

Liberating the Innovation Value of Communities of Practice

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Evolutionary Context

Innovation and Its Big What-If's: Invitation to a Learning Journey

Innovation means, fundamentally, change, being responsive to life in its full splendor of constant dance and fluctuation. Responsiveness to its quickening changes defines our viability. Innovation is a creative act by which we birth value and affirm our capability to evolve as people and organizations.

It is also a personal faculty of each of us; the desire and capacity to innovate and make life better is present in every human. That is, until the uniformizing and numbing conditions of life in modern organizations kill it. Yet, there are companies that can be proud of their role in innovation and creating the human and technological conditions enabling it. What makes one corporate culture a hindrance and another one an awakener of the innovative spirit in their members? Whatever it is, it is also a factor that will separate the losers and winners in the game of business.

The volume of public and managerial discourse about innovation is noticeably increasing year after year. It is a good thing—even if it is frequently only talk. Somehow, it still reflects a gradually awakening awareness that innovation is the only alternative to stagnation and decline. The “innovate or die” mantra vibrates in boardrooms around the world.

If you are in business, you know that staying relevant to your markets depends on the innovation capacity of your people. It is saddening and unacceptable just how small the shreds are of that capacity that most businesses can evoke and engage today.

What is saddening is to think about all of the unused—therefore wasted—capacity for innovation that dies off in offices and factories around the world, day after day, when innovators are pushed back with the “don’t rock the boat” rule of the status quo. The economic and human cost of the lost opportunities for innovation is getting higher every day.

What is unacceptable is the idea that there might be any reason to put up with the on-going waste of creativity and innovation by outdated structures and processes of organizing work and learning.

What if the “revolutionaries” are a minority today but will be the majority as the Web-generation of kids enters the workforce and becomes the women and men who want to use their full capacity to create, innovate, and make their work more QuadE: more Effortless, Effective, Efficient, and Enjoyable?

What if they wanted to work only in or with organizations that have learned how to keep them interested and engaged? Will your organization succeed in attracting them if one of their demands is opportunity for meaningful work and innovation?

We know that it is much easier said than done, and we do not claim in this chapter that we will tell you how to do it. Instead, we invite you to the learning journey that we are on. Our driving question is this:

How can organizations realize the most powerful potential for innovation—the collective intelligence of

their members?

Collective Intelligence

"We need a collective intelligence of a kind that may not have characterized the human species in the past."¹

Reaching a higher level of collective intelligence became key to survival in organizations affected by fast-moving technologies and markets, as well as at the level of our species as whole.

Collective intelligence is the capacity of human communities to enable their members to reach their highest potential and to co-evolve toward more complex integrations through collaboration and innovation in mutually supportive relationships.

Where does that capacity come from? What are the dynamics by which it emerges? When does a community of learners become a community that learns? When does a collection of intelligences become a collective intelligence? Why do these questions matter? Because they focus our attention on the transition point at which more complex capabilities appear in human groups. For a community to be a social organism that learns—beyond its members' learning—it has to have a purpose larger than the individual benefits of its members and a nervous system², a network of conversations supported by an enabling infrastructure.

The size of the collective learner can be a team, a global organization, or even a whole business ecosystem. Their collective powers of sensing, understanding, reasoning, and problem solving—their collective IQ—can limit or fuel their performance and potential to evolve, depending on how low or high that IQ is. If a high collective IQ is antecedent to an organization's capacity to evolve, then what is antecedent to collective intelligence?

Collective intelligence emerges from the interplay of three evolutionary trends:

- **Collective intellect**
- **Communities of practice**
- **Co-evolutionary technology**

In the next sections, we will explore some issues of how they interact. By understanding them, your enterprise can turn them into a unique strategic advantage. Supported by the combinations of the three evolutionary trends, it is hard to lose.

Collective Intellect

¹ Seven Tomorrows, by Paul Hawken, James Ogilvy, Peter Schwartz, (Bantam, 1982), based on research done at Stanford Research Institute.

² The concept of "organizational nervous system" was introduced in The Quest for Collective Intelligence chapter by George Pôr in "Community Building: Renewing Spirit and Learning in Business", New Leaders Press, 1995, <http://www.vision-nest.com/cbw/Quest.html>

“Collective intellect” refers to the cognitive powers of people aggregated, combined, and augmented by their communities and organizations. They include collective perception, memory, and discernment, as well as collective intuition, imagination, and collaborative learning.

In front of our eyes plays out a most tumultuous phase in humankind’s evolution: the sudden and dramatic increase in reach and depth of our collective intellect and creativity. Their first jump became visible already to a social observer in the 19th century:

Marx suggested that at a certain point in the development of capital the creation of real wealth will come to depend not on the direct expenditure of labour time in production, but on two interrelated factors: technological expertise (or ‘scientific labour’) and organisation (or ‘social combination’). The crucial factor in production will become the ‘development of the general powers of the human head’; ‘general social knowledge’; social intellect; or, in a striking metaphor, the general productive forces of the social brain’.³

Since the first jump provoked by the transition to the industrial era, the recent birth of the Web and its associated technologies triggered a second, much larger jump in the evolution of our “social brain.”⁴ The growing variety of human experience, recorded as widely accessible digital memory and knowledge, is only the visible tip of our collective intellect. The work of all the successful inventors and explorers of the past lives on, and it is combined and recombined in newer and newer patterns of creation, in countless manifestations. With every new combination, we use the free gifts from humankind’s collective intellect.

Shared knowledge captured in vast paper-based and digital libraries, corporate knowledge ecologies, popular myths of an era, web-rings and blogs of a technical practice, etc. is a fertile soil that keeps being cultivated by various formal and self-organizing learning communities. The fastest-growing type is the “community of practice” (CoP). These communities and the interstices between them—when supported by the right infrastructure and unfettered by bureaucracy—are the most potent source of permanent innovation.

Could it be that in the knowledge economy the collective intellect seems to dislodge privately owned forces of production (labor and capital) from the center of value creation? Would it be the foundation for such previously unheard possibilities as, for example, “open source” and other new forms of organizing work, based on distributed leadership, voluntary participation, and mutual accountability? These same features also characterize CoP.

³ Cyber-Marx, by Nick Dyer-Witheford (1999) <http://www.amazon.co.uk/exec/obidos/ASIN/0252067959/>

⁴ The “social brain’s” relation to collective intelligence and systemic wisdom is outlined in “Designing for the Emergence of a Global-scale Collective Intelligence: Invitation to a Research Collaboration”, by George Pór, <http://www.co-i-l.com/coil/knowledge-garden/kd/designing/>

Communities of Practice

From the zillions of CoP definitions, we have chosen two—as starting points—that show two very different sides of the same coin that reminds us of “näringsliv,” the Swedish word for business, which literally means “nourishment for life.” We nourish life by cultivating valuable relationships, as well as by engaging in economic value creation and exchange. Communities of practice are the sweet spot of those two dimensions reflected in the two definitions that follow.

1. Communities of practice are groups of people who share a passion for something that they know how to do and to interact regularly to learn how to do it better. — Etienne Wenger

This aspect refers to the fact that communities of practice are free associations of people who chose to improve their crafts together. As they do so, they develop new productive capabilities, individual and collective, which are sources of value creation in knowledge-based economies.

2. A group of self-governing people whose practice is aligned with strategic imperatives and are challenged to create shareholder value by generating knowledge and increasing capabilities. — Hubert Saint-Onge

This definition stresses an equally important aspect of CoP in business context, its alignment with the strategic objectives of the organization, of which they are a part. In best case, a CoP is characterized by both definitions, the one that emphasizes community and passion, and the other focused on shareholder value and accountability. In some cases, such as CoP organized in the context professional association, the second perspective may not be relevant. Building on Wenger’s and Saint-Onge’s definition, we proffer:

Communities of practice are self-organizing and self-governing groups of people who share a passion for the common domain of what they do and strive to become better practitioners. They create value for their members and stakeholders through developing and spreading new knowledge, productive capabilities, and fostering innovation.

A recent report by the American Productivity and Quality Center says, “Communities of practice are the next step in the evolution of the modern, knowledge-based organization.” If APQC is right, as we believe it is, why is it? How did communities of practice, this fast-growing socioeconomic life form become not only a potent source of value creation in today’s knowledge economy, but also the model for the very future of the modern organization?

It all started around the turn of this new century with the emergence of new forces of production: new technologies and new kind of aspirations of large numbers of young and not-so-young knowledge workers regarding their work and working conditions. The latter is well reflected in the following questions:

“Does your company waste any of your time, attention, ideas, knowledge, passion, energy, or social networks? How respectful is your company of your time and attention, and is it focused on using them

wisely and effectively?”⁵

These questions are rarely raised in the workplace. Once they are, we will have an indication of the coming end of the “person as cog-in-the-machine” era.

People who resonate with those questions already are likely innovators and early adapters of new trends. Among them we will find natural attractors and promoters of communities of practice.

Smart leaders do not turn CoP into yet another corporate program to roll-out but encourage HR and KM to discover them and power them up with supportive policies and enabling technologies.

Co-Evolutionary Technology

Since the dawn of humankind, our capacities to sense, learn, develop mental models, and remember have always been co-evolving with the tools available to support them. That process can be envisioned as two interconnected, dynamic spirals, the human and the tool systems, driving and being driven by one another’s spin.

The human systems include our needs and aspirations, language, and our various methods to discover, organize, and use what we know. The tool system includes hardware, software, and communications protocols. The needs defined by the human systems drive the evolution of the tool system. The new capabilities offered by new and better tools enable and pull the evolution of the human systems. The move of CoPs into the center of value-creation opens the possibility for the move from their blind evolution to conscious, intentional co-evolution.

We will know whether we are there already when the infrastructure needs of self-organizing knowledge communities will successfully inform the product development agenda of a growing number of toolmakers. That path will be densely packed with barriers; the old habits of command-and-control will not die fast. However, higher value and complexity tend to get produced by the best combination of the available, advanced forces of production, such as Web-enabled CoPs.

The interplay of communities of practice, global-scale collective intellect, and co-evolutionary technologies has the potential to liberate the innovation value currently trapped by obsolete forms of organizing productive capabilities. To realize that potential, evolutionary leadership needs to commit to liberating the innovation value of CoPs in all four dimensions: social, business, knowledge, and technology innovation. It also needs to learn mastering the arts of two particular forms of innovation: radical and disruptive.

⁵ Work 2.0: Rewriting the Contract, by Bill Jensen, <http://www.amazon.com/exec/obidos/tg/detail/-/0738205699/>

Liberating the Innovation Value - What Does It Take?

Four Fundamental Forms of Innovation

The word “innovation” covers a wide variety:

Incremental innovation — Ideas implemented to achieve gradual improvements in existing products and/or processes. Its development path is continuous and managed by a linear, phase-gate process. It is carried out, typically, by (cross-functional) project teams within business units.

Breakthrough innovation — Combines strengths of existing products and/or processes into offerings presented to adjacent markets serviced frequently by an adjacent line of business. Its management hinges on the balance of autonomy and coordination.

Radical innovation — A product, service, or process that alters a social or business practice to an unprecedented one. Its development is nonlinear, surrounded by uncertainty, and requires discovery learning. Its driving actors are, typically, executive sponsors and/or cross-functional individuals and networks.

Disruptive innovation — A form of radical innovation that inherits most of that innovation type’s characteristics. Its uniqueness is in its capacity to redefine the rules by:

- Altering the basis for competition
- Changing the economics of an entire industry
- Making obsolete more expensive products or processes

Each of the four forms of innovation has an associated set of conditions in which they perform the best. Given our space limitation in this chapter, we will examine only radical and disruptive innovation. Their relationship with communities of practice, a key source of all innovation, is the least explored in both practice and theory. Understanding the crucial link between them and CoPs may open surprising opportunities.

Radical Innovation

We defined radical innovation as a product or service that alters some social or business practice to an unprecedented one. There is no sustainable high performance in the radical innovation of products and services that manifests in a high level of market acceptance, unless it is coupled with process innovation of how work is organized in the company. When discussing radical innovation in this chapter, we mean both the internal and market-facing types.

As it can be expected in any emergent field, there are several descriptions of the same phenomenon, each one emphasizing a different aspect. The following aspects of radical innovation seem particularly pertinent to crafting an agenda for liberating the innovation value of CoPs.

Jump in improvement results

Radical innovation exceeds the 5 percent or 10 % year-on-year improvements gained from sharing existing knowledge. It provides 10-fold and even 100-fold breakthroughs.⁶

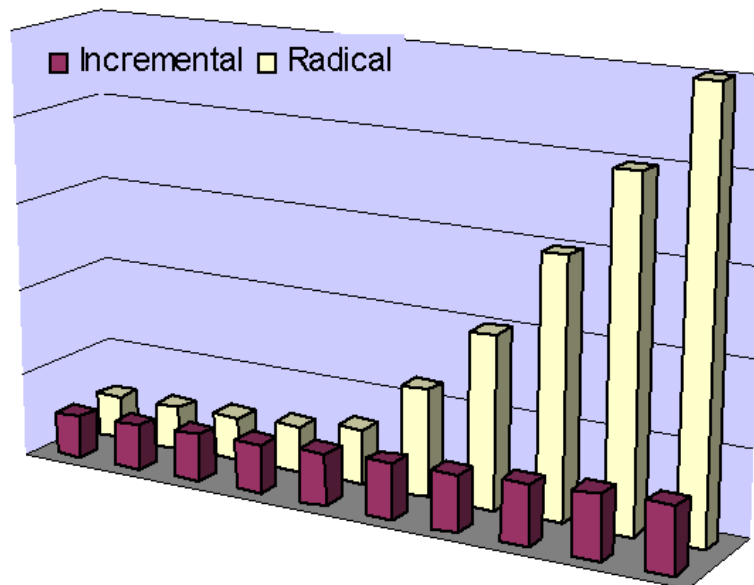


Figure 1. Comparative impact curve of radical vs. incremental innovation

Crossing boundaries

For radical innovation to occur, it is frequently necessary to meld knowledge coming from different disciplines, professional communities, business units, and functions. How well a company is geared up for radical innovation can be gauged by its capacity to continually develop, integrate, and apply knowledge from many diverse sources.

Questioning not only how and what, but why?

Incremental innovation happens at the activity and idea level, but radical or breakthrough innovation occurs when mental models shift. To facilitate such shifts in mental models is a process that is deeply reflective not just on how and what but also on questioning the whys.⁷

Resulting from combination of new approaches and tools

⁶ The Innovation SuperHighway: Harnessing Intellectual Capital for Collaborative Advantage, by Debra M. Amidon

⁷ Gautam Gosh, <http://www.geocities.com/gautamghosh>

New approaches to work and new tools for enabling them can combine into radical innovation to produce surprising results. For example, networks of semi-autonomous, small teams of 3 to 5 creative people using weblogs for collaborative discovery and idea recombination have been helping Google to become an innovation leader of the online industry.

Radical innovation creates great surprises that can be unpleasant or pleasant, depending on whether you are trying to catch up with or generating it. Consider the following real-world scenarios.

- A large telecommunications company is facing competition from the Internet that threatens to shrink its long distance calling revenue. New product ideas are needed that might entail completely rethinking the business. The problem is so complex that the company needs people across the organization to think in parallel and outside of the box in order to invent a new future. The company is building on existing knowledge networks equipping employees with new, lightweight collaboration technologies that together change how they solve problems. A culture of radical innovation is being born, and it makes seemingly impossible obstacles surmountable.
- An enterprise software manufacturer realizes that its core business is being eroded by the open-source software movement. With cheap and free software becoming increasingly available, the company needs all of its product development groups thinking in new ways about how to incorporate the new technologies, while still retaining the primary value to customers that drives revenue. Specific challenges related to developing the new product strategy are climbing high on the "issues lists" of the company's communities of practice.
- A longstanding hardware company has been growing by acquisitions. They had their share of growing pains and culture clashes. For the company to succeed and thrive, a new product development culture had to emerge that not only took the best of all the original companies and tried to fit them together, but was also targeting emergent opportunities for radical innovation. Those opportunities were identified when colleagues in the same practice of the old and new components of the company started sharing notes and connected the dots of disjoint capabilities and resources.

On May 2, 2003, Google inventoried 8,720 web pages mentioning radical innovation. Five months later, that number reached 10,400. That is roughly 13 new "radical innovation" pages per day. What is causing the rising popularity of this concept? Our take is that standard methods of innovation, such as incremental improvement and pilot project development, are too constrained by internally reinforced assumptions about current ways of doing business, and they will not save a company from becoming irrelevant on the market in the face of fast-moving opportunities and challenges.

In times of accelerated and discontinuous changes, only growing capacity for radical innovation will ensure that the company can catch up with its markets that innovate faster than any company can. Yet numerous research studies have shown that "it is often difficult to get support for radical projects in large firms where internal cultures and pressures often push efforts toward more low risk, immediate reward, incremental projects."⁸

⁸ Radical vs. Incremental Innovation, by Walter Derzko, at the European KM Forum

Disruptive Innovation

[C]ompanies introduce sustainable innovations and continually improve their products and processes, but they get caught unaware by newcomers who have introduced disruptive innovations, capturing and transforming traditional markets.⁹

Disruptive innovators can do that because, by definition, they redefine the rules of the game and dislodge more expensive products, processes, and infrastructure. Disruptive innovation is the main vehicle of commoditization that makes products and services cheaper by displacing older technologies and business processes that consume more resources.

Not all industries are equally sensitive to it. Consumer electronics, telecom, computers, and online services certainly lead the way, but banking, airlines, pharmaceuticals, and healthcare, even general merchandizing and energy industries, are not protected from disruptive innovation.

For instance, collaborative filtering at Amazon.com started showing signs of “understanding” our reading habits and making truly useful recommendations, which changes the patterns of how an increasing number of people prefer buying books. To understand the anatomy of disruptive innovation, let’s take a closer look at the world of telcos and see what worries some industry executives.

The on-going commoditization of technology cannot be undone. Products will continue to get better but they will also continue to fall in price. In the face of these dynamics jobs will melt away.... We are witnessing the commoditization of the entire industry. It is not just telecom. It is telecom and all of information technologies. Both industries are finally maturing across the board. While new products are appearing, they cost less and do more.

When new software is needed, it may be designed in North America or Europe. But the code is written in Bangalore, or Moscow, or Shanghai. Hua Wei is sued by Cisco for doing what is, in effect, a commodity knockoff. Back 'home' a handful of folk do the integration, first of the software, and then of the firmware and prototype hardware. They ship the result back to Bangkok or Kuala Lumpur for replication and assembly. Container ships bring the boxes back to ports like Yokohama, Newark, or Antwerp for sale on the shelves of Best Buy and Comp USA and other warehouse retailers. Prices are driven inexorably downward.

The legacy telco network is one where the monopoly must cut its own throat to try to compete with open architecture Internet upstarts that would take away its more profitable business customers.... When voice no longer rides on the TDM transport that was especially designed to carry it and is just a packet-encapsulated application on an IP network, the new central office is no longer a building housing five million dollars worth of equipment. It fits on a desktop using SIP, SIP proxy servers, and ENUM databases. It costs well under five thousand dollars and delivers an entire range of services not possible to derive from now obsolete TDM hardware costing a thousand times more.¹⁰

⁹ The Innovator’s Dilemma, by Clay Christensen, 1997

¹⁰ The Paradox of Commoditization, by Gordon Cook - <http://www.cookreport.com/12.03.shtml>

We may not get all the industry-specific abbreviations but get the gist of the story: disruptive innovation can represent a value proposition as different from the products and services that it displaces as the difference of personal computers from their bulky, room-filling predecessors. Distributed and web-connected processes displace less efficient ones in commerce and industries, thus both reducing waste, and jeopardizing the viability of companies that are slow or too incremental in their approach to innovation. Challenging the sacred cows of one's industry and management beliefs calls for comparing, playing with, combining, and transcending mental models. To do so, your organization needs to be comfortable with probing its own collective mental models, questioning the "why's" as much as the "what's" and "how's." It is a discipline for which well-facilitated communities of practice are excellent training grounds.

Innovation Drivers, Barriers, and Enablers

To liberate the innovation value, the organization first needs to inventory the key factors affecting the innovation process in its various stages, factors that drive it and others that hinder it. Intimately understanding those factors provides a context and insights about altering the innovation process or even radically innovate it. Different schools of thought support different methodologies for mapping those factors. Because of the innovation factors' complex interrelatedness and cross-impact, choose a systemic methodology supported by an advanced visual language to portray them, such as Contextual Mapping¹¹.

Innovation drivers

Classic drivers of innovation—reducing cost and gaining more productivity—are still essential and there are also emergent drivers, such as the need to defeat information overload.

Classic drivers include:

- Market development and market share
- Enhanced technological competence

Emergent drivers of innovation include:

- Globalization of markets and competition.
- "Increasing complexity multiplied by urgency" (Douglas Engelbart)
- Talent wars

These factors affect almost every enterprise, and not all respond to them equally well. How responsive a company is in its market-facing innovation depends also on how agile and well connected are its business processes, internal and external.

What triggers innovation frequently is a mission that cannot be achieved the "way we've always done it here." Looking for powerful triggers of internal, organizational innovation, look into the gap between a strategic challenge or opportunity and the organization's ability to respond to it in a timely manner. Reviewing next year's strategy plan with all members of the organization, you will see which of the key

¹¹ More information on contextual mapping can be found at <http://www.grouppartners.net/map.php>.

objectives are best suited to drive innovation. They will also set the context for discovering, inventorying, and working with the barriers and enablers of innovation.

Innovation barriers

The list of **barriers** varies not only from one organization to the next, but also even within the same organization from one period, under one leadership, to another. The process chosen to develop that list is just as important as its result because the right process can also raise the innovation-mindedness of those engaged in it. (For an example of such process, see the section on Generative Action.)

The main barriers to innovation are organizational, cultural, and technical.

Following are three examples of **organizational and cultural barriers** that we frequently observed in companies that we have worked with.

- The number one culprit is the **“not invented here”** (NIH) syndrome caused by inward-focused attitudes and cultures that over-protect the status quo. NIH can be reinforced by a lack of strong ties that connect the organization’s CoPs to professional networks outside. The effect of this syndrome can be weakened through appropriate facilitation of communities of practice, encouraging the cultivation of outside professional contacts.
- Techno-centric views and processes of managing the organization’s knowledge flows and communities of practice frequently **undervalue the role that social capital and trusted relationships play** in knowledge sharing, in general, and grassroots innovation, in particular. We need to transcend the debate between the technocratic and humanist wings of knowledge management (KM) and value the leverage that innovation can get both from trust-based relationships and advanced information and communication technologies.
- Another barrier that innovation-conscious organizations must address is the management practices that regard innovation as something that can only be driven **from the top down**. This attitude manifests in “small things,” such as withholding information and knowledge from those without an official need to know or holding back resources that communities could use for feeding the innovation pipeline. Isolated acts of those kinds of behavior easily add up to unintended results that alienate people and the communities from the business strategy and their capacity to innovate.

To understand better the technical conditions that hinder innovation, let’s look at a picture of what the right use of the right technologies could enable:

We anticipate a work environment in which ... an individual's thoughts, decisions and actions become amplified and enhanced by an automatic, seamless integration with the thoughts, decisions and actions of others. And the collective enterprise becomes centered on a deeply cross-linked repository of accumulated knowledge and action, which is completely open for exploitation and application to any new team activity. It is only with this kind of infrastructure

in place that the true potential for radical enhancement of efficiency and productivity can be realized.¹²

The following examples of **technical barriers** become most visible when seen through the lens of creating sustainable, Web-enabled knowledge ecosystems.¹³ They were identified by Lee Iverson in online conversation about Ubiquitous Collaboration¹⁴ (emphasis added by author):

- [T]he **tyranny of format**, the fact that an enormous amount of what could be useful and reusable knowledge is trapped inside proprietary or inaccessible data formats: Much of this reality is driven by the fact that virtually every new application and new version of an application involves the creation of a new, incompatible data storage format. The barrier to sharing even the products of work, much less the process, becomes one of incompatibility of application formats.
- [T]he **transience of history**, the loss of many of the most important pieces of collective knowledge to an unrecorded and imperfectly recalled past. Consider the ubiquity and importance of meetings in collective work, all the way from impromptu "water-cooler" meetings to brainstorming sessions to formal meetings. Every aspect of one of these meetings which goes unrecorded and thus unintegrated into a collective repository, is thus inaccessible to anyone but the participants...Even in situations which are completely computer-centered, the history of a document and the connection between email about a document and the document itself is often never collected or linked together and is thus inaccessible to future collaborators or just someone trying to reconstruct an argument.
- In many cases the vast preponderance of potentially exploitable team knowledge is distributed in a completely inaccessible way on tens or thousands of un-indexed and often inaccessible individual computers. Many large enterprises attempt to solve this problem with central data stores and shared file systems to ensure that the products of work are centrally maintained and accessible. Unfortunately, these systems become mandated, **imposed solutions** that often do not significantly enhance the productivity of individual users... The means by which the central stores are organized are rarely appropriate or adaptable to the range of work that individuals need to perform, so the central store is almost always 'for management' and not 'for me'.

While those cultural and technical obstacles are relevant to all forms of innovation, there are other barriers, particularly pertinent to radical and disruptive innovation, that must cross many boundaries to succeed. Boundaries intrinsic to how work is organized can become major barriers to radical innovation that requires diversity in expertise and knowledge. Those boundaries include the following:

- Functional
- Hierarchical

12 Ubiquitous Collaboration, by Lee Iverson, <http://www.bootstrap.org/dkr/discussion/2683.html>

13 The concept of the knowledge ecosystem was popularized widely by Knowledge Ecology Fair '98, and elaborated on in George Pór's article on "Nurturing Systemic Wisdom through Knowledge Ecology" <http://www.co-i-l.com/coil/knowledge-garden/kd/KE.pdf>

14 *ibid.*

- Technical
- Geographic
- Cross-cultural

For successful radical innovation, diversity is required not only to generate new, surprising ideas, but also to validate them. Whether the boundaries outlined here become barriers or bridges, depends on whether they are plagued with mistrust and coordination deficiencies or blessed with an effective boundaries management.

Of course, not all boundaries have to be bridged at the same time for radical innovation to occur, but the fewer obstacles hinder the boundary-spanning by communities of practice, the more likely that CoPs can raise the organization's innovation performance.

Innovation enablers

The main enabler of innovation is a holistic knowledge strategy based on the recognition that the highest-value asset/capacity of any company is not simply its members but the trustful relationships and the network of productive conversations among them.

Other enablers include:

- There is no more powerful magnet for innovation than a compelling goal or challenge. The more significant the challenge and the leadership's support to meet it, the more energy it will attract and mobilize for innovation.
- We cannot overemphasize the role that skilled knowledge architects and community facilitators of productive conversations can play in enabling innovation. No matter how sophisticated is the company's collaboration platform, it will take trained knowledge and community professionals to get the most out of it for enabling innovation.
- Structures, processes, and events designed for effective cross-fertilization of ideas, knowledge, and practices across business units and other boundaries increase opportunities for innovation. For example, methods such as knowledge cafés, virtual knowledge fairs, digital suggestion boxes, and other methods can reward high-value knowledge sharing in many ways.
- Communities of practice can provide a safe environment where the ideas and creativity of members are valued, outside of the direct control of middle and upper management. That, too, helps to lower the barriers to bring new and perhaps unexpected ideas to the table.
- Large-scale innovation is built on complex networks of relationships among autonomous and interdependent actors. In their role as employees, people tend to be less autonomous than as members of a community. Increasing autonomy in both roles is an enabler of large-scale innovation.

- The main technical enabler is a new generation of collaboration tools, frequently referred to as “social software.” These are not a new edition of centralized, one-size-fits-all, enterprise-wide platforms but radically simple personal and team publishing tools (*blogs*), such as the one used in H-P Labs, conversation engines (*forums*), and group authoring devices (*wikis*).

Regarding social software as an innovation enabler, the organizations that will get its full benefits first will be probably the ones that promote new ways integrating the local development of innovative ideas with the global coordination of their innovation management procedures.

Last but not least, a potentially major booster of the organization’s innovation performance is an explicit innovation architecture configured for synergy across its four domains: the business, organizational/social, learning, and technology innovations. Both barriers and enablers in each of these domains can reinforce one another to foster or inhibit innovation. This is why we focus our attention on understanding the innovation architecture.

Innovation Architecture

Did you know that teams of coaches and other sports professionals carefully study the performance of top runners from all angles: from the best-performance shoes to the ergonomics and aerodynamics of their movements? If you want to become the most admired innovation company in your industry, you have to cultivate the same systemic approach to innovation performance, and do it corporatewide.

By sharing their mental models, innovation champions can develop a shared understanding of and capability to grow and strengthen an innovation culture. Hoping to help you realize that potential, we invite you to explore the Innovation Architecture™ framework outlined here¹⁵. It is designed for helping you differentiate and consider the technological, organizational, business, social, and other conditions that facilitate or hinder innovation.

“The science and art of architecture lie in skillfully relating parts to a greater whole, creating a form uniquely appropriate for the exercise of a specific set of functions.”¹⁶ Sound innovation management relies on a well-designed architectural framework that integrates the business, social, learning, and technology innovation into a coherent whole that can inform the parts. A carefully constructed innovation architecture will allow your organization to:

- Accelerate its innovation cycle
- Reduce mistakes in innovation management, which are due to not accounting for the complexity of radical innovation and what is required to harmonize the interaction across its four domains
- Orient evaluation of choices and trade-offs among numerous innovation options
- Coordinate collaboration between innovation management, CoPs, executive sponsors, facilitators, and all those who have a stake in the innovation’s success
- Let spontaneous emergence co-evolve with intentional design in innovation projects

¹⁵ Derived from the Community Design Architecture, which is based on two decades of George Pór’s research and consulting work with innovation communities in various industries.

¹⁶ The Web of Inclusion: a New Architecture for Building Great Organizations, by Sally Helgesen

The innovation architecture of each firm is different from the one used somewhere else, but the framework that we suggest for building them provides some common benefits to all. Innovations in each of the four domains may strengthen or weaken each other, depending on how well they are designed for mutual enhancement and the emergence of multidimensional synergies. The **four domains of innovation**—most relevant to the purpose of our learning journey—are:

- **Business**
- **Organizational/Social**
- **Learning**
- **Technology**

They do not stand by themselves, rather, as parts of the whole architecture, and each domain is an interdependent component. The diagram below shows some examples relative to the four domains of innovation pertinent to organizational performance.

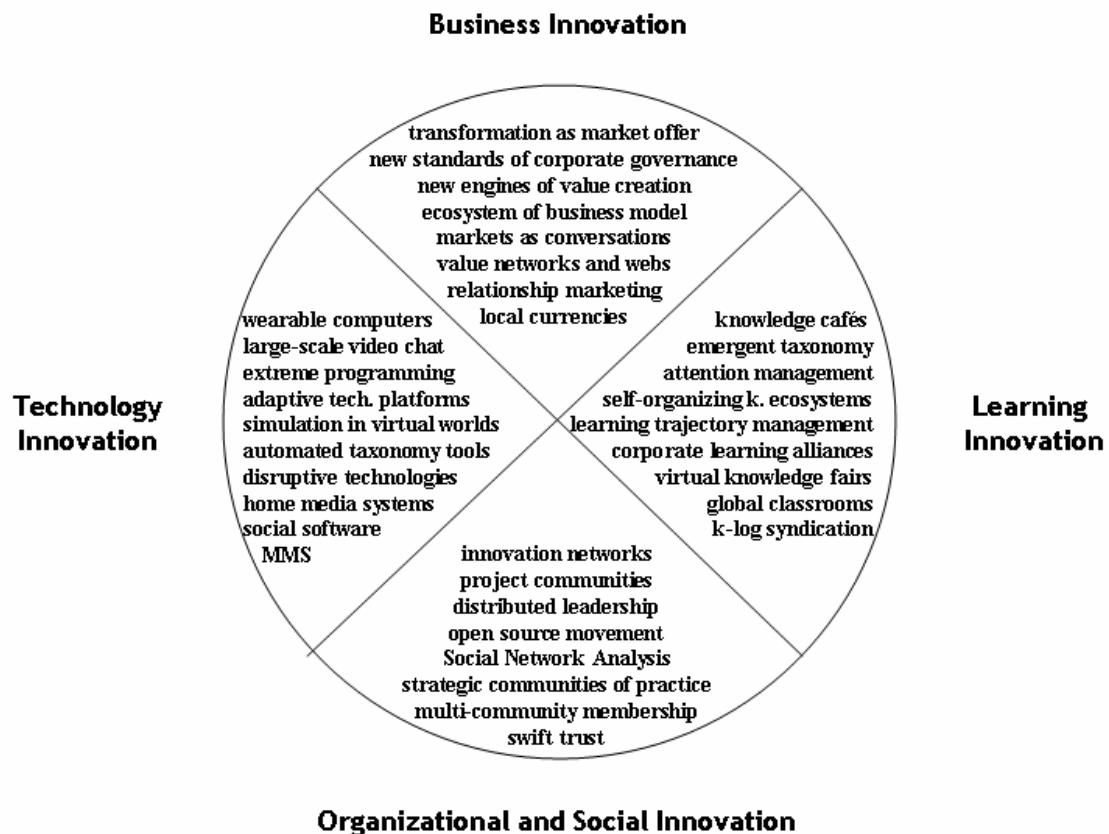


Figure 2. Innovation domains with examples

This map is in continuous change and evolution, the same way as the territory it is trying to reflect is in constant flux. A number of specific innovations labeled on the map will be eclipsed by more dynamic ones,

probably even before this book leaves the print shop. This simple four-fold model will be offered as a pattern of continuity and coherence throughout this section and a framework for innovating the innovation process.

Older innovations get replaced by newer ones, if their users can derive more value from them. They feed on one another, and breakthroughs are occurring in their interactions in their second and third order cross-impact. The strategic management of radical and disruptive innovation requires visual tools for attenuating and understanding the complex, interdependent forces at play on the innovation field.

The next map can be used for investigating the key value-adding relationships, two-way value flows, across the four domains of innovation.

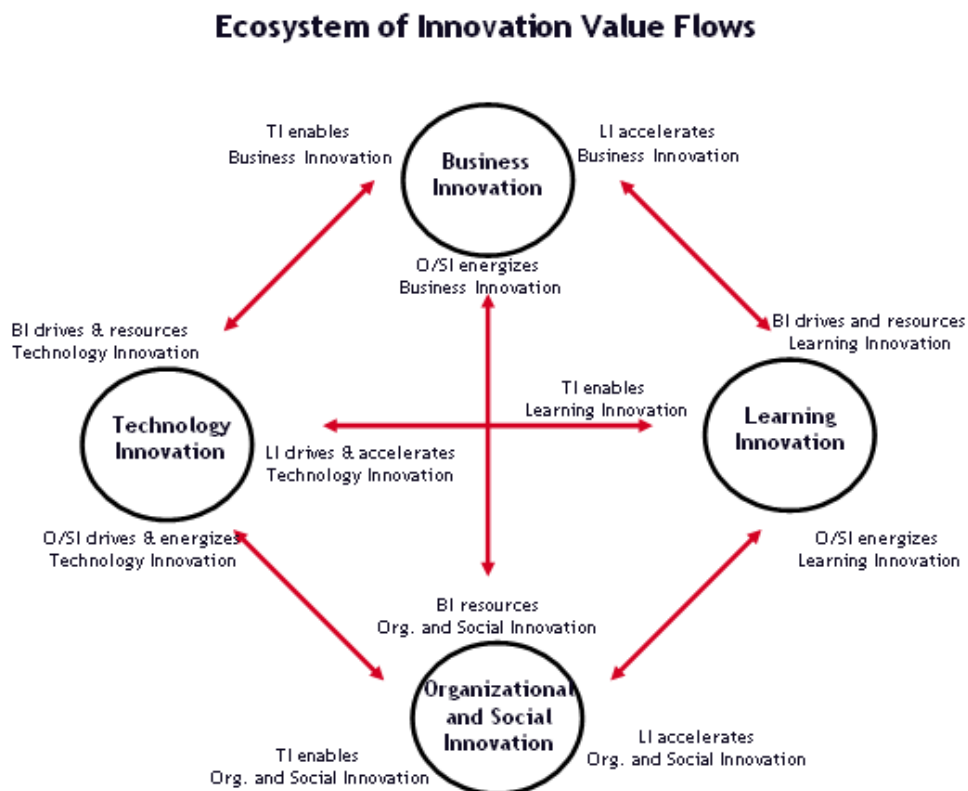


Figure 3. Ecosystem of innovation value flows

Here, we shift our attention from the *structure* of large domains of innovation to the *nature of interactions* between them. Some of the combinations happen spontaneously, but achieving a dynamic balance across innovations clustered at the four poles can lead to a sustainable raise in the company's innovation performance.

For instance, the good health and vibrancy of a firm's knowledge ecosystem (learning innovation) is a strong factor in the success of its business ecosystem (business innovation). But how does one grow a

robust knowledge ecosystem? Research shows that knowledge flows better within and across communities of practice (organizational/social innovation) when it is shared in the context of trusted relationships. It is well summed up in a recommendation of “HR Strategy for Knowledge Management”¹⁷, published by the European HR Forum: communities of practice are the way forward.”

Understanding the value flows between the four domains is a key to optimizing them for supporting radical and disruptive innovation. Not all four domains need to be involved with all innovations, but cultivating capabilities in all four is essential to sustainable innovation leadership in any industry. The sweet spot for radical innovation is a project that draws strengths from going beyond the state-of-the-art in all four domains.

Imagine that the propeller blades below start turning—the wind picks up momentum and creates a vortex of innovation fed by and feeding innovations in each of the four domains, each supported by the combined power of the other three. How would technology innovation look when the enterprise learns to engage the full power of business, social, and learning innovation to support it? How would business innovation look when the enterprise learns how to put into its service the combined power of technical, organizational/social, and learning innovation?

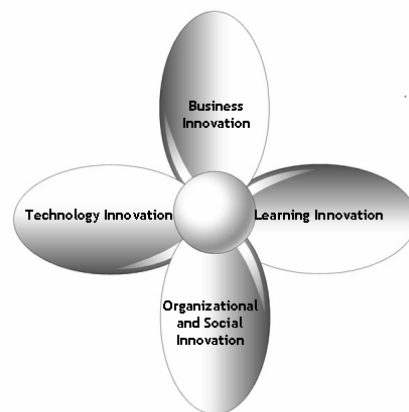


Figure 4. Jump-starting a vortex of innovation

Using those domains of innovation as lenses, we see different things when we look at the whole architecture through one or another lens. The art of innovation leadership is in the capacity of seeing the whole, understanding the interdependence of the parts, while maintaining a keen sense of what combination is needed for the best results, in any particular case.

The CI Innovation Architecture can be used by companies for self-assessment of all four innovation domains. The results can be benchmarked and visualized into a radar diagram (shown below), which

¹⁷ HR Strategy for Knowledge Management, published by the European HR Forum
www.ehrf.org/uploaded/Knowledge%20Management%20Geneva%20-%20report%20Oct%202003.doc

provides an overview of what the current state of innovation capabilities are and what the difference between *present* and *desired* levels is. (We borrowed the idea of using a radar diagram for assessing the four high-level innovation dimensions from Debra Amidon, who developed the more operationally focused, 10-axis Knowledge Innovation® Assessment¹⁸ tool.)

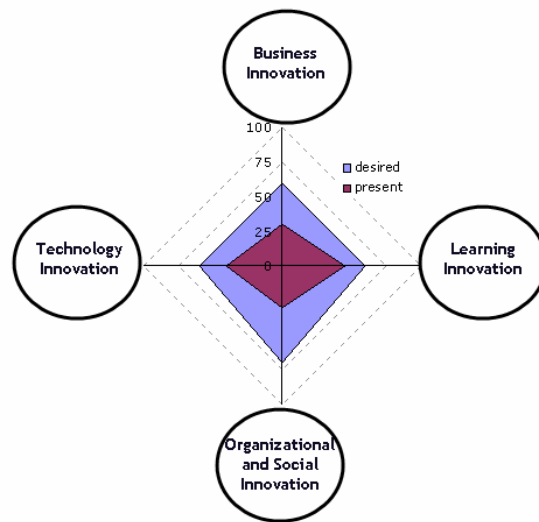


Figure 5. Assessment framework based on the CI Innovation Architecture

Having seen the gap between the present and desired levels of innovation performance in the four domains, the leadership team can reorient the innovation strategy with the aid of the “ecosystem of innovation value flows” (shown in Figure 3). Here is how:

Let’s say, the team agrees that the company scores too low on learning innovation. The signs are loud and clear:

- Training methods are slow to catch up with the requirements of increasing variety in the capability repertory of everyone and every organization.
- Networks of productive conversations are disjointed, fragmented, and frequently inaccessible by those who could contribute and create value with them.
- Centralized tools for complex knowledge work are not tailored to, and fail to account for, the real knowledge needs of individual professionals and executives.

What should the Board decide about how to tackle the situation? What would *you* decide?

¹⁸ Knowledge Innovation® Assessment, by Debra Amidon, <http://www.entovation.com/services/tensteps.htm>

Using the “ecosystem” framework, you can easily generate a set of useful questions, starting with: *What does the Learning Innovation domain need to receive from the three other domains of innovation so that it can inspire and support the whole enterprise?*

Seeing into it gives rise to more specific questions, such as:

- What are the successful experiences in organizational/social innovation (O/SI) that can boost business performance?
- What will accelerate and amplify the flow of value from learning innovation (LI) to selected breakthroughs in O/SI that will result in high business returns?
- Applying LI to which business driver could create results beyond expectations?
- To perform its functions well in relation to the three other domains, what resources does LI need to receive from each of the others?

The balanced way of moving radical innovation further outward on any one of the four axes—thus intensifying the value-creation from it—is through specific projects that support innovation and transformation in the three other directions. Exactly for this reason, communities of practice are a natural vehicle for radical innovation because they have the ability to span all four domains of the innovation architecture at the same time, as well as build on the relationships among all domains.

For instance, when the leadership of the organization treats its CoPs as valued strategic partners (Business Innovation), then the faster filling of the innovation pipeline with good content by communities of practice (Organizational/Social Innovation) will be more likely. What will be required to liberate the innovation value of communities of practice is probably not less than that.

Rapidly benefiting from understanding the innovation architecture

Here is a direct way to check and deepen your understanding of this framework. Not only the development of radical innovation is nonlinear and looping through spiraling cycles, but also so is our understanding of the innovation dynamics, its barriers and enablers. Test the impact of looping, by going back to the Innovation, Drivers, Barriers and Enablers section and applying the “four innovation domains” perspective gained here. Looking again at the list of barriers and enablers through the lenses of the four domains, you will be able to map them in a more systemic way and, because of that, discover new barriers/enablers or new insights about what you have already read.

Innovating the Innovation Process

The work with the highest-payoff in improving innovative performance is to actually innovate the innovation strategy and processes themselves.

Are you among the courageous change champions who focus on the challenging but high-value work of innovating innovation? If so, look at the following four models introduced in this chapter so far as tools for innovating the innovation process:

- The “architecture” model (Figure 2) that provides a systemic framework designed for coherence and sustainability
- The “ecosystem” model (Figure 3), which can be used for optimizing the relationships among the innovation domains
- The “vortex” model (Figure 4), which is useful for invigorating the dynamics of increasing total innovation performance
- The “assessment” model (Figure 5), which can serve as a framework for developing audit tools for the four domains, at the level of the team, community, organizational, or nation

Putting those four models to work in the organization requires commitment and energy: the commitment of the leadership team to reach new plateaus of community-enabled innovation and the energy and enthusiasm of communities of practice that are appreciated and valued partners of management in boosting innovation. A broad design for action to tie them all together is outlined in the “5-Point Roadmap for Liberating the Innovation Value” (see sidebar).

While the classic methods of top-down innovation management have been useful to create incremental or even breakthrough innovation, it frequently fails to mobilize the energy needed to create radical or disruptive innovation.

To innovate the innovation process itself, we have to marry the rigor of formal innovation selection and evaluation processes with the power of collaborative learning and discovery in communities of practice. In the next section, we will explore the innovation value of various kinds of CoPs that are a key to innovate the innovation process.

Communities of Practice

The “Great Symphony” Paradox, or How to Cultivate Disruptive Innovators

“Here is the paradox: You need a great team of people with diverse skills to perform a symphony well, but no team has ever written a great symphony! While cross-functional teams are key players in defining and implementing incremental innovation projects, cross-functional disruptive individuals tend to be key players in defining radical innovation projects.”¹⁹

19 Radical Innovation: How Mature Companies Can Outsmart Upstarts, by Richard Leifer, Gina Colarelli O'Connor, Mark Rice, Christopher M. McDermott, Lois S. Peters, Robert W. Veryzer, Harvard Business School Press (2000)

Who are these “cross-functional disruptive individuals,” where are they coming from, how are they found, and how are they attracted and retained? Given the roles that these individuals may play in innovation, knowledge executives and innovation managers who do not ask these questions do a disservice to their companies.

Disruptive innovators—or as strategy guru Gary Hamel calls them, the “revolutionaries”—are people who have developed talents in multiple disciplines and use them for disrupting wasteful practices in business and society. They prefer working with organizations that learned how to keep them interested and engaged. They are better poised to see and connect the dots of breakthrough possibilities than those with a narrower professional horizon who see fewer dots.

To up its capability for radical and disruptive innovation, the organization needs to have more people with cross-functional talents and aspirations—hence, the importance of the question of where to find them.

A recent study of people managing the supply chain in a large American electronics company has shown “how compensation, positive performance evaluations, promotions, and good ideas were disproportionately in the hands of managers rich in the social capital of bridging structural holes. Ways of thinking and behaving are more homogeneous within than between groups, so people connected to otherwise segregated groups are more likely to be familiar with alternative ways of thinking and behaving, which gives them the option of selecting and synthesizing alternatives.”²⁰

The innovation potential of structural holes

The concepts of “social capital” and “structural holes” are essential to appreciating some pivotal conditions for creating radical and disruptive innovation. As you read on, consider how your organization’s innovation performance may be affected by the social capital of its members.

The structural hole argument explains social capital in terms of the information and control advantages of being the intermediary in relations between people who are otherwise disconnected in a social network. These disconnected people or groups of dense relationships are situated on opposite sides of a hole in the social structure. The value of an individual’s social capital is measured in terms of the number of structural holes the person bridges. In other words, the more diverse and non-redundant one’s relationships are, the more value they provide.²¹

Equipped with that understanding, we may find the study’s finding not too surprising. “Managers whose discussion networks more often spanned structural holes were more likely to express their ideas, less likely to have their ideas dismissed by senior management, and more likely to have their ideas evaluated as valuable.”²²

20 The Social Origins of Good Ideas, by Ronald Burt; <http://gsbwww.uchicago.edu/fac/ronald.burt/research/SOGI.pdf>

21 Social Capital, by Marja Kemppainen et al.

http://www.tuta.hut.fi/studies/Courses_and_schedules/Tps/TU-53.307/assignment/socialcapital.pdf

22 Ibid.

However, the full innovation cycle does not stop at generating ideas and getting them evaluated. In their implementation, it is another aspect of social capital that becomes dominant: what we are ready to do for one another, which is a question of trust. Among peers, trust may flow more easily than across hierarchical boundaries. Because of that, the social capital accumulating in free associations of knowledge workers, such as “open source” networks and CoPs, is probably better suited to interact with and put the power of the collective intellect in service of innovation than traditional work systems.

Where do disruptive innovators come from?

The star of a new hero, the multidisciplinary performer, started rising when corporations realized that they have more talented and ambitious people than opportunities to promote them. Horizontal promotion was invented to move them around and let them occupy a greater variety of jobs during their careers than the preceding generations. Intel and Hewlett-Packard are known to let their employees spawn powerful, albeit informal, personal networks with all of whom they have been working. Horizontal mobility is, no doubt, one of the ways to cultivate multidisciplinary performers, among which there is a higher concentration of disruptive innovators than among people with only one professional identity.

Closely related to that is another factor of membership in multiple communities of practice, which has become a fact of life for more and more people. People with multiple professional identities are more mobile and open to new kinds of challenges.

They see themselves as multidimensional, as opposed to saying “I’m a doctor, don’t expect me to teach you anything” or “I’m just a programmer, don’t bug me with politics,” they’ll say, “Well, right now I’m into this and that and that, and if you have something new to show me I just might take a plunge!”²³

Multicommunity membership supports, at the individual level, the development of human faculties through peer-to-peer learning in as many domains of practice as a person chooses to belong to. Of course the number of domains on which a person can become a good practitioner is limited by time and the complexity of managing multicommunity knowledge and relationships. Social networking and person-centric collaboration tools can attenuate that complexity, thus they promote multimemberships. The fastest way to get smarter in any domain is to join its community of practice.

The implication of multicommunity memberships at the organizational level is increased social coherence and more options for the configuration and reconfiguration of capabilities for value-creation under fast-changing conditions. The shift toward multicommunity memberships is also the most potent booster of the innovation potential of the enterprise. A key factor in fully realizing that potential is liberating the innovation value of the company’s communities of practice.

Why Communities of Practice?

²³ Online Communities and the Future of Culture, by Sébastien Paquet,

<http://radio.weblogs.com/0110772/stories/2002/08/05/onlineCommunitiesAndTheFutureOfCulture.html>

The future belongs to organizations that learned to truly unleash the creative powers of self-organizing project communities, knowledge networks, open source teams, and other new ways of working and learning, based on free associations of people who are passionate about what they do together. Communities of practice are in the center of this widening innovation movement.

The challenging task of leadership is to create work environments, social and electronic, that inspire people to invest their best attention in it. CoPs can be natural allies and learning partners in meeting that task. Future-responsive leaders strengthen them and help them become a valuable and valued partner in such strategic areas as innovation and people development. An APQC study reporting on CoP-related strategies in organizations such as DaimlerChrysler, the World Bank, Ford Motor Company, and Xerox Corporation, informs us:

Communities of practice are included in the budgeting and planning process, are a legitimate way to spend time, are held accountable for producing and stewarding knowledge, and are gradually assuming a formal voice in organizations.²⁴

If so, then isn't it time to explore how to discover and liberate their full innovation potential? Researchers at IBM give even more reasons to us for exploring the vital link between CoP and innovation.

As organizations grow in size, geographical scope, and complexity, it is increasingly apparent that sponsorship and support of communities of practice - groups whose members regularly engage in sharing and learning, based on common interests - can improve organizational performance.²⁵

One of the key performance indicators to which CoPs can contribute is innovation performance and not only the incremental kind as it is commonly believed. There are CoPs that are better poised to contribute to augmenting the organization's innovation performance than others.

What Kind of Communities of Practice?

Communities come in different shades and play different roles in value creation. Using the Wenger-McDermott-Snyder classification, communities can be characterized by more than one of the functions outlined below, but they also tend to gravitate around one of the following areas of activities:

- Peer-to-peer help in problem solving
- Developing and validating best practices
- Upgrading and distributing knowledge in daily use
- Fostering unexpected ideas and innovation

Isn't it likely that the more that those four characteristics a CoP demonstrates, the higher is its collective IQ and innovation value? It is a hypothesis that seems worth to validate. If you have an organization in

²⁴ Building and Sustaining Communities of Practice, a study by APQC

²⁵ "Communities of Practice and Organizational Performance," in IBM Systems Journal, special issue <http://www.research.ibm.com/journal/sj/404/lesser.html> on knowledge management)

which there are communities that do all of the above, and you want to explore mutual interest in liberating their full innovation value, please write to us.

In recent conversations with business and CoP leaders, we explored ways to assess the innovation value of different kinds of CoPs. Some of the most promising ones are the following:

- Strategic communities of practice (SCoP)
- Leadership communities of practice (LCoP)
- Innovation communities of practice (ICoP)
- Project communities

Strategic Communities of Practice

Have you been in a plane when the air become turbulent? Did you know that a key part of the machinery is a dozen or so gyroscopes? Do you remember your childhood fascination when you spun one, and it was spinning and endlessly spinning? The gyroscope has a rapidly spinning disk supported within a framework that allows the disk to remain stable, even though the position of its housing can adapt to ever changing conditions. The dynamic stability of the spinning disk is what provides the important orientation factor for the pilot and his or her instruments.

How valuable might it be to an enterprise and its various innovation initiatives to have a gyroscope for dynamic stability against which it can measure its course in complex and turbulent markets? In his study of *Good to Great* companies, Jim Collins discovered the importance of the “Council,” a group of executives who are chartered to identify what the company is truly great at, where its passions are, and how it can fine tune its economic engine. This council, or whatever it may be called, functions like the company’s gyroscope. We see strategic communities of practice (SCoPs) as particularly well suited to this assignment.

SCoPs are CoPs organized to support strategic objectives and initiatives., such as:

- Accelerating the rate of introducing successful disruptive innovation
- Facilitating culture change
- Entering a new market

SCoPs differ from traditional task forces. SCoPs are, primarily, high-level *learning communities* focused on learning to create value of strategic portent. They are initiated by the senior leadership team and self-organizing in the context set by their charter. Initial members are frequently invited by the executive sponsor or the facilitator. Membership is open to interested parties of the organization.

Varieties of SCoPs introduced in AT&T and Lucent were charged to develop technology strategy recommendations in their areas of expertise. The “Council” that Jim Collins discovered in the great companies that he studied shares the following characteristics with SCoPs. They both:

- Have a purpose of gaining a better understanding of important, complex issues

- Are chartered by a senior executive but not part of the formal org. charts
- Have members who come with deep knowledge of a particular aspect of organization and its business environment
- Are characterized by a membership that is expected to argue, debate, and raise questions in search of a deeper understanding, not from the egoistic need to win a point.²⁶

Leadership Communities of Practice

We frequently hear from HR executives about the unmet need for strengthening leadership development by combining formal and time-bound offers with ongoing, peer-to-peer sharing of relevant knowledge. Think of Leadership Communities of Practice (LCoPs) as self-organizing and learner-driven leadership development programs designed for sustainability. LCoPs self-organize around a shared learning agenda of members to improve their talents and enhance performance in various territories of leadership work.

A natural way in which LCoPs come into being is along the lines of management disciplines (sales and marketing, project management, business development, or finance) or management practices (managing complexity, mentoring, facilitating team work, the art of effective appraisal, etc.). Current leadership development programs in most organizations provide ample opportunities for the launch and support of either type of LCoPs. Both of them can provide all graduates with the benefits of peer-supported, just-in-time learning and access to the shared knowledge and attention of the community.

LCoPs provide succession planning with emergent leaders who demonstrate their leadership qualities in the community. Participating in LCoPs, they continually improve their collaborative learning (c-learning) skills and become more fit to promote a collaborative culture by example.

Innovation Communities of Practice

Leadership development programs, in general, and action learning programs, in particular, tend to include a project that the participants or small groups of them are challenged to develop and prove valuable to the organization. Imagine the scope of the value that could be generated if there was an innovation community of practice (ICoP) engaged in discovering and helping to realize synergy across those projects of the same year or across time. Doing so, an ICoP would also provide a good opportunity to discover and test a measure for assessing community-enabled breakthrough business results.

Fostering unexpected connections between successful practices and ideas, ICoPs typically have a membership of varied disciplines and professional backgrounds. ICoPs can also foster productive conversations among innovation experts, pockets of innovators, and innovation managers. Their role is vital in bridging the organization's formal innovation evaluation and approval processes with the collective creativity, intelligence, and energy needed to continually feed the innovation pipeline with quality input.

Project Communities

²⁶ Good to Great, by Jim Collins

“Project communities” are yet another variety of growing importance. They can be as small as a group of three or four co-authors or somewhat larger, such as the creative groups at Google. They can be as large as open source communities of several hundred or several thousand people. What are they, what makes them tick?

Project communities are groups of people who share a passion for a project that they decided to collaborate on and to hone their talents and collective competence in delivering. The value to members includes:

- Financial compensation for a successful project
- Enjoyment in participating and contributing to a valued experience
- Enhanced capability to initiate, collaborate on, and complete such actions
- Increased ease, effectiveness, efficiency, and enjoyment of engaging in similar actions the next time

The value to organizations hosting project communities includes:

- Inspired and inspiring performance
- New talents and capabilities identified
- Prototypes in high-performance collaboration

Participation in project communities is voluntary. This is one of the characteristics that differentiates it from typical work teams and taskforces. Project communities have a shorter life cycle; they are time-bound, although the successful ones have multiple incentives to engage again in a similar or different project together. Their leadership is distributed and situational; people with the most relevant experience lead parts of the action. The convener of such communities is frequently a catalyst for transformation, motivated by developing new, creative, and collective capabilities.

The table on the next page²⁷ compares project teams, and communities of practice, and its variations, along the lines of some shared parameters.

²⁷ The source of the first two columns is “Cultivating Communities of Practice” – Wenger, McDermott, Snyder

	Project Teams	Communities of Practice	Strategic Communities of Practice	Leadership Communities of Practice	Innovation Communities of Practice	Project Communities
Deliver	Task	Domain	Better strategy	Better leaders	Innovating the innov. process	Self-governing, collaborative action
Objective	Deliver on time, on budget	Improve the practice	Support strategic objectives and initiatives.	Enhance leadership performance	Augmented innovation performance	Deliver project while improving the practice
Participation	Assigned	Voluntary	Invitational and voluntary	Invitational and voluntary	Voluntary	Voluntary
Time frame	Continuous or beginning and end	Continuous	Continuous or beginning and end	Continuous	Continuous or beginning and end	Ad hoc, beginning and end
Commitment	To goal	To domain	Improvement of strategy or its execution	To domain	To innovate the innovation process	To project
Investment	More organizational	More personal	More organizational	Both pers. and organizational	More organizational	More personal
Connected	Subtasks	Interdependent knowledge	Interdependent knowledge	Interdependent knowledge	Interdependent knowledge	Passion, dovetailing knowledge
Lead	Managed	Emergent and distributed leadership	Distributed between executive sponsor & SCoP	Emergent and distributed	Emergent and distributed	Distributed, situational leadership
Reward	Financial	Enhanced capability	Improved strategic talents & thinking	More effective leadership capabilities	More versatile capabilities and marketability	Enhanced capability, and possibly, financial
Type of work	Dissimilar or similar	Similar	Dissimilar or similar	Dissimilar and similar	Dissimilar	Dissimilar or similar

Table 1: Teams and communities of practice compared

Project communities share features with, and differ from, the other two types. Just as teams, they are results-oriented and guided by shared intent to deliver it on time and on budget. Just as CoPs, and unlike typical teams, their membership is voluntary, not assigned, and their leadership is distributed and situational.

Successful project communities frequently start with a project concept or kernel that energizes a core group. When gathered, in-person or virtually, members decide how they will collaborate and what will be the right mix of lightweight social software tools for carrying out the project and supporting their work and its coordination. Other factors critical to their success—and considered critical to the success of CoPs, too²⁸—include:

- A skillful and reputable coordinator
- The involvement of experts
- Addressing details of the practice
- The right rhythm and mix of activities

Project communities are excellent vehicle for innovation because they can combine the focus of teams on their goal with the learning focus and self-organizing energy that characterize communities of practice.

Communities in the Innovation Ecology

The vitality of an organization’s innovation ecology—the rainforest of ideas, insights, and inspirations that it can draw upon—depends on the same as the vitality of natural ecosystems: their diversity. The diversity of any ecosystem is continually enhanced by the interactions with the surrounding ecosystems. The organization’s innovation ecosystem does not stop at its gates.

Why is the environment, the ecology of innovation, becoming increasingly important? Part of the explanation has to do with the fact that the process of innovation in the new knowledge-driven economy is increasingly becoming a function of open-source networks of cooperation. In other words, innovation is not something that is happening ‘inside’ firms but rather at the interfaces of firms with markets, structures of competition, and the regulatory and institutional environments within which firms operate. Open-source networks of cooperation are composed of teams of company employees and entrepreneurs outside the official structures of companies as well as within such structures.”²⁹

Those open-source networks of cooperation include organizations, individuals, and business communities. In this section, we will explore some of countless ways, both in the sense of “numerous” and “uncounted,” in which project communities and CoPs foster innovation. A systematic inventory of those ways will open the possibility to:

1. Create better alignment between the innovation capacity of the communities and the strategic objectives of the organizations hosting them.

28 Quick Guide to CoP Start-up, by Etienne Wenger

29 From Knowledge to Innovation Ecology, by Takis Damaskopoulos (INSEAD)

http://www.knowledgeboard.com/library/damaskopoulos_whitepaper_innovation_ecology.pdf

2. Recognize CoPs and their constellations as a generative source of value creation. “Generative” refers to the properties of self-sustaining, self-improving, co-evolving, and self-propagating. You will find more on that in the sidebar on the Generative Action methodology.

To realize those possibilities, one has to talk with the leading practitioners and gather stories, news, and observations of how CoPs foster innovation. We started doing that, and here are the first results. Far from being complete, the list below is only a starting point and a heartfelt invitation to a learning journey into further discovery.

Direct Contributions of Communities to Innovation

CoPs bring value to all phases of innovation from idea generation and evaluation to implementation and commercialization.

Idea stage: knowledge confluence, trust flows, and taxonomies

In the idea stage of innovation, we collect, evaluate, connect, and recontextualize ideas. In that stage, knowledge and expertise flow from various sources and converge into patterns of new potential. The robustness of those patterns holds the key to the vitality of the innovation that they engender. Robust patterns of innovation potential are capable to adapt to and perform well under changing circumstances.

The transparency of peer-to-peer culture prevalent in CoPs is more conducive to trust building than cultures dominated by hierarchies. Trust is pivotal to create a safe environment for community members where they are free to take risks and experiment with ideas. One of the sources of the communities’ innovation value is in their role of accelerating trust flows.

All CoPs can foster innovation, but there are some (ICoPs) whose very existence is centered on that. ICoPs have the potential to develop and model the roles and practices that some of the other CoPs also can include in their capability repertory. An example of that is the tradition of “Tech Clubs” formed by various engineering disciplines at Chrysler in the early 90’s, which includes the shared monitoring and appraisal by community members of emergent technologies and their implications for the practice.

CoPs organize themselves by domains of practice. Domains have an evolving body of knowledge. CoPs can steward the competence of the enterprise in their domains. Radical innovation recombines facts and assessments of existing knowledge in various domains when melding them into a new potential. Therefore, how well those community-based knowledge assets are organized and validated is another essential factor of the organization’s innovation capacity.

When planning how to manage the value of knowledge resources, it is important to consider management as a set of functions managed by various players, not only managers... Community members act in partnership with formal team or business unit managers to manage the value of knowledge resources. Both parties negotiate to what extent these management tasks should be

managed inside the community by its leaders and members or outside by business unit or corporate managers (or collaboratively, by both).³⁰

The collaborative development and validation of terminology used by a CoP is another one of its contributions to develop productive capabilities, in general, and innovation capabilities, in particular. While individual domain experts can create useful drafts of taxonomies, ontologies, and other classification schemes, the principle of “none of us is as smart as all of us” make CoPs better qualified to validate such schemes. When domain knowledge is mapped and classified, it provides a more fertile soil for the seeds of innovation to grow, by making easier to detect innovation opportunities in the potential cross-impact of the relevant knowledge integrated in the domain.

Implementation stage: better coordination through deeper trust

The implementation of radical innovation requires high-precision coordination of action across multiple teams, units, and communities. When coordination is lubricated by trustful relationships among the players, then there is less friction, its transaction cost is lower, and the results are better.

The relationship of innovation communities with potential customers and other external sources of innovation has an essential role in the implementation stage. The following is an interesting example from Xerox PARC.

When we came up with a good idea, we often didn't take it directly to the company. Instead, I used to engage in what I called operational judo. First, we got customers turned on to the idea by showing it secretly to them. That helped us make improvements by learning from customers. Once we got customers behind the idea, we unleashed them on the other parts of the company. We did that because we knew an idea from a customer would have greater credibility than one that came directly from us.³¹

Commercialization stage: real stories build trust and market acceptance

When the innovation cycle turns into the commercialization stage, access to first-hand accounts of its successful uses by early adopters can accelerate innovation acceptance. Where could people in the next wave of adopters find those stories and give them more credibility than the ones polished by marketing communications? Most likely, in the customer communities, where enthused early users share those stories and patterns of relevant experiences can be easily pieced together from the give-and-take of interactions in the community.

An example is the currently planned INTRo community of practice at Carnegie Mellon University. Their website says, “IDEALSM-Based New Technology Rollout (INTRo) is a structured approach for adopting and deploying new tools and technology. Our approach is designed to accelerate the transition of INTRo and

30 Cultivating Communities of Practice: a guide to managing knowledge, by Etienne Wenger et al., Harvard Business School Press, 2002

31 How Does Your Knowledge Flow? An interview with John Seely Brown, in CSC World Spring/Summer 2002, <http://www.csc.com/aboutus/cscworld/summer02/howdoesknowledge.shtml>

knowledge sharing on software technology adoption. The community of practice will encourage *connections* between members—creating a knowledge network—as well as *collection* of assets”.³²

Customer communities of practice are crucial to accelerate the adoption of an innovation if it is highly complex, such as the case of large software systems and their components and add-ons, in aviation, financial services, logistics, electronics, biotechnology, and other knowledge-intensive industries.

Participants in these communities help each other in the use of products ranging from software programs (e.g., Microsoft Word) to toy building blocks (e.g., LEGO®). They reinforce the value of the product in their lives through shared passions and experiences.³³

Customer communities are popping up everywhere and becoming a source of product innovation from automobiles and cosmetics to wireless communications and open-source software. Understanding and supporting the roles they play in the innovation game is instrumental to understanding and liberating the full innovation value of in-house CoPs in the commercialization stage. A sign of the growing importance of “user innovation” is its website at MIT, which welcomes its visitors with the following opening statement: “Empirical research is finding that users rather than manufacturers are the actual developers of many or most new products and services – and that they are a major locus of innovative activity in the economy.”³⁴

Indirect Contributions of Communities to Innovation

- Communities can shape the organization’s culture

Having developed the ability to learn in communities of practice, an organization has established a platform where collaborative problem solving and innovation are readily internalized as just the way people do their work.³⁵

What does it take for an organization to excel in their “ability to learn in communities of practice”? That question is worth putting into the focus of action research in organizations with a strategic intent to grow a culture in which innovation occurs naturally, as a by-product of how people attend their work.

- Communities can develop mastery in the art of productive conversations

A key source of innovation is the close interaction with members in a community of practice that have developed the ability to have productive conversations. These dialogues in which assumptions

32 INTRo Overview and Transition Strategy, by Software Engineering Institute at Carnegie Mellon University,

<http://www.sei.cmu.edu/intro/overview/overview.html>

33 Turning Love into Money: How some firms may profit from voluntary electronic customer communities, by Jae Yun Moon and Lee Sproull,

<http://userinnovation.mit.edu/papers/Vol-Customers.pdf>

34 More information available at <http://userinnovation.mit.edu/>

35 Leveraging Communities of Practice for Strategic Advantage, by Hubert Saint-Onge & Debra Wallace (Butterworth-Heinemann, 2003)

are questioned as a matter of course and people are committed to build on one another's ideas in a high-trust vessel for exchange, will contribute significantly to elevating the innovation quotient of an organization.³⁶

Innovative ideas do not appear from nothing; they are born in mindful, mind-opening, and productive dialogues. To optimize the network of conversations—that makes up the organization—for innovation, one cannot overemphasize the importance of skillful facilitation of critical conversations within and across communities. The quality of community facilitation has a direct and high-value impact on the firm's innovation capacity.

- Communities can help attract and retain key talent for innovation

Innovative people enjoy working in an atmosphere of innovation, which can be enhanced by CoPs. Providing a safe environment for open dialogue and questioning assumptions, well-functioning CoPs can play in people's decisions to stay with the organization or leave it if they get a financially better offer.

- Communities are a competitive advantage in the world of business alliances

The ability to form partnerships and to work across boundaries will be key to the choice of partners in the formation of [business] alliances. Given the strength of these emerging networks, the firm that is left behind will soon experience difficulty in the marketplace. Having extensive experience in setting up and making cross-functional communities of practice work, will place organizations at an advantage in the development of these alliances. From this perspective, communities of practice become essential components of the readiness required for competing in the emerging business environment of knowledge networks.³⁷

How Communities Support Radical Innovation

As we discussed in the "Great Symphony Paradox," radical innovation needs people who are members in multiple communities and play a role of "cultural translators" between them. Their work adds to the diversity of knowledge assets and flows available to any innovation. It also leads to increased interest and activities both in the centers and the periphery of the communities involved, opening more opportunities for radical innovation to occur.

Communities of practice are not only known for the value they create by incremental process improvements, but they also have ways to support radical innovation. Perceiving the true potential of communities for radical innovation may need a shift in our unit of analysis. In the case of sustaining (linear) innovation, focusing on the internal innovation dynamics within a single community may be sufficient. When it comes to radical innovation, it is necessary to focus on a network of connecting CoPs as the unit of analysis. There are many ways in which CoPs support radical innovation. They include:

³⁶ *ibid*

³⁷ The Business Case for Communities of Practice, by Hubert Saint-Onge, <http://www.saint-ongetoolkit.com/businesspractice.html>

- Through their online forums, knowledge bases, issues lists, and other knowledge artifacts, CoPs turn the tacit knowledge of their members into knowledge nuggets more easily available to support the cross-fertilization between the knowledge domains necessary for a radical innovation.
- The success of radical innovation frequently requires from the organization and its members the execution of precise practices for collaboration and coordination. CoPs can help validate, integrate, and contextualize these practices.
- Belonging and participating in external professional networks, members of properly facilitated CoPs can become sources for the creativity and out-of-box thinking that radical innovation is asking for. Knowledge brokers, peripheral participants, multicommunity members, and other “cross-pollinators” of CoPs are likely carriers of the seeds of radical innovation. Membership in multiple CoPs can accelerate the flows of knowledge and trust across communities.
- Shifts in deeply seated mental models, the mutual inspiration and push-back necessary to radical innovation are most likely to occur in high-trust relationships fostered by the communities.

Given all of the ways in which communities of practice can foster innovation, forward-thinking management would want to develop a solid relationship with them as strategic partners. Strategic partners inform one another about their plans and needs in order to find ways to better mutual support.

Whether the communities will fulfill their innovation potential or whether the firm can liberate their full innovation value largely depends on the quality of attention and support CoPs will receive from the organization. The range of measures indicating that quality includes person-centric technical support to knowledge harvesting and weaving (such as personal and shared knowledge blogs); web-enabled knowledge flows and idea recombination; and the training of learning facilitators, community hosts, cybrarians, and knowledge brokers.

CoPs can foster radical innovation better when a strategic framework for alignment (with such functions as R&D, strategic management, KM, innovation management, and HR) supports their work. Developing the right strategy for collaborating with CoPs and investing in their enabling infrastructure may well be the highest-ROI investment in the firm’s strategic capabilities, including its capacity to evolve through raising its innovation performance.

The Most Radical Innovation of All

Communities of practice in business and society—moving into the center of value-creation—are the most radical innovation since the development of the division of labor. In the early stages of human history, different individuals started developing specialties in different kinds of work. The division of labor allowed the unfolding of the creative—and sometimes destructive—powers of human work, science, and technology, as we know them today. With it came the division between command-givers and command-takers, management and employees. What was once the enabler of new creative possibilities, by now became their barrier.

The emergence of new social and electronic technologies at the dawn of the third millennium has opened dramatically new ways to organize collaboration and coordination in complex work, based on individual choice and commitment instead bureaucratic coercion. Communities of practice are the playground, where baby humanity learns to step into a future in which the creative powers of the individual and the community are developing, not at the expense of, but in full support to one another. That learning is both an evolutionary and economic imperative. Future-responsive business leaders inspire the growth of community-enabled business results as a means to meet both.

Glossary

Breakthrough innovation combines strengths of existing products and/or processes into offerings presented to adjacent markets frequently serviced by an adjacent line of business.

“Collective intellect refers to the cognitive powers of people, which are aggregated, combined, and augmented by their communities and organizations. They include collective perception, memory, and discernment, as well as collective intuition, imagination and collaborative learning.” — George Pór

“Collective intelligence is the capacity of human communities to enable their members to reach their highest potential, and to co-evolve towards more complex integrations through collaboration and innovation, in mutually supportive relationships.” — George Pór

“Communities of practice (CoP) are self-organizing and self-governing groups of people who share a passion for the common domain of what they do and strive to become better practitioners. They create value for their members and stakeholders through developing and spreading new knowledge, capabilities, and fostering innovation.” — George Pór

Disruptive innovation is a form of radical innovation that re-defines rules, by altering the basis for competition, changing the economics of an entire industry, and making obsolete more expensive products or processes.

Incremental innovation is a process for achieving gradual improvements of existing products and/or processes.

Innovation communities of practice (ICoP) are CoP that came into being to foster radical, breakthrough, or disruptive innovation, and mix members of varying backgrounds and perspectives to enable it.

Innovation ecosystem is the system of interactions and value flows among the domains of an innovation architecture.

Leadership communities of practice (LCoP) self-organize around a shared learning agenda of members to improve their talents and enhance performance in various or all areas of leadership work.

Project communities are groups of people who share a passion for a project that they decided to collaborate on, and hone their talents for, and collective competence in, delivering it.

Radical innovation is a product or a process that alters a social or business practice to an unprecedented one.

Strategic communities of practice (SCoP) are special-function CoPs organized to support strategic objectives and add momentum to strategic initiatives.

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Sidebar: 5-point Roadmap to Liberate the Innovation Value

The source of all innovation is the connected human minds and the network of their relationships. To liberate the innovation value - the full capacity to innovate - inherent in those networks, the organization hosting them has to develop a strategy of value liberation. If you're a change champion motivated to lead the charge and need a roadmap, then use this as a starting point to draw your own:

- 1. Identify the strategic challenge or opportunity to which you want to apply community-enabled innovation, in dialogue with key stakeholders**
- 2. Look for allies to form an innovation community of practice (ICoP) or strategic community of practice (SCoP)**
- 3. Build case for, and get support from senior management to a launch workshop**
- 4. Learn to facilitate the collective intelligence of the community and mobilize it for meeting the strategic challenge/opportunity identified in step 1**
- 5. Assess the value generated by the community for the organization and its clients, customers, or constituencies**

Sidebar: The Methodology of Generative Action

This chapter presented you with a number of frameworks and models. The 5-Point Roadmap gave you a bird's-eye view of a possible course of action. You may wonder how to go about realizing the potential that you started discerning; is there a methodology that will be helpful?

Generative Action™ (GA) is a change-management and innovation-boosting methodology designed for growing strategic capabilities vital to organizational and business performance, such as collaboration of QuadE quality: Effective, Efficient, Effortless, and Enjoyable. GA is built on the disciplines of generative learning, action research, and appreciative inquiry.

GA is designed to discover ways to meet a driving challenge or opportunity in collapsed time, by mobilizing the collective intelligence of teams, communities of practice or the enterprise as whole. As an approach to change management, GA is particularly suitable when other methods have failed to activate such creative forces of the enterprise as the imagination, autonomy, and commitment of its members. When applied to augmenting the innovation performance of the company, GA excels in complementing the formal innovation management processes with the power of communities of practice, knowledge networks, and other forms of grassroots initiatives, in all phases of the innovation cycle.

GA is a learning architecture for community-enabled change and innovation management that enrolls and uses the intellectual and social capital embedded in CoPs for meeting change or innovation objectives. It provides managers of change and innovation with a structure of engagement and a process for collaborative learning (c-learning). It is cyclic, emergent, and participative.

Cyclic — Action and understanding go through cycles of deliberate and spiraling intervention and reflection. The “Plan” phase of Cycle 1 starts with discovering the most compelling questions¹ that—when combined with the rigorous GA process—can trigger the desired changes.

Emergent — The design is not detailed in advance to allow its cycles to respond to relevant knowledge emerging from the previous one. Thus, when specific outcomes cannot be predicted, the process remains flexible and is allowed to develop.

Participative — Key stakeholders of the project are actively involved in advising the process, reviewing and commenting its purpose and design, and shaping its outcomes.

Each cycle represent a new turn of an expanding spiral of value creation. For example, if Cycle 1 (the launch workshop) had 15 participants, then there might be as many as 100 or 150 who will be involved with or benefit from Cycle 2. The expanding cycles expand also the innovation and collaboration capabilities of all involved, individually and collectively.

¹ “A vital question, a creative question rivets our attention. All the creative power of our minds is focused on the question. Knowledge emerges in response to these compelling questions. They open us to new worlds.” —Verna Allee, quoted in *The Art of Powerful Questions: Catalyzing Insight, Innovation and Action*,” by Eric E. Vogt, Juanita Brown, and David Isaacs.

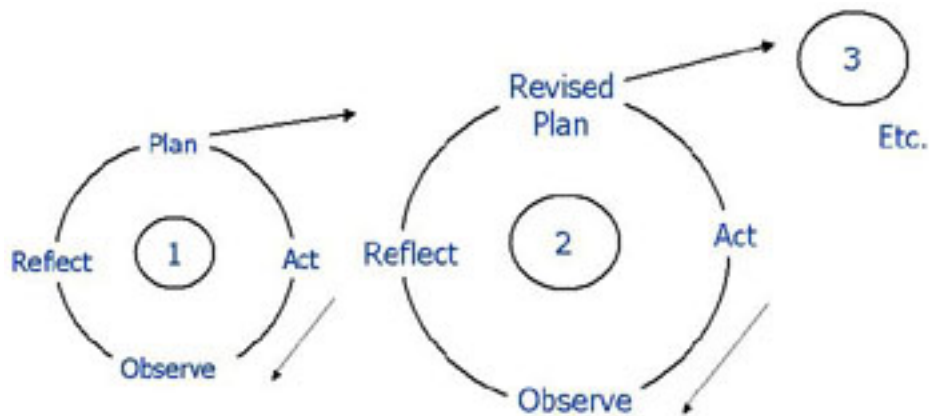


Figure 5. Action-research based GA spirals²

“Generative”³ refers to the properties of self-sustaining, self-improving, co-evolving, and self-propagating. When using GA in a change project or innovation augmentation, this methodology will let the results of the project:

- Sustain themselves after the completion of the initial cycle
- Enhance their own value continually, by becoming the target of ongoing improvement conversations in the CoPs
- Co-evolve with a changing environment, grow into patterns of higher performance
- Inspire the whole organization to make better use of the power of CoPs

Dimensions of success include

- Improved and energized innovation process, fuller innovation pipeline
- Augmented capabilities for collaboration and collaborative learning
- Enhanced and new professional relationships (social capital) valued by all participants

Fast-Tracking

GA is not business-as-usual. Where traditional, top-down approaches to change fail to deliver, a well-designed GA initiative can produce breakthrough results by fast-tracking the collective intelligence of the participants and freeing the flows of value, knowledge, and trust among them. “Fast-tracking” is a key distinction in our process. It means that productive insights from the Observation and Reflection phases are fed back into immediately during the next phases (Plan and Act) of each cycle, thus fostering better results in shorter time at a lower cost.

GA is a living and evolving methodology. For its most current version, visit the website at: <http://www.community-intelligence.com/how/ga.htm>.

² Source: Zuber-Skerritt, O., Ed. (1991) Action Research for Change and Development

³ The concept of “generativity,” as referred here, was inspired by the work of Bill Veltrap, a “generative change architect” and elder of the organizational transformation movement.
http://www.collectivewisdominitiative.org/files_people/Veltrap_Bill.htm