



WHITE PAPER

#20 Architecture of Innovation

Creating a “School of Thought” by Robert Porter Lynch

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Note: this Draft, from 2006, was aimed at Innovation Alliances, and is currently undergoing updates and revisions

Contents

Part One: Where We Are and How We Got There 2

 1) Innovation as we enter the 21st Century:.....2

 2) What’s Missing.....2

 3) How We Got Here2

What is Innovation Architecture? 4

 1) Discipline.....4

 2) Systematic.....5

 3) Integration, Configuration, Transformation5

 4) Alignment8

 5) Create, Design, or Build9

 6) Conclusion10

Part Two: What Is Innovation?..... 11

Part Three: Application Architecture 12

 1. Strategic Imperative12

 2. Leadership & Relationships.....14

 3. Organization Design.....15

 4. Performance Processes.....16

 5. Legal, Contractual, & IP Regeneration.....17

 6. Economics, Metrics, & Rewards18

Appendix..... 19

 12 TWELVE STANDARDS for BEST PRACTICE ARCHITECTURE19



PART ONE: WHERE WE ARE AND HOW WE GOT THERE

1) Innovation as we enter the 21st Century:

The word *innovation* is on every senior executive's lips, it's the critical difference between business success and failure in a fast moving, rapidly changing world, and it's one of the most important elements in creating wealth. Yet strangely, this critical element of modern economics and social advancement has been left in a limbo-like state with the shift of the millennium.

Innovation has millions of corporate adherents, but no architecture, no profession, and no management system. Today "Innovation" is a fragmented pastiche of methods, allusions, processes, frameworks, tools, and techniques. With neither a coherent "architecture" nor a profession, it belongs simultaneously to everyone and yet to no one; it floats in the airy space of inventive heroes and creative geniuses, occasionally touching ground with practical advice and a range of consultants, academics, and alchemists who profess to have the secret formula that will turn corporate lead into shareholder gold.

2) What's Missing

Absent in this picture is a coherent strategic system that will transform innovation from the realm of the ephemeral into the firm grasp of the dedicated practitioner -- a system that can be replicated, communicated, and transmitted between professionals who, by building on the discoveries of those who precede them, can create more and more value.

Such a vacuum requires a new field of "Innovation Architecture."

History is replete with examples of why and how architecture and architects come into being. We have building architects for complex structures; we have naval architects for complex ocean vessels, and software architects for integrated information technology.

Just as other architects master complex system designs associated with their professional focus, so it is time to develop a professional field of innovation architecture to design and manage the critical and complex processes that underpin innovation systems.

3) How We Got Here

To better understand the pathway to the future, it's useful to understand how we created today's landscape. Innovation has always been an essential element of the American experience. Beginning with Christopher Columbus, the yearning to discover, explore, and invent has been deeply held in our psyche. The Founding Fathers were great innovators in framing the structure of the new nation. Beyond being political visionaries, Benjamin Franklin was a renowned inventor and Thomas Jefferson was both



an inventor and amateur building architect. Jefferson's founding of the U.S. Patent Office is a tribute to his passionate commitment to invention.

Then, following the birth of our nation, the bugle sounded for a long century and a half heralding an *era of hero worship*. The names of Eli Whitney, Elias Howe, Cyrus McCormick, Alexander Graham Bell, Henry Ford, and the Wright Brothers were firmly imbedded in the conscience of every school boy and girl at a young age. This heroic era of invention culminated with the Wizard of Menlo Park – Thomas Alva Edison.

After Edison's death in the heart of the Great Depression, a new era was born with World War II, the first war that was won with technical inventions that did not even exist at the beginning of the war. In its aftermath, a wide variety of new electronic technologies burst onto the scene. This began the *corporate invention era* that first capitalized on two elements of invention: creativity tools and techniques (such as brainstorming, psycho-cybernetics, and synectics) then later development processes (such as TRIZ, Systematic Inventive Thinking Methodology, Stage Gating, etc.)

With the new millennia, a new thinking was coming to the fore: Invention came to be seen as only one form of Innovation. Whereas invention refers to technological creations, innovation embraces invention, but is a much larger and broader idea, encompassing technology, process improvements, systems solutions, new business models, improved human interfaces, and market extensions.

While the stakes are high, so is the confusion. The innovation field, while shifting from invention to innovation, is now inundated with so many tools, techniques, methods, and musings that the typical executive is baffled by a barrage of innovation conferences and sales promotions with no hope of systemically weeding through the morass hype to make a wise decision about how to proceed. This has left many decision-makers in a quandary:

- Who are the real experts? How do I hire and recruit them?
- How do I know they are real professionals?
- Where do I start?
- Who do I believe?
- What processes really works and what doesn't?
- How do I manage the innovation risk?

The questions run on and on, with insufficient answers.

Consequently innovation becomes important but not urgent in the corporate mind. For all-too-many companies, innovation is a slogan not a strategy, a platitude not a program, and an algorithm not an architecture.

What's needed is a systematic innovation architecture that enables decision makers to address the issue of innovation just as they would a financial, engineering, construction, or production problem.



WHAT IS INNOVATION ARCHITECTURE?

To understand Innovation Architecture let's examine its meaning:

Innovation is a process that generates new sources of growth or wealth in an organization

Architecture¹ is a discipline that creates, designs, or builds by integrating, configuring, transforming, and aligning diverse elements into something useful and enduring.

Therefore:

Innovation Architecture is the systematic discipline that integrates, configures, transforms, and aligns diverse elements resulting in the creation, design, or building of new sources of organizational growth or wealth.

Let's take the key words in this definition and examine them in more depth to grasp the significance of Innovation Architecture.

1) Discipline

First and foremost, this is a discipline, not a free-form array of anything anyone wants it to be.

Second, as a discipline, it is built on a foundation of principles, processes, and practices that are fundamental to all situations. Some principles are timeless truths, just as doctors continue to take the Hippocratic Oath that was first formulated over two thousand years ago. Other principles are upgraded as new knowledge, learning, and insights are gained.

Third, any discipline takes continued practice, learning and application, whether the discipline applies to a preacher, a karate expert, a teacher, a dentist, or an aviator. Fourth, disciplines have rigorous standards that certify to those outside the profession that the practitioner is worthy of their craft, and not just a quack who creates a website and business card.

Fourth, great architectures have a deep connection to an inherent "Natural" Truth, that elegant simplicity that is represented in a Greek golden proportion or Einstein's $E=mc^2$. When a rabbinical scholar was asked: "How do you know something is truth?" he answered "because it lasts." Natural truth has a linkage to that which occurs in natural organic forms or mimics the forms that remain robust in the world of nature's constant stresses. For this reason, truly linear processes are seldom the way of innovation, just like neural networks of the brain are non-linear, but the brain is capable of both linear logic and non-linear creativity.

¹ Originating from the Greek, architecture means an over-arching master of craftsmen.



Fifth, because of the non-linear aspects of innovation, the innovation architect operates with discipline in the background and freedom of thought in the foreground. Discipline thus becomes a liberating, not a constraining force for the masterful innovator.

2) Systematic

For architecture of any sort to be effective it must be systematic – in other words it must fully embrace the unity and harmony of all the parts to produce the synergies resulting in the whole being greater than the sum of the parts. Innovation that does not take this holistic approach is doomed to forget some of its essential goals and strategies, thus becoming innovation for innovation's sake, not as a vehicle to create something of value to the organization or its customer.

Systematic also implies a flow, functionality, and connectivity between the disparate elements. One of the most unique architectures is the human body. Any disconnects between any of the subsystems, and the body becomes ill or dies. So with Innovation. This also implies a symbiotic relationship both internally and externally.

Disharmonies can exist, but they must be functional, just as muscle tension is good for muscle tone, and a certain amount of anxiety propels peak performance. Too little disharmony may yield an architecture that makes the system insufficiently robust. But too much and the system will crack.

3) Integration, Configuration, Transformation

This trinity of architectural functions is vital to producing something that works and lasts. The mastery of architecture requires a unique blending of perspectives, specialties, inter-relationships, and inter-dependencies. As the ancient Greeks knew, the architect is the over-arching master of all the crafts and sub-specialties, interweaving art and engineering,

Integration: Architecture is the confluence of art and science, human behavior and technology, the ephemeral and the concrete, the sublime and the data, the creative and the analytic, the heart and the head. This requires a unique person who embodies the Renaissance soul – the modern equivalent of Leonardo da Vinci – the unified interdisciplinary artist and scientist. The word *imagineering* was coined to capture this confluence of art and science.

The ability to integrate, configure, and transform is one that requires at least two of three fundamental abilities in the brain: analysis, synthesis, and genesis. Einstein, the modern master of paradigm shifting would engage in the latter two before addressing analysis. Whereas most modern scientists are so fully left-brain developed that synthesis and genesis are foreign experiences, the innovation architect is that unique multi-dimensional integrator capable of diverse thinking.

In the new model of innovation, technological invention probably represents only 20% of all the innovation, thus making everyone a potential innovator. The innovation architect understands and has mastered the multi-dimensional space of innovation and



has multi-lingual skills in technology, development, strategy, marketing, alliances, human behavior, organizational change, and systems analysis, among others.

Other integrations are essential. In particular, organizational integration – between functions, across divisions, with customers or suppliers, or between alliances – will be pivotal to success. The innovation architect must have a reasonable grounding in technical, organizational/social, and business systems, along with the language, mindsets, and skill sets to create a synergy between these systems.

Configuration: Configuration is a talent that the innovation architect must employ to link the pieces of an intricate puzzle into the right sequence, order and priority for the innovation to take effect.

Imagine the architecture of a computer. An integrated circuit must be configured with the right specifications and requirements before the layout can be considered. Then the configuration should use the least number of parts – chips, resistors, oscillators, capacitors, transformers, circuits, etc. – in the most effective and economical way to produce the desired result. Or, for the naval architect, the design of a sailboat or an engineering team designing a car must make thousands of configuration trade-offs to fit a multitude of systems, functions, and utility in a very limited space.

Similarly, all architecture must place significant emphasis on how a design is configured for function, production, utility, and service. And, ultimately, if the configuration lacks beauty, its inherent ugliness may very well cast it into the dungeon.

What's also unique about innovation, because it integrates left and right brains brains, analytical with relational, scientific with artistic, discipline with freedom, it becomes inherently non-linear. Therefore configuration is often an integration of linear and non-linear systems.

Transformation: *Transformation* is the last, and perhaps the most important but most difficult element of this trinity. The word *transformation* itself is probably insufficient to embody the real nature of what is required here. More appropriately it must also be linked with *transcendence* to describe the dual nature of the process.

The role of the architect is undoubtedly to transform physical things into something new, more functional, or better suited for its environment, just as sand and clay are transformed into concrete which is transformed into a building foundation.

But more. All innovation, in the final analysis, is a human endeavor that must be embraced by people. One essential step in the innovation master's journey must be to embrace others in the process of innovation. Before one can aspire to be an Architect of Innovation, one must first have the passion embraced in a Champion of Innovation, because innovation is a discipline of both head and heart. No project without a champion ever survives. Someone has to take responsibility and also needs to drive forward, usually against considerable obstacles.

If transformation is the physical part of the innovation architect's job, *transcendence* is the metaphysical portion. Einstein understood this when he said "Creativity is more important than knowledge," and "We cannot solve today's problems with the same level of thinking that created the problem."



While the word *transcendence* has roots in the Latin, it was the Greeks that knew far better what principles formed an innovative *culture*. Their word *metanoia*², which means to *shift the mind to a higher order of thinking*, is quite appropriate. This phenomenon is an activity of both a mind and heart.

“Imagination is the beginning of creation. You imagine what you desire; you will what you imagine; and at last you create what you will,” was the observation of George Bernard Shaw.

One cannot create without an intense desire spawned of a passionate heart. Brainpower alone is insufficient to drive the innovative spirit. The roots of innovation come not from the mind alone, and not from the soul alone, but also from the interactive frictional challenges of thoughts and beliefs of others. This is a somewhat dangerous role in a corporation unwilling to support the idiosyncratic behavior of innovation champions.

As John Stuart Mill observed a century and a half ago, "The amount of eccentricity in a society has generally been proportional to the amount of creative genius, mental vigor, and moral courage it contained. That so few now dare to be eccentric marks the chief danger of the time." Certainly our condition has worsened since Mill's time. Innovators certainly often manifest as eccentrics.

The innovation champion usually stands for what modern psychologists seem to deny: the abandonment of self interest in favor of the “greater good”³ In this respect the Innovation Champion is unique -- one who has experienced the transformative devolution of the ego that plagues the traditional lonesome hero. With the ego's devolution comes the transformative emergence of the innovation champion as spiritual warrior, who heroically confronts the status quo, is troubled by the artifice of homeostasis, and thus challenges, connects, and inspires others to collectively engage in the creation of a bold new future, and, in doing so, yields their personal self interest to the greater good. For, as the spiritual warrior has learned, what is in the greater good (*kalos k'agathos*) is also in their own spiritual good. This is the metaphysical portion of innovation – the synergistic and synchronistic shifting of vision, beliefs, identity, as well as architecture. It is this transcendent shift of the mind (*metanoia*) that the Greeks and later Emerson extolled.

But still more. Every study has shown that the number one factor in creating new innovations is an *innovative culture*. The innovation champion, no matter what his or her position in the organization, has a major role in guiding the evolution of this culture. People support what they help create is the underlying principle of the innovation champion. The innovation champion drives not just the innovation itself, but performs a larger and more important role: Creating the self-sustaining and self-regenerative

² The closest modern equivalent for this word is “paradigm shifting.”

³ Again the Greeks had a term for this: *Kalos k' agathos* which means, literally, “good and good,” with one “goodness” referring to the [outward] social and personal “beauty” of the person and the other to inner *moral and humanitarian excellence*. One is inwardly looking to personal improvement, the other outwardly to the quality of social relations. The purpose of education was the formation of character *to build a good and virtuous person – kalos k'agathos anthropos*”



conditions of innovation to unleash the natural forces within the human psyche. In this way the innovative culture enables people to have a deeper meaning in their lives and to have a safe place to engage individually and collectively in discovery, creativity, and invention. As one emerging champion extolled, "This whole shift to an innovative culture gives meaning and purpose to our work."

The effective champion is an energy force who endeavors to empower all in his or her realm to attain the unknown potentials and possibilities of co-creativity which flow from the synergy of compatible and aligned differentials in thinking. This task is one of leadership, alliance building, breakthrough thinking, and cultural realignment. It takes great strength of heart and mind. "The appearance of a great person," observed Emerson, "draws a new circle outside of our largest orbit and surprises and commands us."

4) Alignment

Because the very process of innovation is systematic, it requires the alignment of systems, strategies, and structures to be effective. The innovation architect must be deeply aware of and sensitive to these issues.

Purpose: The first alignment is the alignment of purpose. Without a common goal or vision to a noble cause, development teams will lack focus, inspiration, and direction. This typically requires an alignment about what creates real value.

From a systems perspective, alignment means that every system and sub-system is focused in the same purposeful direction. For example, in the architecture of the design of a commercial airliner, the propulsion system, avionics, landing gear, airfoil surfaces, etc. must all be aligned on the ultimate purpose and configuration, or else the architecture will be dysfunctional, or worse, destructive.

At the strategic level, aligning the focus on specific competitive advantages derived from a particular innovation is essential. Frequently a Force Field Analysis⁴ is required to understand what forces in a system are in alignment and what forces are misaligned or contrary to the ultimate strategic objectives. Inherently there are three options for the master innovator who deals with forces and powers: to position forces *against*, to *balance* forces, or to *align* forces. In the end, alignments are the favored choice.

Alliances, both internally and externally, are a major portion of the innovation architect's role. These alliances are fundamentally about aligning the strategic, cultural, and operational aspects of innovation to enable the innovation to materialize and have real worldly impact.

Structural Alignment, particularly within organizational structures will be essential. If the strategy, metrics, or rewards of one organizational division, department, or alliance are out of alignment, then the innovation process will falter because of contrary signals being delivered to the people about the value of the change.

When powerful alignments are generated, energy forces multiply, yielding both Synergy and Synchronicity.

⁴ Benjamin Franklin was reputed to be the inventor of Force Field Analysis



5) Create, Design, or Build

Create: Two things that differentiate the 21st century from other eras are: speed and hybridization. The rate of innovation has accelerated dramatically. Many of the breakthroughs in innovation are occurring across boundaries – organizationally, functionally, and specialties of science. This hybridization is driving a new form of creativity no longer focused on the individual but on the innovation team. Here the adage: “If two people in the same room think alike, one is unnecessary to innovation,” becomes a key principle of innovation architecture. The dynamic capacity of differentials in thinking to generate new paradigms is a paramount issue for the innovation architect. Harnessing this co-creative energy and ensuring the confluence of differentials (versus the conflict of differentials, which becomes destructive) is essential to prevent paradigm and pathway dependence. This means that the mental process of genesis (creation) must be linked tightly with synthesis (union). For most universities who have trained students to excel in analysis (compartmentalization), and corporations that have heretofore thrived on hiring left brain managers, this will come as a major shift.

Constructing innovation teams means blending the right skill-sets with the right mind-sets.

There is no lack of innovative energy in most organizations. Why then doesn't innovation flourish? All-too-often innovative talents and energies are blocked and frustrated by analytic, linear managers. In the past, generating innovation often meant giving a freer reign to the non-linear thinkers. However, today empowering the non-linear thinker alone is not enough. Forming innovation alliances that enable linear, analytical thinkers to engage in breakthrough teams that operate in a non-linear, relational manner is equally vital.

Design & Build: Converting dreams into reality, visions into value, possibility into action requires a set of principles, processes and practices which enable the architect's innovation teams to generate and replicate on a sustainable basis.

Design is the confluence of art with engineering, the concrete with the ephemeral. Like music, it has unity, harmony, melody, and rhythm. It sings and dances, it plays and touches the soul.

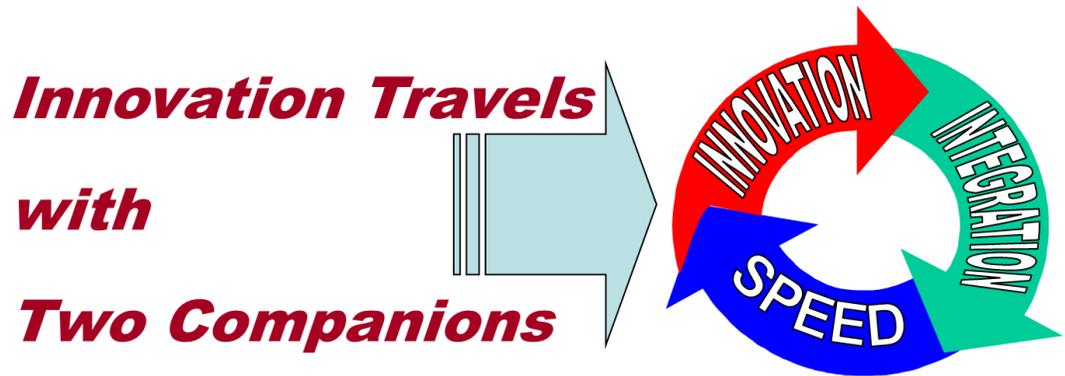
Here the world of the early 21st century is filled with a plethora of tools and techniques of the trade. It's akin having an army of bricklayers, plasterers, plumbers, and electricians ready to go to work, plying their trades to every developer and contractor in site. But one hang-up: No architects have been hired, there are no plans, no blueprints, no site plans – just energized tradesmen. And worse, there is no method of determining which tradesmen are charlatans, which the real thing, and which are want-to-bees.

The innovation architect must be able to guide innovation teams in deciding what processes and practices, tools and techniques to use in a particular set of circumstances to produce outstanding results consistently.

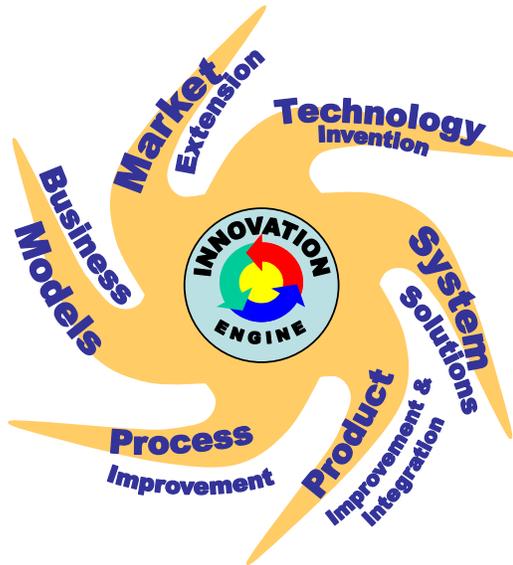


6) Conclusion

Ultimately, the purpose of Architecture is to create then build that which will endure not because of its bulk or magnificence, but because of its elegant simplicity in merging of beauty with utility, vision with truth, and inner meaning with value.



PART TWO: WHAT IS INNOVATION?



- 80% of Innovation is Non-Technical (Solutions, Process Innovation, New Business Models, etc.)
- Must Capture All Forms & Sources of Innovation to Compete

Figure 1 – Six Elements of Innovation “Engine”

6. Market Extension

- Develop New Products, Services to:
 - Support Existing Customers/Market Bases who buy our current products
 - facilitate Product/Technological Adoption and create value from usage
 - Introduce new services & value streams

5. New Business Models

- Reconfigure the Nature of How Business is Framed to Serve the Customer:
 - Make it Easier to do Business
 - Create More Integrated Products and Services
 - Devise better ways to be profitable
 - Use Resources in a New Way

4. Process Improvement

- Make Processes:
 - Simpler
 - Faster
 - More accurate
 - More Reliable
 - Less Expensive
 - More Integrated

3. Product Improvement/Integration

- Continuous Improvements Making the Product More:
 - Efficient, Effective
 - Leveraging Existing Core Technology
 - Useful or User Friendly
 - Integrated with other products, technologies, or systems
 - Valuable to users

Six Basic Kinds of Innovation: (we consider these of equal value)

How Different Companies Choose Different Approaches To Innovation

1. Technical Invention

- Product Creation/Development with a new Core Technology
- Next/New Generation, Breakthrough/Discontinuous Technology

2. Systems Solutions

- Rethinking & Integrating Existing Systems to Solve Complex Customer Problems
 - Use Solution Alliances to Integrate Complexities
 - Often Generates New Solutions to Existing Problems
 - Usually Closely Linked to Customer

PART THREE: APPLICATION ARCHITECTURE

– Organizational Systems Model for Field Engagements

At the Center of all Innovation is Creativity. But Creativity without direction, purpose, or coordination becomes self indulgent.⁵ The Organizational Systems Model focuses on Co-Creative (or Inter-Active) Creativity aimed at generating Valuable Innovations.⁶

For all too many companies, innovation is an aspiration, not an architecture. When the CEO commands or directs an innovation initiative, because there is no architecture, the internal staff falls back onto what it can envision, comprehend, or digest. This typically means *the last book someone read, the most dynamic speaker at a recent conference, or the last workshop attended that promoted some tool or technique*. This is why so much innovation looks like industrial design or a creativity workshop. It is neither strategic, nor systematic, nor synergistic. It may work for the short term, but then peters out into a whiff and a promise. The initiative couldn't be sustained nor could it be scaled.

Why?

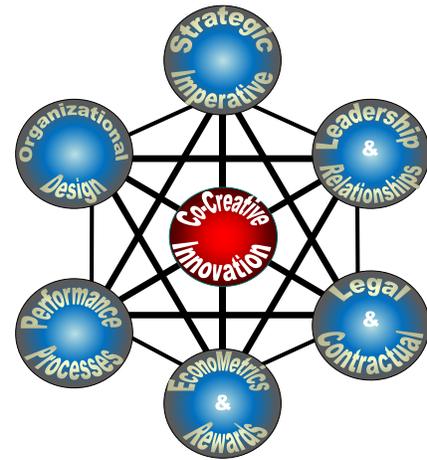


Figure 2 – Innovation Systems Architecture for Organizations

1. Strategic Imperative

There is a big gap between having a slogan and having a strategy. And this gap was very, very evident in our study. Company after company espoused innovation, some even had it in their logos. In one case, a company that prominently displayed their advocacy for innovation was devoid of a single strategy, policy, process, or practice with one of its largest revenue generating customers.

The Most Innovative Companies in our study had a very clear set of strategic objectives, tools, and processes to gain advantage.

- Some started with their Business Development Teams, knowing what targets would provide the right innovation streams.
 - The Secret to their success was not just finding the right companies, but knowing how to integrate them effectively.

⁵ this is okay for artists, but not for business

⁶ This distinguishes this model from “individual creativity” for the artist or inventor, “innovation for innovation’s sake,” and isolated innovation that happens by accident, serendipity, or happenstance.



- We found a number of Best Practices in this category that separated winners from losers.
 - Having a process to manage their array of innovation relationships was essential to striking a Global Advantage. Without a system to manage global acquisitions and alliances, companies became overly opportunistic, which, in the long run relegated them into a reactionary (non-proactive) mode.
 - We were able to construct a set of best practices to enable a highly pro-active mode which dramatically enhanced streams of innovation.
 - An excellent framework to determine when innovation should be acquired, when it should come from an alliance, and when it would be done inside was essential to many best-in-class organizations.
 - While each of the best companies used a different process for this decision making, we were able to extract a universal framework that can be adopted to a wide assortment of businesses and industries.
- Other companies did a very careful assessment of their value chains to understand the impact of innovation.
 - Their strategy was in knowing how to create a new value chain where innovation would truly create a bullet-proof competitive advantage. In the most dramatic cases, these companies redesigned their value chains from the back end (supply and R&D) right through to the front end (the customer). The results of this style of process reengineering was remarkable, because it removed non-value added work, which often got in the way of doing more constructive things, like developing new technologies and products.
 - Our team was able to utilize these best practices and implement them successfully in several pilot projects, which then grew and matured with high levels of innovation.
 - A full value chain reengineering was not necessary to gain competitive advantage. A company just had to be better than their competition. Many of the best companies in their industry segments only created innovation relationships in part of their value chain, but gained advantage over their slower moving, more myopic competitors nonetheless.

☒ The world is very dynamic, with ever-changing strategic forces.

- To navigate the uncharted waters in a minefield of multiple futures, world class innovators developed unique planning tools that could be used globally in the field to create innovations that were highly effective.
- Another strategic approach to innovation was to engage some very specialized techniques, such as war gaming, scenario mapping, and other very sophisticated forecasting.
 - We have been able to improve on a number of these strategic initiatives, and have partnered with one of the companies to create strategic advantages that will leverage innovation streams.
- Not all innovation is created equal. Best in Class companies developed ways to triage innovation to be sure time, money, and resources were not wasted on nice-to-have methods.



2. Leadership & Relationships

A great strategy without great implementation is hallucination. The first step in implementation excellence is leadership. In fact, we found in every case of companies with Engines of Innovation a great leadership team that worked in unison and aligned purpose.

No innovation strategy can ever be executed without the commitment and vision that comes from great leadership.

Innovation, in and of itself, generates anxiety because it creates change, often rapid and unpredictable change. Wherever there is change, there is ambiguity, uncertainty, and unpredictability. These factors alone are sufficient to throw many organizations into turmoil.

Add to these the difficulty of combatting the “Not Invented Here” syndrome, “us versus them” and “culture clash,” and you have all the ingredients for a conflagration.

Best in Class companies in our study pay strict attention to the Leadership issue with deep conviction:

- They see innovation as a core strategy in their company, and take action on its many implications:
 - The Leadership Executive Team understands the importance of their role in fostering innovation
 - Develop the right internal and external relationships to catalyze innovation
 - Build the right cross-functional and cross-Business Unit Interactions
 - Support the Champions in the field who are taking the risks all innovation requires
 - Know how to select the right people to generate constructive innovation
 - Are willing to scrap old non-effective methods.
 - We have successfully extracted the best leadership practices that propel Engines of Innovation to success.

- Senior Executive support was not sufficient to create an Engine of Innovation. What was necessary was someone anointed by senior management to act as a champion of innovation. While most managers are driven by an ethic of competition, the innovation champion is driven by an ethic of creation.
 - They inspire employees by distributing a sense of responsibility throughout the organization. Everybody performs with tangible goals in sight.
 - There is more tolerance for risk-taking, thus greater innovation; more acceptance of the value of long-term success, thus greater persistence; more personal responsibility for how the company performs -- thus a work force that identifies personal achievement with the success of the firm.”
 - We have identified the critical best practices that champions must engage in, and more importantly, how they combat cynicism, skepticism, and the pervasive not-invented-here syndrome,
 - and the capacity to produce win-win results.

3. Organization Design

Innovative companies have shifted their organizational structures and operational inter-relationships to make innovation flow from both their outside and inside sources.

The Best Companies had broken down many of their internal barriers cross-connect their own operations, and then opened up their organizations to new collaborative relationships that focused on innovation. The old value chain thus became less rigid and more open to new ideas, which brought along innovation flows.



- We are able to diagnose organizational problems that block innovation streams and prescribe a host of best practices to cure the blockages.

Governance of outside relationships is a very difficult process for the uninitiated. However, the most innovative companies developed highly effective management systems for governing these relationships.

- We have developed a series of best practice frameworks for governing innovation alliances, for managing supply chain relationships, for and for joint solution delivery to customers. These are highly effective, and now, time tested.

Companies who managed innovation well externally used many of the same approaches to enable innovation to be generated by creating internal alliances across their organizational silos.

- Using our proprietary frameworks, in many cases we have been able to restructure the internal boundaries to open up the flow of ideas.

Because often the shift in organizational functioning can be quite large, the selection of the right people for managing innovation relationships becomes critical.

- We have developed a very effective set of best practices that enable us to predict which people will be successful in managing in the new inter-connected world of innovation.

In technology development, developing a long-term stream of continuous innovation requires unique methods of organizing the people that generate the innovations. The best companies developed unique approaches to this challenge.



4. Performance Processes

Ultimately, the real test of any Engine of Innovation is in producing real RESULTS. Without imbedding real Performance Processes into the people and their teams, all the other work is superfluous.

There are three critical dimensional elements of changing the way people perform:

1. KNOWLEDGE: WHAT must be done Differently to produce a great result
2. CAPABILITY: HOW must a team and individuals engage Differently
3. ACCEPTANCE: WILLINGNESS to change interactions and responses at the team and personal level



Our team has developed processes and practices that engage organizations on all three elements in a powerful way and at a purposeful level.

We found the best companies were highly effective because they drove knowledge and capability down into their middle level ranks, making the job of the innovation champions much easier, and thus more effective.

- We have developed a number of highly effective approaches in our [Action Planning Workshops](#) that accelerate the three dimensional elements: Knowledge, Capability, and Acceptance.

The Best in Class companies had processes to address a number of issues that killed innovation across organizational boundaries. “Not Invented Here” was the number one cause of resistance.

- We have been able to extrapolate key processes and practices that increase the speed, breakthrough thinking, and level interpersonal engagement of innovation teams.

Differentials in thinking are necessary to make any innovation come into reality. However, too many times, when differentials in thinking and culture interact, the result is dismal: conflict, rejection, denial, and frustration.



5. Legal, Contractual, & IP Regeneration

Legal Blockages were cited as the number one obstacle to innovation in our study.

Old school thinking about protection of legal rights to intellectual property is a time-honored tradition. And, to some extent, it worked in the older, slower moving, more stable world of the earlier portion of the last century.

But our study we found that between 1985 and 1995, a massive shift in the “clock speed” of business occurred. When this shift happened, particularly in higher technology industries, most legal instruments and strategies became obsolete. Terms and conditions were old and stale before the ink was dry.



However, the vast majority of lawyers tended to their legacy thinking.

In Silicon Valley, some legal thinkers began to realize that that the half-life their client’s technology was only 6 months, and thus the half-life a contract might be the same. Then, for some, the focus began to shift.

The Best Engine of Innovation companies have shifted their legal thinking, sometimes dramatically. They believe:

- It is better to invent the future than protect the past
- Litigation, ultimately, has very limited value as a legal strategy, either offensive or defensive
- In a fast moving world, where innovation was paramount, the value of the contract was inversely proportional to its volume of pages
- Contracts, while still having value, needed to be coupled with other key agreements

We have been able to extract some of the core elements of this legal thinking, along with legal templates for increasing the innovation flow, its speed of development.



6. Economics, Metrics, & Rewards

Metrics are more than just after-the-fact measures of success. The right metrics are aligned with strategic goals and rewards systems. Metrics can drive innovation, or, to the contrary if poorly designed, actually hinder innovation. Just as your car engine monitors critical functioning, like gas consumption, oil pressure, and temperature, no Engine of Innovation is complete without a metrics model to monitor and adjust its performance.

Everyone in business wants their innovation to contribute substantially to their bottom line. While this contribution was very impactful to the best company's bottom lines, they were not myopic in their measures. They set up a set of leading indicators that would measure those factors that would tell them the bottom line would be raised substantially.



- We have created a very powerful metrics model which will both focus and monitor the Engine of Innovation.

Innovation is risky business. Not all innovation is created equal. Much time, human energy, and money can be expended going down rat-holes.

- Our Risk Analysis model will help determine and set parameters for managing risks.

Particularly in the Supply Chain and Outsourcing arena, there is far too much emphasis on price and cost cutting for those suppliers who are delivering strategically critical products, components, sub-systems, and services. The best companies recognized the unique differential between commodity vendors and strategic suppliers.

- We have developed and effectively tested a powerful EconoMetrics model and set of associated best practices for Supply Chain and Outsourcing that will transform a vital portion of these relationships into Engines of Innovation. Part of this model enables a shift in the currency from price to innovation.

The best companies made sure that people aligned their rewards with their metrics to prevent dysfunctional performance. This is much more important and much more complex than most people think.

- We have set of best practices that enable this alignment to occur with a much higher order of precision.

Continuous Improvement is a living ideal in the best companies. They put very effective, but simple [diagnostics](#) programs in place to monitor each of the innovation arrangements to ensure continuous improvement in the co-creative relationships which underpin their success.



APPENDIX

12 TWELVE STANDARDS for BEST PRACTICE ARCHITECTURE

All great architecture has core Principles, Processes and Practices that are held at the core of the Profession. (Below are the Standards I applied to the selection of alliance best practices when choosing them for the Alliance Profession. I list them here as they might have similar applicability for the Profession of Innovation Architecture to ensure the quality and endurance of the outcome.)

1. **Applicable:** *Does the principle have applicability to nearly all situations, regardless of industry or culture?*
2. **Actionable:** *Will the principle truly work in practice, or is it just nice theory?*
3. **Understandable:** *Can this principle be simply communicated to those involved?*
4. **Verifiable:** *Can we clearly observe the changes when the principle is put into place?*
5. **Measurable:** *Is there a method of measuring this principle's effectiveness in action?*
6. **Controllable:** *Will the principle enable more effective control of direction, intensity, speed, etc of the alliance?*
- 7) **Diagnosable:** *When there is a problem, can we see the problem clearly, do we have a way to recognize the misapplication of the principle?*
- 8) **Prescribable:** *If an element is missing, can the principle be injected into the system to cause a cure?*
- 9) **Replicable:** *Can we recreate a positive result, time and again?*
- 10) **Trainable:** *Can operational managers successfully acquire the skills and knowledge required for implementation?*
- 11) **Valuable:** *Is the principle really essential, or merely a superfluous nicety?*
- 12) **Predictable:** *Can we foresee, in advance, the positive or negative results?*