas sparked by the practice of LAUNCH.

2.5 Accelerate the Innovators

Through the Accelerator, the core team helps innovators digest the recommendations and
strategic assessment provided by LAUNCH Council during the Innovator Speed Dating round
table discussions. This is where LAUNCH moves from discussion to results. The core team
creates an Action Plan for each Innovator to suggest concrete steps toward success. The Action
Plan offers highly individual, Innovator-specific recommendations or resources culled from the
Forum conversations, such as a business model, technology mentorship, lab space, legal counsel,
branding or marketing, and/or financial support.
Figure 2.2.6 Level 1 analysis depicts the fifth original process of LAUNCH Accelerator process.

LAUNCH Creative Process Cycle:
Accelerate Innovation on Path to Success

Develop Individual Innovator Action Plans	Mentor Innovators through Action Plan	*Longitudinal Survey to Measure Innovator Progress	*Collective Genius Generosity Bank
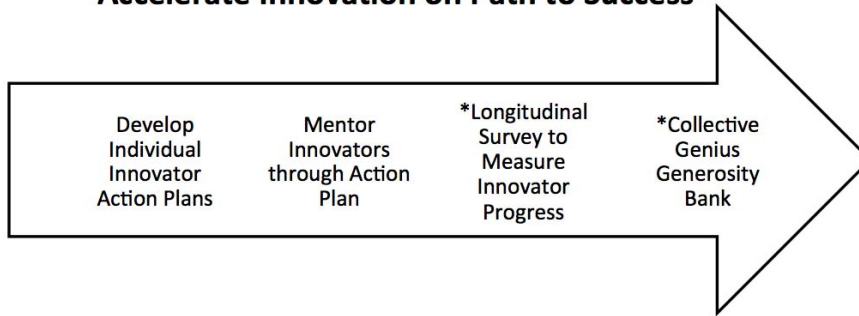
The LAUNCH Accelerator team, a subset of the core team, facilitates the flow of ideas and support between LAUNCH Council, external capacity partners, and the Innovators. Each Innovator is assigned an Accelerator mentor, who guides the four-six month post-Forum process to complete Action Plan milestones.

The evolution of the idea of LAUNCH includes creation of the longitudinal survey to measure progress from the Forum through the Accelerator and beyond, to enable the core team to collect impact stories over time. The team also created the idea of the Collective Genius Generosity Bank, which allows LAUNCH Council and external capacity partners to pledge time, network connections, expertise, venture capital, or business assets that would go into a virtual bank to be withdrawn in connection with an Innovator's Action Plan. For instance, an individual can donate ten hours of mentorship, or 20 hours of lab time. The Accelerator team coordinates how best to leverage the contributions across the ten Innovators per cycle.

2.6 Process Evolution

Each time the core team completed a topic cycle of LAUNCH, which included the five processes outlined in Figure 2.2.1 above, we reassessed what worked and what didn't to improve or enhance the

idea of LAUNCH. Weick describes this evolutionary process as moving from simple to complex through "adaptation and selective advantage" (199:126). Each embedded case of LAUNCH generated new knowledge and new questions.

We continued to refine the description of LAUNCH, through the process Weick calls sensemaking. By cycle five, the core team honed the story to one sentence: LAUNCH is a multistage process that leverages expertise, capacity and resources in a collaborative effort to source, showcase and support innovations that have the potential to transform systems, unlock human potential and create a better world. The evolved process is depicted in *Figure 2.2.7*.

Figure 2.2.7 outlines the evolved process of LAUNCH in cycle five. [Source: Internal documents and LAUNCH.org website.]
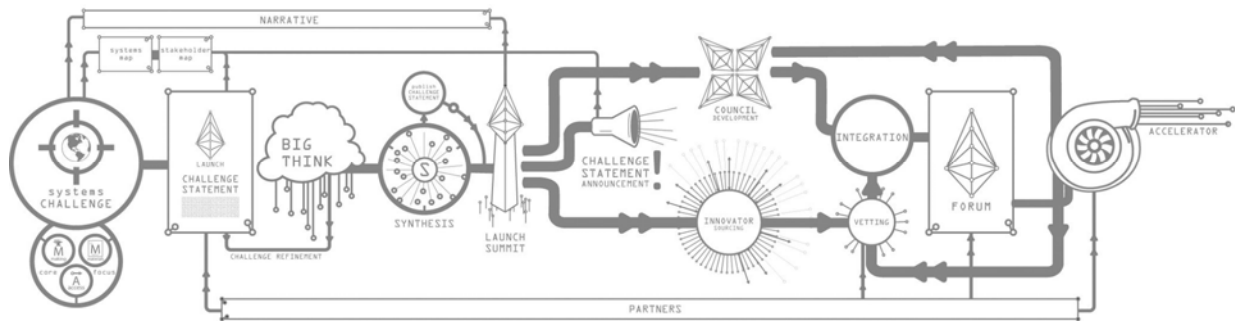
As the new concepts worked, we adopted them as operational components, while other core team members kept working at the edges to define and develop what we didn't know. NASA funding enabled us to test new LAUNCH concepts that might feed back into the core process cycle. The creation of MindMapr, and the concept of the Collective Genius Generosity Bank, both mentioned previously, are two examples of NASA-funded concept developed outside the core team governance. In addition, we leveraged NASA funding to explore two additional processes (depicted in *Figure 2.2.8*) that evolved the idea of LAUNCH: 6) the Shared Value Econometric study; and 7) the LAUNCH affiliates model.

Figure 2.2.8 Level 1 analysis depicts the addition of two core processes, which evolved the cycle from five to seven processes that comprise the idea of LAUNCH.

Idea of LAUNCH: Creative Process _Evolution_
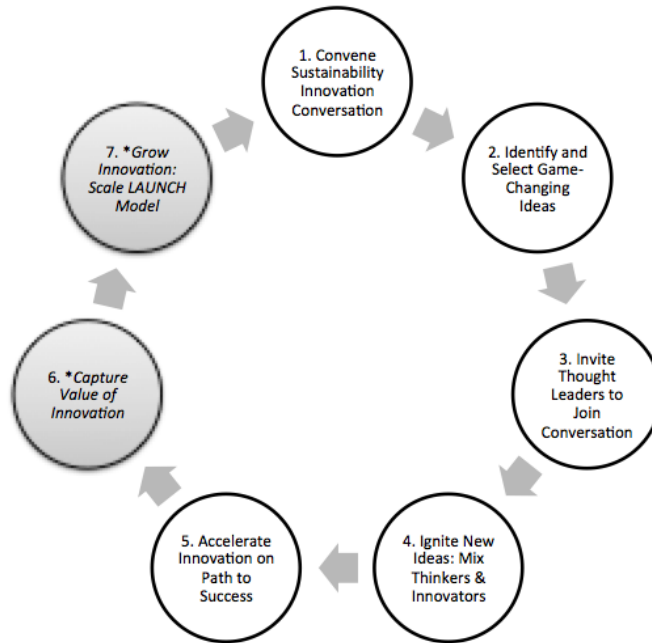
As the LAUNCH affiliates concept took hold, Nike stepped into leadership to develop the model, with LAUNCH Nordic as the first affiliate. USAID funded a few of the core team members to train and support the Nordic team, which occurred concurrently with the fifth cycle. An in-depth analysis of LAUNCH Nordic is not covered in this study.

2.6.1 LAUNCH Valuation

Looking for a way to capture the value of the innovative idea of LAUNCH and the contributions of the larger Collective Genius, we developed an econometric formula to assess the financial value in-kind contributions to LAUNCH – a new way of knowing LAUNCH.

Figure 2.2.9 Level 1 analysis depicts the formula ingredients for the LAUNCH Valuation process.

LAUNCH Creative Process Cycle:
*Capture Value of Innovation

Valuation Study:
Market and Non-Market Values

Return on Investment	Social Capital	Intellectual Capital	Environmental Capital	Collaboration Value
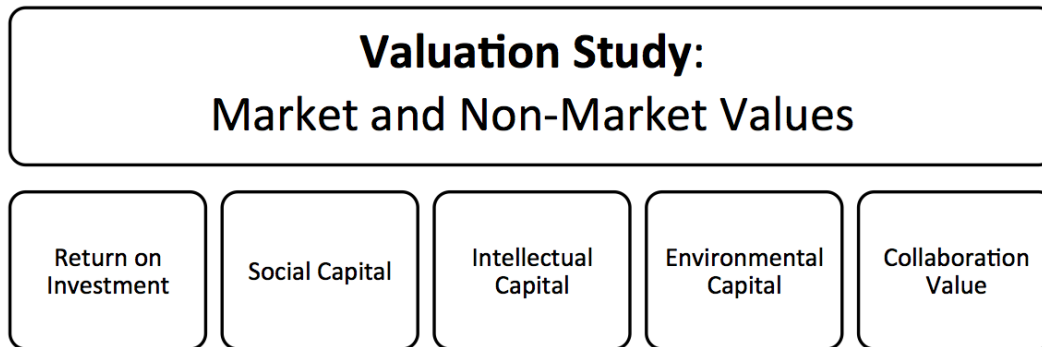
In order to explore the "underlying motivations, approaches, and impact of innovation, collaboration, and sustainability – the core of LAUNCH" (NASA 2012:1), a subset of the core team, funded b

y a separate NASA task, evaluated the impact of LAUNCH based on perceived values provided by Big Thinkers, Council, and Innovators. In fact, this study, which ultimately evolved the idea of LAUNCH, is a direct result of this PhD program. I wrote the proposal and conducted the initial research for a class, then secured funding to conduct the study with consultants from our core team. The model includes market values, such as commonly traded goods and services, and non-market values, such as social, intellectual, and environmental capital. We added collaborative value to the formula to measure LAUNCH Collective Genius outcomes, such as new ideas that emerge from informal chats between Council members (NASA 2012: 2). One example is the idea of Grand Challenges, sparked during breakfast one morning at the LAUNCH Health Forum between representatives from the White House, USAID, and the LAUNCH core team. They discussed ways to take the LAUNCH challenge topics and push them to wider audiences, which led the White House and USAID to create Grand Challenges (NASA 2012: 37). Other agencies followed suit, including NASA.

We developed the initial survey questions to capture ball park estimates of the value of

LAUNCH by asking participants to provide dollar values associated with the investment of their time, as well as what they would be willing to pay to develop a concept like LAUNCH. We initially asked four questions: 1) why did you choose to participate in LAUNCH Big Think or LAUNCH Forum; 2) what was the *estimated dollar value* of the time you invested in attending Big Think or Forum; 3) what *estimated dollar value* would you spend to put together and host a Big Think or Forum at your organization; and 4) if you could add an *estimated dollar value* to what the conversation was worth to you, in terms of new ways of thinking, new connections, potential downstream investments, what would it be. The core team expanded the survey for later cycles. State Department leveraged this model to assign value to their innovation programs.

2.6.2 Reproduce LAUNCH Model

To amplify the innovation outcomes from LAUNCH, the core team devised a replication model, much like a franchise model for a commercial provider.

Figure 2.2.10 Level 1 analysis depicts the evolution process to grow innovation by scaling the LAUNCH model.

LAUNCH Creative Process Cycle:
*Grow Innovation by Scaling the Model

LAUNCH @
World Model

- LAUNCH in a Box
- LAUNCH Nordic
- LAUNCH Schools
- *LAUNCH Cities*
- *LAUNCH Countries*
- *LAUNCH Organizations*

We recognized the limited potential of ten innovators a year to shift global sustainability challenges in a positive direction. We devised a nano-LAUNCH, small-scale model for schools,

cities, and organizations, which required a LAUNCH-in-a-Box toolkit, complete with sample

planning documents with schedules and checklists, challenge and selection criteria templates,

and facilitation guides. We called this the LAUNCH @ World model, which could be leveraged

on an international scale. NASA funded the creation of the toolkit, leveraging all the

documentation created under the NASA contract. LAUNCH Nordic, mentored by Nike, was the

first external group to replicate LAUNCH.

Section 3. Historical Context of LAUNCH Evolution

With the looming retirement of the Space Shuttle program, my office in NASA's Space

Operations Mission Directorate sought ways to bring non-traditional audiences to the Kennedy

Space Center to witness the awe-inspiring, ground-shaking, life-changing lift off experience for

the remaining Shuttle launches. I wanted to reach out to the sustainability community – an

untapped audience, at the time. In 2007, I worked with an innovative team at the Ames Research

Center in California in 2007 to devise creative ways to engage sustainability thought leaders in

an unconference-style format in conjunction with a Shuttle launch event. We originally called the

concept Shuttle BarCamp. Here is an excerpt from an email exchange that ultimately led to the

idea of LAUNCH two years later.

Email excerpt on December 12, 2007 at 7:58 p.m. [Sentiment 0.951617 positive]

"For the late April (but realistically May or later) Shuttle launch, STS-124, [we could] have a ShuttleCamp at KSC. This could be more internal NASA focused, but definitely with a mix of NASA and non-NASA. Would be great to get all the participants to the VIP viewing area. [Founding LAUNCH core team subcontract-to-be] is very serious about bringing this forward, particularly with a sustainability theme. If it is more broadly sustainability, particularly with a tech partnerships spin, he indicated greater involvement with his partners (therefore they could help fund the event). Might not be of as much interest, broadly, to internal NASA folks, though.

*Thoughts? We're all really excited about these possibilities, and are
excited to move forward!"*

Another team member followed up with more explanation of the un-conference, barcamp
format.

Email excerpt on December 12, 2007 at 8:42 p.m. [Sentiment 0.586229 positive]

*"Yes, it would be awesome to do a barcamp AT the NASA area of the launch viewing site
(ie, somewhere a little more special than the main public viewing area), with a lot of
these techies from outside the space community, and open to the folks at the launch as
well. It would provide a fresh, exciting event at the launch for those who are used to
seeing them, as well as a really special experience for the non-NASA attendees.*

*The cool thing about barcamp is that it's very open and flexible. The schedule and
content are determined in real time and are a function of the people who show up. At the
start of the event, a big sheet is posted with empty time slots, and participants fill them in
with topics they want to have discussions about.*

*It could be a really "cool", exciting way to cross fertilize, and low cost to boot (except
maybe some flights?). Those already familiar with barcamp could help to guide those less
familiar with how the event works."*

In 2007, the idea of an unstructured conference disrupted the way we knew and
understood traditional bureaucratic process around conferences, where topics, speakers, and
agendas were scheduled strictly and controlled by the organizers. For NASA's mission
management culture where Space Shuttle and Space Station crews are scheduled to the minute,
the concept of an unstructured event seemed inconceivable to NASA Headquarters managers in
Washington DC.

Due to funding constraints and shifting priorities, the team helping define the Shuttle
BarCamp sustainability *un*conference stopped work on the project. The idea lay dormant for two
years until we received a proposal for a new Shuttle BarCamp design in 2009. Rather than

unstructured conversations around sustainability, the new concept focused on the identification and selection of innovative technologies. An excerpt from the following email exchange is the catalyst for LAUNCH as we know it today.

Email excerpt on May 3, 2009 at 1:46 p.m. [Sentiment 0.529386 positive]

"Attached is the current state of the Shuttle Camp concept. Let's keep this dialog going between us.... [Founding LAUNCH core team subcontract-to-be] is a consulting firm which brings Silicon Valley venture capital, technology and processes into Government and International Organizations. They primarily focus on sustainability-related activities.

We are still discussing the relative benefits of focusing more on people vs. organizations (it currently is people focused). I am sure we will have more meat on this concept as the days progress. We are currently working on this as being a different 'theme' each year. NASA will be a 'producer' of the event, as will other organization/gov't agencies/foundations depending on the theme. We are thinking of starting out the first year as being more intimate and not as big and public, where we will invite many of the organizations that would want to finance the event.

But, what I suggest, is that we work on a concept study for this through August to see if this is something that we want to endorse. If possible, I suggest that we give [Founding LAUNCH core team subcontract-to-be] a grant to perform this concept study (with our guidance and support), allow them to witness a launch and see the facilities. During this concept study we can socialize the concept around to key people [at NASA].

We also agree that we may need a name change, but didn't come up with one yet.

Please let me know your thoughts! Also, please let me know if you think we can financially support them to do the proper planning and analysis this deserves!"

Figure 2.3.1 is the original proposal for the idea of LAUNCH, titled Shuttle BarCamp at the time.

Your mission:

Join the greatest (🧠)s in the world to plan for the next 50 years of sustainability.

Open minds, open solutions.
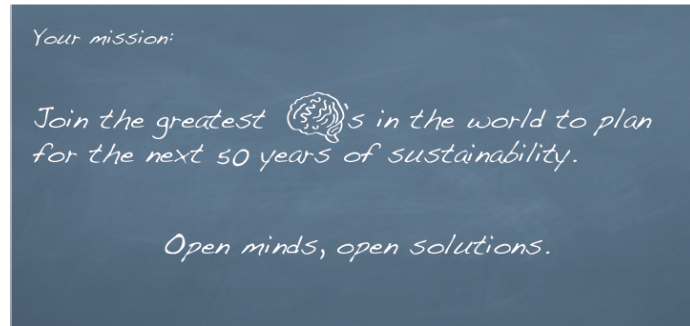
The basic idea

At NASA, we spend a lot of time searching for other planets and life in our solar system. For the time being, however, Earth is the only home we've got, so making sure our planet remains safe is our #1 priority.

Which is why we are inviting 50 of the greatest brains in the world to the inaugural ShuttleCamp, to spend two days sharing ideas, lessons learned and actively brainstorming the next 50 years of life on our planet. Most importantly, though, we will come up with solutions that we can all act upon - together.

(groups) + collaboration = (ideas) and action

Who do we have in mind when we say "greatest brains"? Think entrepreneurs, political leaders, and activists; non-profit professionals, investors, and creatives; technologists, advocates, development practitioners, educators and students. The list is long because we think the best ideas come from groups, collaboration is key to global sustainability, and cross-sector support is crucial to ensure action and real impact.

See you there.

- the NASA team

Big Picture

The ShuttleCamp series is designed to foster continuous collaboration and innovation in sustainability.

Decision gate 1: determine partner buy in, desired impact and leverage.

Decision gate 2: fruitful discussion, follow up items, stakeholder buy in?

Decision gate 3: event successful at seeding solution and actions? Impact and results of first two Shuttle-Camps?

Founding Partner ShuttleCamp

Open ShuttleCamp

Open ShuttleCamp

Fall 2009

Fall 2010

Fall 2011

...
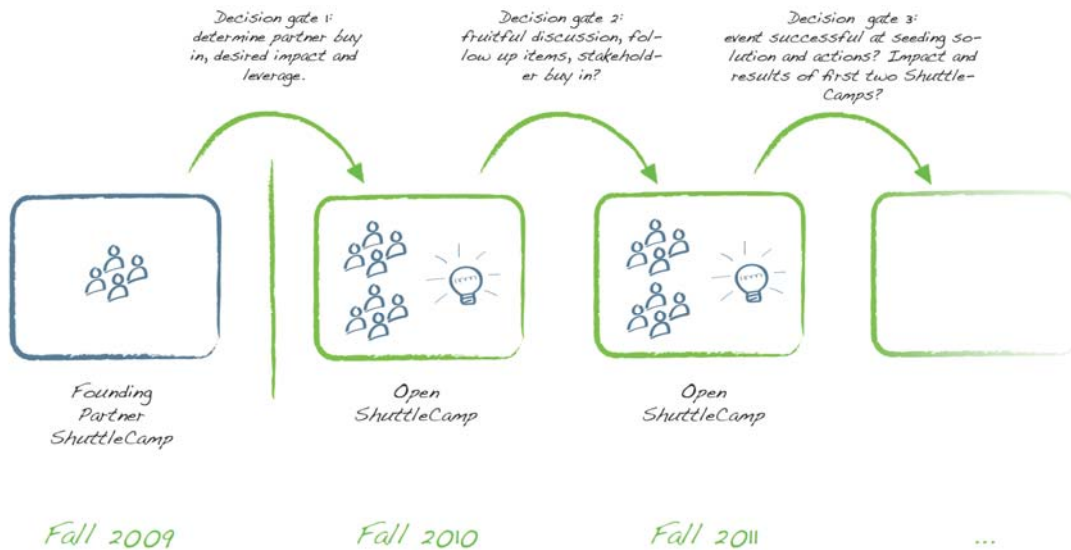
We recognized the value of the new concept design to NASA, and immediately pulled together a small team, as well as seed funding to bring the concept into reality. The original design team included three NASA employees, each representing different functional organizations, in collaboration with two small business owners who brought the new concept to us. To round out the team, we brought in a third small business owner with expertise in event production. We put the three small business representatives on contract with NASA as consultants to help develop the concept. The original intent, from the NASA perspective, was threefold: to stake a position of leadership within the sustainability community as the world's best systems engineers (i.e. problem-solvers); develop non-traditional, innovative partnerships; and demonstrate the connection between human exploration and planetary sustainability.

Figure 2.3.2 represents a snapshot-in-time of the original LAUNCH planning document with shared contributions by the NASA and subcontractor members of the original core team.
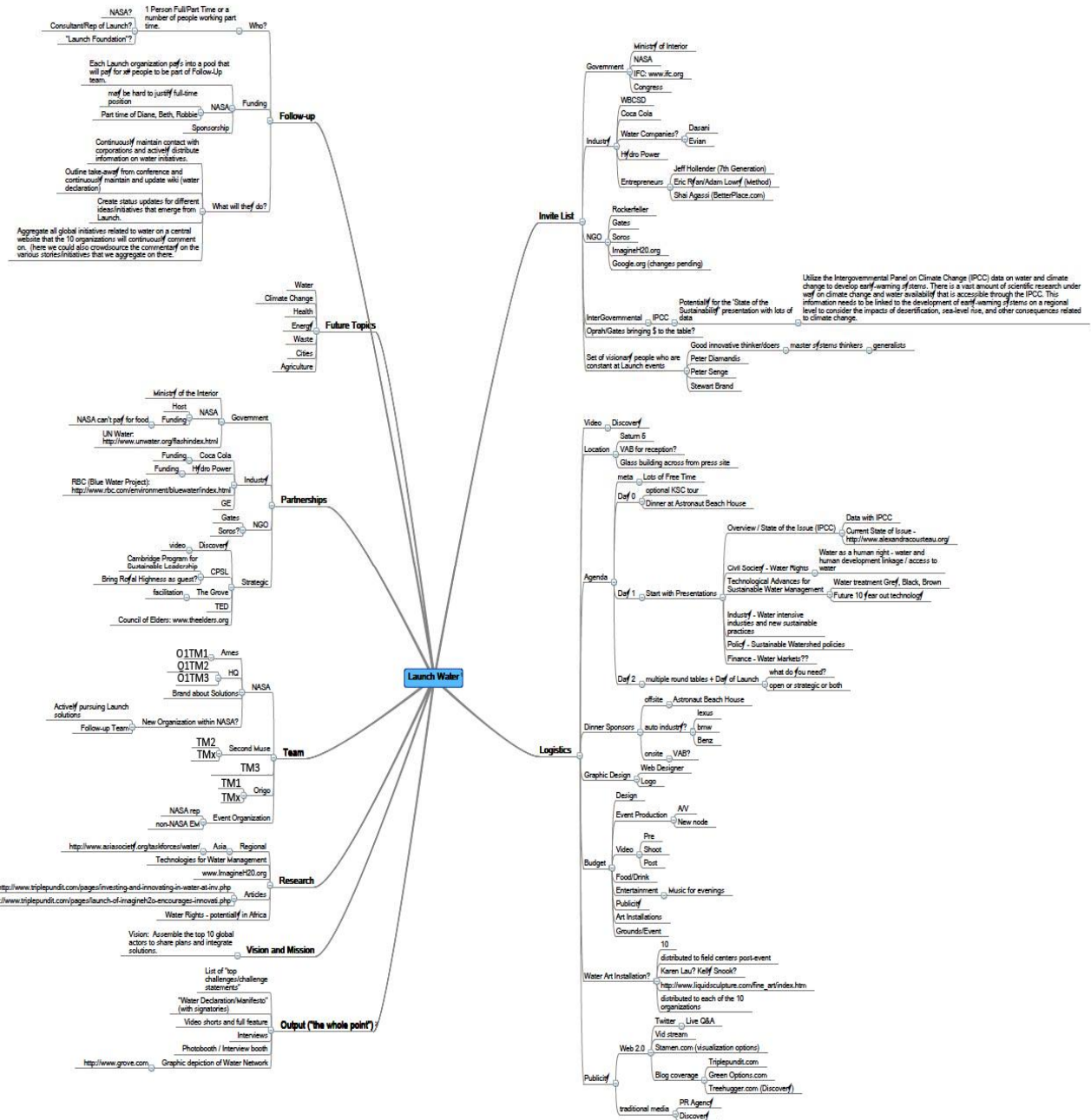
The idea of convening a conversation around innovative solutions to sustainability problems allowed us to poise NASA as a sustainability problem-solver. Sustainability challenges reflect the characterization by Weber and Khademian as unstructured, crosscutting, and relentless problems. Sustainability issues typically have "multiple, overlapping, interconnected

subsets of problems with international implications that cut across multiple policy

domains and levels of government," as well as "hierarchy and authority structures." Each issue is

"inescapably connected to other problems" (Weber and Khademian 2008: 336), such as the

problem of air quality, which can't be solved by one country. In making the case for LAUNCH,

we framed the argument to appeal to NASA leadership using language that evoked the agency's

mission-focused mindset – i.e., we solve problems against all odds. By using familiar terms, we

leveraged the "mindset trap" where individuals "fall into habits of thought" and assess ideas in

terms of "prior experience and successes" (Leonard-Barton 1995: 61).

The founding team created LAUNCH as a NASA initiative within the sprawling federal

government bureaucracy, yet set up LAUNCH as a collaborative enterprise, which we hoped

would "facilitate large-scale change" (Chen 2009: 117). The core team convened around

principles of social good, in terms of finding and supporting solutions to the wicked problems of

providing sustainable resources to support a quality of life for humanity. We created ground

rules: no NASA innovation projects could compete or be selected as one of the ten; no aerospace

company would be considered for partnership or collaboration; and no prize purse would be

awarded to the innovators. We intentionally sought collaborators outside the aerospace

community so that we could learn from different disciplines, create new partnerships, and share

NASA's sustainability story with new audiences. With no NASA-funded project eligible for

selection, we opened new opportunities for fresh ideas from outside our sphere of influence.

Rather than a competitive financial prize, we offered Innovators an opportunity to visit NASA

during the Forum, spend a weekend with technology and industry leaders, hone their

presentation with one-on-one coaching by our team, film a Nike-created professional video,

expand their rolodex with high-powered contacts, and receive a four-six month individualized Acceleration Action Plan.

The original founding team worked together for ten months to create the five organizing processes that comprise the idea of LAUNCH (Figure 2.2.2), as well as the negotiation of meaning (Wenger 1998: 72). We grappled with crafting the story of LAUNCH in a NASA mission context so that NASA leadership would understand the value of deploying resources with no guarantee of return on the investment to NASA. This activity demonstrates Weick's sensemaking process to give meaning to what we've already enacted, i.e., "how can I know what I think until I see what I say" (1979:133). He describes a reality where the individuals and organizations impose belief maps through which they can see and understand the world (Weick 1979). Weber and Khademian describe this reality as "socially mediated information (2008: 338) based on unique meanings each participant gives to specific information (2008: 338; Nicolini et al. 2003). Each of us brings expectations about how knowledge will be applied in accordance with our experience, interpretation, analysis and previous conversations in own thought networks (Weber and Khademian 2008: 338; Feldman and Khademian 2005).

From a NASA perspective, my interpretation of Weick's "I'll see it when I believe it," (1979:135) looks closer to "I'll get it (your idea) if and when I believe it fits into my organizational charter (mission and priorities)." Our team spent a good bit of time shaping the sensemaking arguments so that NASA leadership would "get it" and give us a blessing to go forward. Here is an excerpt from an email exchange during the storytelling creation process to determine how we presented the narrative to our leaders.

Email excerpt on September 22, 2009 11:38 a.m. [Sentiment 0.468935 positive]

"Here is what I would want to see if you were convincing me. We need to tell "what's in it for me" story so that we clearly make the connection that NASA, the problem-solver, can bring our solutions to Earth and gain benefit with the public for becoming relevant.

I took out the budget chart. We need buy-in for the LAUNCH concept — details on budget come later. We'll probably need a ballpark estimate, if asked. I wouldn't offer it. But I can be convinced otherwise.

I moved the Team to the bottom. It's not about who is working this, but what we get out of it and how this will work.

We may need to provide examples of TED-like events to show precedence. Everyone loves a winner."

We refined the story for months. The initial presentation material to the story about

LAUNCH is outlined in *Table 2.3.1*.

Table 2.3.1 provides sensemaking (Weick 1979) attempts by the NASA LAUNCH team to describe LAUNCH within prevailing organizational belief maps. This draft language comes from internal NASA planning documents. The language evolved, as did LAUNCH. [Source: internal NASA planning documents.]

Why NASA?	
NASA has a unique brand, approach to solutions and problem solving, demonstrated innovations and unparalleled vantage point that will be utilized for the realization of a sustainable future on Earth.	
Solving Complex Problems	NASA has demonstrated an unparalleled ability to tackle massively complex and ambitious goals to forward the human endeavor. NASA brings diverse talents need to solve complex problems to collaborate effectively to arrive at one unified solution. This is a tremendous strength in NASA's role as the founding partner of LAUNCH, and in leading a whole system of stakeholders in building integrated solutions for a more sustainable existence on Earth.
Innovation	As a result of its decades long development of technology in robotics, intelligent systems, satellites, human spaceflight and data analysis, visualization and modeling, NASA has a powerful and intelligent network of scientists and engineers. NASA has engineered solutions from water recycling to efficient solar cells to meet the needs of space exploration.

Sustainability	NASA has 14 spacecraft currently orbiting the Earth monitoring the dynamic Earth environment. With ~4TB of new Earth Science data available each day, NASA's scientists and engineers are at the forefront of understanding our global system.

As the founding partner, NASA will provide overall guidance and strategy for the vision and mission of LAUNCH in its initial phase. As such, it will integrate into the LAUNCH program in an organic and meaningful way leveraging its core relevancy as it relates to sustainable development.

The evolution of the sensemaking process is reflected by the evolving taglines. The original Shuttle BarCamp proposal was tagged: *"Open minds, Open solutions."* As the team refined the focus, we shifted to *"LAUNCH: Collaborate. Innovate. Accelerate."* We realized the tagline could represent any generic effort, so we refined it further to *"LAUNCH: Accelerating Innovation for a Sustainable Future"* which we used with NASA management and throughout the first cycle. We ultimately shifted to *"LAUNCH: Collective Genius for a Better World."*

Four months into planning the conceptual design of the LAUNCH idea, we received an unofficial blessing from NASA leadership, followed by a verbal blessing six weeks later. The following is an internal email building the case for LAUNCH by informing mission management about progress.

> *Email excerpt on November 4, 2009 at 4:41 p.m. [Sentiment 0.643922 positive]*
>
> *"[The NASA team] met with [agency leadership] this morning to brief them on the status of our LAUNCH: Water project. (See overview below).*
>
> *We've been working for months to pull together the details on how to move this concept forward – working in partnership with [internal NASA organizations]. We're at a point where we need official blessing from the front office to start moving out with invitations to Council Members and Innovators.*
>
> *[NASA front office staff] will discuss the project with [Administrator and Deputy] this week to give us the go-ahead...or not. They were extremely receptive to the link between the LAUNCH: Water project and the front office priorities: 1) relevance, 2) innovation,*

3) environment. They liked the non-traditional partner approach (we're steering clear of aerospace industry folks).

[NASA leader] wants us to include key intergovernmental folks (who are on our invitation list) to ensure we bring in govt participation along with industry players.

Once we get approval, we'll need to work with Leg Affairs (target of 1-2 Members of Congress on LAUNCH Council), External for foreign representatives serving on Council, and Public Affairs for media advice and NASA TV resources/video production. We'll need to work with [NASA lawyer] to review the partner/sponsor strategy.

We're encouraged by the TOP-level enthusiasm we're receiving for this concept through our informal contacts with leading sustainability innovators, venture capitalists, policy planners, and more. We're really excited to proceed.

Here is the quick overview:

LAUNCH is a global initiative to identify and support the innovative work poised to contribute to a sustainable future.   Society's challenges appear to accelerate faster than solutions. Let's put on the breaks.

In labs, garages, companies, organizations, and charities around the world, visionary work is being done to meet the challenge of a sustainable future. LAUNCH, with support from its Founding Partner NASA, has been formed to help these innovators accelerate from where they are to where they need to be – as they strive to achieve success. LAUNCH will initiate a global search for and channel these innovations into key challenge areas that are the backbone to securing a sustainable future: water, air, food, energy, mobility, and sustainable cities.

The needs of these nascent organizations are many and varied: re-imagining their business models, accessing capital/investment or charitable donations, refining their designs and engineering, linking to a new technology partner, securing key management, scaling their operations, gaining advocacy, opening up new markets and programs. The difference between failure or stagnation and success are often small pivotal changes in approach and the ability to move quickly and confidently to secure key allies and partners

To meet these needs, LAUNCH has envisioned a new and unique approach: a not-for-profit incubator —what we call the LAUNCH Accelerator — that leverages the collective expertise and networks of visionaries and experts who are part of the LAUNCH organization. LAUNCH will identify 10 innovative, often disruptive world-class ideas, technologies or programs that show great promise in making tangible and impactful progress for society in each of the key challenge areas. These innovators will be invited to be part of the LAUNCH program which includes a high-level event where they present their innovative ideas to LAUNCH and engage in a collaborative discussion.

The event however, is just the starting point, post-event the Innovators will become part of the LAUNCH Accelerator, an on-going incubator which utilizes the collective power of the networks, resources and expertise of the LAUNCH organization to create and execute an action plan accelerating them from where they are to where they need to be to achieve success

At the heart of this effort is the LAUNCH Council — a world-class body of entrepreneurs, venture capitalists, scientists, engineers, leaders in government, media and business who will help to guide these innovations forward. The LAUNCH Council is a deep and varied group of peers — each accomplished and visionary in their own work — each contributing to the cumulative power and wisdom of the LAUNCH network.

The inaugural LAUNCH: Water will be held against the backdrop of Kennedy Space Center and the launch of Space Shuttle mission STS-129 on February 10th to 12th, 2010 a collaborative conversation between the participants including the LAUNCH team, the LAUNCH Council and the 10 selected Water Innovators who have been selected quality, availability, or use-efficiency of water. with the intent to contribute tangible progress to some of the greatest water challenges facing our planet."

Email excerpt on December 2, 2009 at 5:09 PM [Sentiment 0.310909 positive]

"Several weeks ago we briefed [NASA leadership] on the LAUNCH:Water project (in partnership with [NASA organizations]). [NASA leader] briefed [Administrator and Deputy] . We expect their approval to move forward this week.

What's this all about? We're leveraging NASA's brand as "problem-solvers against all odds" to bring together top-level folks to address World sustainability issues (ones that NASA faces every day in space). We are the ultimate green machine in how we live on Station — we create our energy, recycle our waste water, and cleanse the air we breathe — all problems faced here on Earth.

With this program, we apply, here on Earth, our problem-solving skills by hosting experts for a conversation around innovation. Benefit to NASA? RELEVANCE! We don't promise to solve the world's problems. We host the conversation to bring together key entities who MIGHT solve the problem.

We ([NASA Mission Directorate) are sharing the burden with [NASA organization] to seed the effort. We'll ... fund facilities support at KSC to host this at the STS-131 launch. [NASA organization] will cover contract costs out at Ames for logistics/event planning.

We're keeping this to 50-ish participants. The first one will be our prototype event. We'll learn from it, and adapt for LAUNCH: Energy, LAUNCH: Air, LAUNCH: Transportation, etc."

With the official approval in December 2009, NASA entered into conversations with

State Department and USAID to leverage their interest in joining the LAUNCH practice. From

an organizational perspective at NASA, legitimacy from two respected agencies placed

LAUNCH in a more favorable light among some of the risk-averse NASA managers. Though we

had official blessing in our back pocket, we still encountered fierce pockets of internal resistance.

LAUNCH represented uncertainty; therefore, risk of failure – an example of Leonard-Barton's

"functional fixedness" (95:61) where individuals see new things through old eyes. The NASA

team worked to ensure leadership understood what we were doing with LAUNCH. Building

support in the organization preemptively addressed bureaucratic resistance to new, out of the

norm initiatives.

As we held discussions with USAID and State Department, Nike approached us to

collaborate with LAUNCH as a means to seek out promising new technologies. The excerpt of

the email below is our initial introduction to our soon-to-be fourth partner.

> *Email excerpt on December 29, 2009 3:06 p.m. [Sentiment 0.640691 positive]*
>
> *[Nike contact]mentioned the LAUNCH project, and we realized that there is potential for much broader and higher level of partnership between our teams than we had originally envisaged.*
>
> *The transparency portfolio is one of Nike's Sustainable Business & Innovation (SB&I) Lab's three portfolios. One of the other two, the one that directly aligns with LAUNCH, is focused on resource sustainability – around identifying / incubating new business models that can reduce our carbon and water footprint by 50% in 5 years. At the risk of a long email, it may be helpful to give you a little context about the SB&I lab before we chat.*
>
> *The Nike SB&I Lab was founded in July 2009; it has a core team based in the US (Portland, OR) and EU (Amsterdam / London) and has strategic partners/ advisors across several universities and institutions. Much like your team it appears, the Lab is built upon three beliefs: That humanity is on an unsustainable trajectory in how we consume our resources and impact our planet; That businesses, especially the consumer goods industry has a large role to play in systemic solutions, and that this will need new business models; That no single organization or company is equipped to address these*

concerns alone, and we will need to convene and collaborate towards a sustainable future & economy.

The addition of Nike as the fourth founding partner raised more eyebrows than lowered at NASA, but created greater interest in the concept of LAUNCH in non-NASA circles. The practice of LAUNCH grew from a six individuals – three NASA civil servants and three consultants – to four organizations, three federal agencies, and one private company. Three months after bringing on the three founding partners, we hosted our first LAUNCH Forum on the topic of water.

We had not originally intended to seek out LAUNCH technologies for NASA. Our founding team conceived of the outcomes – i.e. LAUNCH innovations – as a products of public good, the government version of corporate social responsibility. To our delight, NASA soon recognized the value of unexpected discoveries resulting from innovator solicitations outside the aerospace community. LAUNCH grew into an innovation platform with an unintended return on investment to the agency. Not only did LAUNCH sever an valuable innovation platform to discover new talent and technology, it also became a testing ground for innovative governance principles. Observers and participants alike told us the unique intersection of NASA, Nike, State, and USAID created interest in LAUNCH. The non-traditional public-private collaboration created a new way of knowing the government. Indeed, the paradox of a bureaucracy creating an innovative collaborative practice became a beacon for the curious, who wanted to engage with us to gain new perspective on the possibilities of accelerating innovation in a novel way.

By the time we hosted our first LAUNCH forum, we built a community of practice through the "sustained pursuit of a shared enterprise" engaged in the social production of meaning (Wenger 1998: 45, 49) – i.e. the creation of LAUNCH. We named our new LAUNCH community the Collective Genius, representing Council, Innovators, Big Thinkers, and

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LAUNCH core team. The Collective Genius reflected a significant collaborative capacity to generate knowledge – with voluntary intellectual capital infused into our collective practice, offering different perspectives, values, and capacities to deploy against our topic challenges. Those who participate in LAUNCH, tend to "share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems" (Wenger and Snyder 2000: 140). In essence, the practice of LAUNCH gave rise to a "living repository" of new knowledge that was dynamic and socially constituted (Wenger, McDermott, and Snyder 2002: 9-10).

The LAUNCH core team also experienced shifts in behavior that created discomfort and tension. The success of the idea of LAUNCH, named the 11th Innovation by the water cycle Council members, gave rise to disagreements over credit, contributions, and unilateral decisionmaking. The following email demonstrates signs of stress-fractures in LAUNCH group practice after the success of the LAUNCH water forum, highlighting "disturbance-producing" behavior contradictions that introduced conflict (Nicolini, Gheranrdi and Yanow 2003: 17) into the collaborative foundation of LAUNCH.

Email excerpt on March 19, 2010 9:08 a.m. [Sentiment 0.18777 positive]

"[Core team member], you busted your backside to make Launch Water happen. You are a genius at bringing the right folks to the table, setting the tone and making magic happen.

Yet what I observed disturbed me. I felt like you were holding court. I watched you shut down [other Core team members] time and again — starting with the innovator prep. If [another Core team member] made an observation or a comment, you overruled it. Often with a wave of your hand. If I had been [Core team member], I would've feel belittled.

I don't know if you were aware of this. I point it out because I observe how people interact.

I see six of us as the Launch team. The others are all valuable, but we're the glue — the creators. Launch wouldn't have happened if any one of the six of us had NOT been in

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play. I see [Core team member] as incredibly valuable. Without his contribution, I'm not sure we would have pulled this off.

I also observed [Core team member] come talk to you about the future of Launch and whether or not he had a role, and I heard you reassure him you'd thought about how you'd be going forward and you had a role for him. Very odd to watch that scene play out. Rather than feeling like a team decision, it appeared you were calling all the shots. (I'm not saying that this was your intent, only that I interpreted the scene this way.)

I really struggled with why all this bugged me, since the event was such a smashing success. We pulled it off. Everyone was amazed.

You are amazing and I can't sing your praises enough. Other team members are equally as valuable, though, for bringing different gifts to the table. We should all feel part of the success. And in the end, if [partner leadership] hadn't agreed to this concept, we wouldn't be at this point. So hats off to them for catching the vision and allowing us to move forward with this."

This exchange is a foretelling of many more tensions and conflicts to come. The fact that the LAUNCH water cycle exceeded all expectations served to perpetuate, even reward, a get-it-done-even-if-relationships-break behavior. Weick points out that this may be inevitable when members of a group practice contribute to an outcome that is judged as a whole, rather than by its parts. "Individual members have no way of knowing how adequate their individual contributions were...and they will repeat their actions even if they were actually irrelevant or detrimental to the outcome" (1979: 127; Cohen and March 1974:200-1; March and Olsen 1976: 17, 57, 150). Tensions within the LAUNCH group practice persisted over the five embedded cases of LAUNCH, as the core team stretched and strained between seemingly opposite spectrums of creativity versus control, and exploration versus expediency, while oscillating between *flat* shared decision making and a *tall* top-down process – all discussed more fully in Chapter 3. The effect of group practice tensions and pressures on LAUNCH is discussed in Chapter 4, and the effect on the rise and fall of ideas is discussed in Chapter 5.

Once the LAUNCH model proved successful, the LAUNCH core team entered into agreements with non-government capacity collaborators: IDEO for design thinking counsel, Vestergaard Frandsen for health-related innovation acceleration, Innocentive as an innovator selection platform, Architecture for Humanity for revalued design of products, and NineSigma for innovation topic research and network communications. The Office of Naval Research joined LAUNCH for the energy and waste cycles by contributing funding to enhance the innovator selection platform to give them insight into the most promising technology through the challenge applications. As we added new team members and organizations to our group practice, the idea of LAUNCH evolved to reflect new and different voices in the deliberations that shaped the design and delivery of LAUNCH processes. These voices also changed the story of LAUNCH, as each individual had an opportunity to "introduce contradictions into retained wisdom, thereby destroying it" (Weick 1979: 126).

In the original planning of LAUNCH, we envisioned sharing funding responsibilities between NASA and USAID by trading off contract management every other cycle; however this was not the case. NASA funded the design and development of the LAUNCH concept and the first forum. USAID managed the contract for the post-Forum LAUNCH water accelerator effort and planning for cycle two, health. After cycle two, NASA assumed contract management for the next three cycles, energy, waste, and materials. Cycle two was a condensed schedule in an attempt to complete two cycles each fiscal year. Under USAID contract management, more emphasis was given to efficiency and clean lines of authority, reflecting a tall organizational structure, as discussed in Chapter 3. The distributed, collaborative nature of the original three subcontract tasks under NASA shifted to one task awarded to one individual, with explicit

authority to coordinate the partner organizations and determine funding and assignments for his fellow consultants.

With these changes, so changed the character of LAUNCH group practice. With efficiency as the priority, collaborative deliberation received less attention. No overt decision had been made by the core team to evolve LAUNCH group practice from collaborative to hierarchical. The shift happened while we weren't watching. The effect resulted in the formation of subtle and not-so-subtle alliances around the new center of power, the USAID contract structure. As Weick points out, "effective influence in the large collectivity depends on alliances among a very few members" (1979: 16); and in the case of LAUNCH, it only took a few strategically placed team members allied together to overrule or mute the core team majority. In fact, what appeared to be majority opinions were often minority decisions made by one or two, "made possible by the pattern of alliances" in the group practice (Weick 179: 16). For example, the challenge language for cycle two was predetermined by two partner agencies prior to the working group session with experts, as opposed to the cycle one process where the core team listened to experts then developed challenge criteria. The topic did not reflect NASA priorities; yet was chosen despite our protests. The email excerpt below is in response to a group email with the draft LAUNCH health challenge statement entitled: Children's Health.

> *Email excerpt on July 2, 2010 at 9:12 a.m. [Sentiment -0.0286483 negative]*
>
> *"When did we decide healthy children was our focus? For NASA, the food sustainability, crew health/healthy bones through exercise--affects osteoporosis on Earth, radiation prevention (sun exposure on Earth), etc. Children's health is more of a stretch for us.*
>
> *Won't we define the issues at the working group session, then create the challenge statement?"*
>
> *Response: July 2, 2010 at 9:25 a.m. [Sentiment 0.00695474 positive]*

"Yes, the working group will have crack at challenge statement. but partners wanted a working version that was 70-80 percent there for working group to react to and to refine.

Addressing your concern re: youth focus. Understood..I think the feeling is that the lifelong aspects are primarily dialed in by 19 so the way to improve overall quality of life/health for all stages of life is to get food/nutrition, exercise and preventative care right in youth."

Response July 2, 2010 at 11:15 AM [Sentiment -0.306667 negative]

"I just hope we're not making this Launch: child-health."

Despite reassurances to the contrary, the document given to the health working group a few days later was titled: "LAUNCH: Health, Healthy Youth" with a problem statement that focused on children and youth. **"**Ensuring the health of children has a seemingly simple blueprint: Deliver to our youth access to nutritious food, modest levels of recreational activity to burn calories and create strong muscles, and basic preventative primary health care" (Internal NASA document, 2010). What is interesting about this email exchange is the statement in the July 2, 9:25 a.m. email that the "*partners* wanted a working version that was 70-80 percent" ready. Another interpretation could be, the *partners who have allied together to push this topic* wanted the challenge pre-baked, rather than allowing the working group members to provide guidance on the best place to focus our attention – demonstrating coercive isomorphic pressures in form of collusion, as described by DiMaggio and Powell (1983: 150). In addition, some of the partners insisted that all innovations demonstrate the capacity to reach millions within two to five years; yet NASA was more interested early stage technology that we could adapt to support six humans onboard the International Space Station. This challenge topic embroiled the NASA core team members in weeks of internal organizational discussions to justify and sensemake the decision; as well as lengthy negotiations with the LAUNCH partner representatives over the language refinement to insert NASA-friendly innovation criteria. In the end, the NASA team

crafted a NASA-friendly story of relevance to promote the negotiated *phrases* of the health

challenge that sought innovations that mattered to us, rather than the challenge as a whole.

The idea of LAUNCH evolved, through the challenge process, in a way that introduced a

significant barrier for NASA's participation. The "social contract" (Weick 1979: 18) under

which LAUNCH was created, i.e., collaborative deliberation around the shared search for

sustainable innovations, had been breached. If the NASA core team members had not devised a

way around the impasse, NASA's support for the endeavor could have ended in cycle two. In

retrospect, the final highly negotiated challenge statement attracted three game-changing

LAUNCH Innovations which NASA is currently pursuing for space applications. Because of the

shared belief the NASA founders had in what LAUNCH stood for (rather than how the team

interacted), the group practice survived the challenge crisis.

The LAUNCH health cycle was a success from the external perspective. LAUNCH

appeared vibrant, productive, and effective; making the case for the unofficial top-down decision

making style by some in the core team. We stretched our understanding of each other and the

larger Collective Genius community, and created new ways of knowing how to innovate. As a

collective, we "influence(d) each other, coevolving or changing in tandem" (Chen 2009: 117);

yet, not without frayed relationships and significant expenditure of social and intellectual capital

to build bridges to span the growing group practice divide.

As we moved into the planning for cycle three, contract management shifted back to

NASA. We crafted a multi-year task with three separate work streams in an attempt to restore

balance between the three subcontracts. We asked each team to outline their unique

contributions, to be placed in contract language to clearly delineate boundaries between the three

small companies and give each a chance to flourish. In what may appear an incongruity, the

NASA core team members leveraged the bureaucracy to flatten the process and ensure equal opportunities for each subcontract team member to influence the evolution of the idea of LAUNCH. However, no matter how hard some members of the LAUNCH core team members worked to reinstate collectivist-democratic principles, the cycle two pattern of shifting alliances prevailed. A few core team members continued to form dyadic alliances to influence decisions by the whole. Team trust degraded among the original members, and new core team members joined existing alliances or created their own alliances in a "fluid and shifting" pattern of interdependencies (Weick 1979: 13).

The core team stretched out the planning schedule to institute a two-phased Council selection process: the first phase of invitations going out to multidisciplinary thought leaders as we had in the past, with the second phase of invitations to strategic industry leaders in a position to support specific LAUNCH Innovators. For this cycle, we moved the challenge development back to the cycle one mode of listening to experts and synthesizing the opinions before making decisions. We evolved the idea of LAUNCH by adding two Small Thinks and one Big Think, held on the both the East and West coasts; thereby, increasing open deliberation. However, the challenge synthesis presented to the core team reflected topics not mentioned by experts in our listening sessions yet promoted as priority issues of two partner organizations. Some team members felt manipulated by the presentation of findings packaged as the wisdom of many, yet representing the interests of the few. The contentious challenge deliberations revealed continued deterioration in the group practice. Pushback by core team members on the topic theme and challenge language escalated tensions, adding weeks to the planning schedule.

Moving into the fourth cycle, group practice decayed with disagreements over priorities, shifting alliances, and credit hoarding among the core team members. Oddly, subtle sabotage

within the shared planning documents occurred on a frequent basis. For example, team member input disappeared from documents, or credit for contributions mysteriously shifted from one team member to another. The NASA team brought in additional team members to manage and maintain these planning documents in an attempt to bring a sense of order. Despite these measures, the document mischief continued, raising questions about the need for greater oversight and restricted access to documents – threatening the collaborative principles, once again.

The email below illustrates the struggle between institutional perceptions of a partner's role and subcontractor's role in collaborative planning. Many of partner representatives transitioned with each cycle, bringing with them expectations of traditional contract management. Yet, we attempted to operate as equals. The author of the email was leading a subteam effort, expressing frustration with the flat governance practice, as discussed more fully in Chapter 3.

> *Email excerpt on May 10, 2012 at 12:34 p.m. [Sentiment 0.211112 positive]*
>
> *"I think the team of small consultants is working its historical magic, although up close I see more of the sausage making. There are a couple of situations where they have crossed wires, but in general they are doing what looks to me to be a terrific job. I think the free flowing of communication between the consultant groups and one or more of us is part of the strength of LAUNCH, so I am not worried about this.*
>
> *...Time for a mid-course correction. There are too many communication paths between the four consultant groups and us on this area for one of us to be on the hook as "master and commander" of this area. I think the free-flowing style is a strength of the team and am not recommending a change there. However, it is not working for one of us to actively manage them in any meaningful way beyond a bi-weekly status call to surface any issues."*

Not long after this email, a serious breakdown in communication occurred placing the partner organizations at risk. The funding partners took action to tighten control of decision making by creating a two-tiered organizing structure with clear lines of authority.

Figure 2.3.7 represents a two-tiered organizing structure put in place in the 4th cycle of LAUNCH to outline decision-making changes within the core team with the subcontractor members of the core team reporting to the partner organization representatives.

LAUNCH Implementation Partners

LAUNCH Founding Partners

Prime
Contract Management
Community Management
MindMapr

Subcontract
Innovator Research, Sourcing, Vetting, Selection
Council Recommendations
Forum Agenda Coordination
Strategic Advise and Counsel
Accelerator participation

Subcontract
Partnership Development
Accelerator Management
Innovator Facilitation Management
Council Recommendations

Subcontract
Innovator Prep & Facilitation
Accelerator Facilitation
Web Platform Development
Web Design Upgrades
LAUNCH valuation study model

Figure 2.3.8 represents the distribution of effort across the four partner agencies as defined by the partners in the 4th cycle of LAUNCH.

LAUNCH Founding Partners

•Program Management
  •Forum Event Management
  •Challenge Development/ Coordination*
  •Budget
•Strategic Leadership
  •Communications/Media/Web
  •Program Integration*

•Accelerator Management
•Council Coordination

Org 1
Org 2
Org 3
Org 4

•Partnership Development

•Innovator Video creation
•International Travel

Shared Responsibilities
  •Strategic Direction
  •Partnership Development
  •Council Development
  •Challenge Definition
  •Innovator Vetting
  •Accelerator Expertise

* additional staff required

The new governance model abruptly shifted decision making from the prairie flatland which once represented a level playing field for shared deliberation into a rugged mountain landscape with a flat plateau protruding from the ground with steep cliffs on each side,

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effectively separating the core team into two groups. Formally relegating the subcontract teams to a second tier dealt a damaging blow to the collaborative principles upon which LAUNCH was founded. Yet, the step was necessary to rein in non-collaborative behavior by a team member, whose repetitive actions strained relationships and skewed group practice in a negative direction.

Up to this point, LAUNCH group practice had been weaving back and forth like a driver who loses control of the car. As he loses control, he yanks the wheel in the opposite direction. With too much opposite force, the car fishtails and spins off the road. Our group practice fishtailed from side to side as we tried to counterbalance episodes of controlling, passive aggressive behavior. The two-tiered structure was an attempt to stabilize LAUNCH and keep it from spinning off the road. It wasn't a perfect solution, but it served as a stopgap measure to allow the core team to move in a positive, forward direction again.

The creation of a two-tiered decision-making process, however, left the subcontract team feeling demoted and devalued. One team member argued a case for the formal title of Founder; with monetary recognition for contributions of intellectual property that fed into the idea of LAUNCH. Collaborative practice, at this point in the fourth cycle, devolved into a what's-in-it-for-me conversation. Under normal rules of the bureaucracy, a contractor paid to develop an idea for the government does not claim ownership, nor claim compensation beyond the terms of the contract. The government is the creator of the project, through the services of a contract vehicle that funded the consultant team members. This issue of attribution persisted for months, requiring the NASA core team members to consult legal and procurement experts on flexibilities over titles. Because LAUNCH core team members received financial compensation each cycle through a federal contract, the claim for intellectual property was denied; however, in an unusual concession by government experts, we were permitted flexibility to allow the original core team

members to call themselves Co-Founders. The email excerpt portrays frustration ove the

continued demand for credit.

Email excerpt on July 13, 2012 at 8:10 p.m. [Sentiment -0.32829 negative]

"Unfortunately, this issue raised its ugly head again today. We worked through the biography issue – and settled on Co-Founder for all of us. [Core team member] is concerned about not receiving an answer to the June letter about titles and money issues. I was hoping that since we have all been working well together that I should not send an answer that would create bad feelings."

The subcontract team member wanted to know how the partners would be telling the "creation story" of LAUNCH. From the core team partners' perspective, the story was no different even though some of the core team members didn't sit at the strategic planning table but moved to the implementation table – which is not inconsistent with a startup organization where the original founders shift into different roles and are no longer making all the decisions together. This email provides a top-level response about the LAUNCH creation story, and calls out team tension associated with the issue of credit.

Email excerpt on July 15, 2012 [Sentiment 0.152398 positive]

"We've taken each of your concerns and thought about them carefully and spoken with the partners as well as the contracting representative. This has been hard for us because we do not like the divisiveness that this is causing our team. Everyone has worked very hard to create LAUNCH. We are all very proud of it and it is very gratifying to be a part of something that produces real results and makes a difference in the world."

The issue over credit extended beyond the subcontract team. Some of the partner core team members felt NASA had too much influence on the process and questioned NASA's role in the creation of LAUNCH. As team members joined and exited the core team, the creation story evolved. This email excerpt describes an encounter between team members in a session intended to heal wounds from the two-tiered organizational structure.

Email excerpt on August 8, 2012 at 6:39 a.m. [Sentiment -0.320758 negative]

"Just so you know, [Core Team Member] has gotten a bit cranky about NASA's role in LAUNCH leadership. Because of some ugly words said during our LAUNCH "bonding" session, we committed to go back to the beginning and reference our email trail and documents to create a timeline of the LAUNCH beginnings.

I think, perhaps, we're a victim of our own success. Everyone wants to claim credit. Yet, we all contributed to making LAUNCH successful."

The story of LAUNCH had taken new shape depending on who told the story, and each held on fervently to his or her own creation story. Weick describes this kind of sensemaking as the "interpretation of previous happenings" through the creation of "plausible histories that link these previous happenings with current outcomes" (1979:13). Each partner had an organization-centric creation story to align with organizational priorities. Founding team members had individual-centric stories to tell. NASA's role shepherding the idea of LAUNCH from flyer to reality got lost in the making. We had our own NASA-centric story to tell and the email documentation to prove our role as founding partner – which also serves as the basis of this study.

With the fifth cycle of LAUNCH, the group practice pulled off the road again, but this time to check the map to figure out our new direction. The map, in this case, was the material systems map Nike offered as a significant in-kind contribution to LAUNCH, along with their leadership and increased team assets to move LAUNCH from a topic by topic cycle selection, to a long-term seven-year systems approach to select innovations to unlock gaps or barriers in the materials supply chain. The email below illustrates early planning by the core team to shift to a LAUNCH 2020 materials systems focus, evolving group practice in the process.

Email excerpt on August 8, 2012 9:49 p.m. [Sentiment 0.401532 positive]

Thanks for your time today. Very helpful first discussion. Clearly, the element of vision alignment is key. But it is also important that we ground the vision on an agreed approach to systems innovation and get started with the 2020 roadmap. This will have implications with regards to the process that should be addressed in order to avoid affecting Launch's cadence.

For vision alignment, I would like to include clarity on capabilities, resources and ways of working (team values, norms, process/governance) so that we can elevate our team work.

For (systems innovation) we will put together a workshop plan to align on the methodology. We will also use [the] materials systems map as an exemplar. ...Most of LAUNCH challenges have a social, economic or environmental correlation with the materials systems anyway (eg. Waste, energy, water, etc.) it seems to be a good place to start our discussions."

With cycle five, we added a LAUNCH Summit between the Big Think and Forum on our process schedule. The Summit, hosted by Nike, was envisioned as the springboard to bring together 150 leading thinkers in the material supply chain to engage with systems thinking and debut the materials challenge with fanfare and visibility. The team spent an additional six months re-conceptualizing LAUNCH as a systems lever. Not only did we select innovations to solve a technological gap, but each innovation affected multiple interlocked systems. The Big Think focused on facilitated discussions to fill gaps in Nike's system map, and the challenge statement was offered for their review, having already been approved by the partner organizations. LAUNCH was less about the innovations and more about systems awareness – which required the core team to rethink what we knew about LAUNCH and find new ways to understand the world of materials systems. For Nike, LAUNCH became a platform to shift the narrative within their supply chain community to interconnectedness rather than corporate competitiveness. The materials system supply chain had less relevance as a means to solve complex NASA technology gaps, and ultimately led to withdrawal of top-level NASA support for LAUNCH.

The increased activity due to the shift in focus to material systems stretched the contract labor budget wafer thin. In order to preserve funding for the selection of innovators and facilitation of the LAUNCH Forum itself, the two funding organizations, NASA and USAID, put a stop to all new materials system concept development in order to focus on the core processes of LAUNCH, as evidenced in the email excerpt below.

Email excerpt on February 27, 2013 at 8:14 p.m. [Sentiment 0.309966 positive]

"The Partners met last week and we reviewed several proposals, ideas, and new initiatives created by various team members. We also discussed the increased travel and labor expenses for January caused by additional meetings, teams, and strategy sessions. We agreed that we must cease any additional/new start work that is not absolutely required.

All contracts remain in place and we value each of your contributions. We do need you to monitor your proposed tasks and hours as well as help any of us to understand if we ask you to do anything that would put you over your monthly proposed hours. We want to respect your time also, and do not expect you to perform work that has not been outlined in your contracts. Each of you have helped create LAUNCH – and we sincerely understand that while we're all trying to move LAUNCH to a new level, the new approach has created some anxiety and areas of struggle.

So, although we see do see the potential for improvement in the LAUNCH process for some of the new ideas, we simply cannot add any new work at this time. We need to cease the constant changes that have been part of LAUNCH over the past few months."

Though we worked together well to make progress on the new systems focus, disruptive behavior persisted in the shadows that fed the anxiety described in the email above. The partners agreed to take action and formally cut ties with one of the founding core team members.

Email excerpt on May 13, 2013, at 5:10 p.m. [Sentiment 0.381494 positive]

"Dear Partners,

I talked with [core team member] this morning and told him that we would not be extending his contract with LAUNCH. It was a difficult conversation. Separating

friendship, emotions, tasks, and what is good for the program is necessary as we move forward.

I do believe that we are in a period of growth and transition. In order for us to continue to add additional partners and provide new capacity, more changes will be necessary. This is typical for a young, expanding organization.

Change is hard. Thank you each for your support."

The core team felt the intellectual and creative vacuum created by the departure of such a talented and accomplished individual. Yet, in his absence, equally talented team members flourished, as did group practice. During this cycle, which extended 13 months, we created the LAUNCH franchise model, which was used by LAUNCH Nordic for our first affiliate event, and hosted planning discussions with State Department for a separate LAUNCH oceans cycle. The partner representatives solidified a structured decision-making agreement with an Executive Board and one voting member per partner agency, effectively creating a three-tiered governance with four members of the Executive Board at the top, remaining partner team members at the next level, and subcontract team members as implementers. Group practice shifted to a tall, top-down leadership model, though still collaborative and creative. All decisions in core team meetings ended with a roll-call vote by the four Executive Board members. The idea of LAUNCH evolved from a fully collaborative, flat group practice to a multi-layered hierarchical approach – collaborative deliberation followed by Executive Board validation.

Section 4. Mapping LAUNCH evolution

In each of the five embedded cases of LAUNCH, the knowledge generated during the LAUNCH process and group practice affected the evolution of the idea of LAUNCH. The organizing processes of LAUNCH remained the same, though we added new ones as we encountered gaps in our understanding or endeavored to grow the impact of LAUNCH

Collective Genius and pool of curated sustainability innovations. Blackler, Crump and

McDonald describe the evolution of the idea of LAUNCH as "contextual innovations" that

provide perspective on how the core team and Collective Genius community understand and

imagine the future (2003: 132).

By the fourth and fifth cycles of LAUNCH, changes in the idea of LAUNCH are evident

in *Table 2.4.1,* which maps the evolution of LAUNCH processes. Evolution includes the

LAUNCH model and Micro-Challenge competitions; Big Think brainstorm sessions; events such

as the Summit and Forum; advanced Accelerator capacity building to enable Council to provide

intellectual, social and financial capital to Innovators; and numerous technology platforms that

support the LAUNCH process. Nicolini, Gheranrdi and Yanow call this a continuous "cycle of

mutual interaction...that creates new practices as well as new ways to address them" (2003: 17).

Table 2.4.1 LAUNCH Creative Process Comparison by Cycle provides a Level 1 analysis of the
conceptual model of process and offers an overview of the evolution of LAUNCH knowledge
generation organized by the overarching principles that drove each process.

LAUNCH Creative Processes By Cycle	Water	Health	Energy	Waste	Materials
1. Convene a Sustainability Conversation around Innovation					
1.1 Cycle Topics					
Technology Gap of Interest to Partners	*	*	*	*	
Systems Map Gap					*
2. Identify and Select Game-Changing Ideas					
2.1 Innovation Challenge Development					
Research	*	*	*		
Expert Input					
Working Group	*	*			