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Four Keys to Managing Emergence

In volatile and uncertain environments, managers must encourage and enable the spurts of participatory innovation that lead to emergent processes and solutions.

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RON McCURDY AND
MATHIAS KIRCHMER

In recent years, much has been made about the uncertain and continuously dynamic nature of the environment in which today's organizations operate. Research has repeatedly demonstrated that managers contribute

to a company's bottom line in such an environment by enabling the emergence of work processes in real time, in which the outcomes are not predictable and employees must continuously make sense of, and adjust to, a changing situation. It is generally accepted that new product development, customer service or any knowledge process conducted in a dynamically changing marketplace must be an emergent one if a company is to turn unpredictability to its competitive advantage.

While much has been written about the need to manage emergence, however, most advice to managers focuses on establishing an infrastructure for encouraging effective improvisation by workers responsible for emergent work processes. Contingency plans must be prepared, alternative future scenarios must be developed; the right people placed into the work force; the environment closely monitored; and reward structures encouraging experimentation established. While it is true that an infrastructure supporting emergence is clearly critical, managers have received insufficient guidance about what exactly they should be doing to enable it.

Having collectively spent years managing companies facing highly uncertain environmental and competitive pressures, we have come to believe that managers must be actively engaged in the emergent process in a way that does not simply offer exhortations or ensure that the infrastructure is working. Nor must they wrest control from employees because only confident, empowered workers will successfully adapt their processes and knowledge to

unpredictable events. Instead, successful managers of emergent processes must have their own unique work processes — they must actively facilitate the confluence of participatory “spurts” of innovation.

An innovative spurt is a quantum leap in insight. It occurs when parameters are in a state of flux, plans have broken down and a real-time adaptation is required. It is participatory when it is the product of any and all stakeholders who have an insight to contribute, not just those whose job description gives them the specific responsibility to innovate. An engineer who reframes a problem from building a bridge to affecting the flow of traffic is engaged in an innovative spurt. The Red Cross' redirection during the Katrina disaster from a direct-service delivery model to an information broker role was an innovative spurt. Subcontractors, customers, insiders, pundits — all can contribute to innovative spurts.

Managers who have mastered emergence do not attempt to coordinate these spurts in a planned top-down fashion, but rather encourage them to “stream together,” to reinforce and complement one another as they evolve. As Web sites and databases listing missing persons from Hurricane Katrina proliferated, for example, the Red Cross stepped in to knit the sites together through links and a unifying search engine.

The managerial skills required to stream innovation to produce emergent solutions are nuanced and subtle. Managers who excel at it, however, generally engage in four distinct management practices:

Continuous Discourse with Potential Participants. In the face of uncertain events, different perspectives are needed to solicit and evaluate alternative interpretations of events, information and possible solutions. Typically, managers trying to cope with uncertainty will ask employees and consultants to develop white papers, top-down road maps or market trend reports that are discussed and then used to form the basis for plans to guide employees' behaviors. The masters at managing emergence do

more. They structure the work so that the discourse continues even as the work is being done — information, assumptions and interpretations are continually and explicitly surfaced, compared with other interpretations and then challenged in the face of new information. They realize that environmental realities change so rapidly and with such potentially systemic effects that interpretation and assumptions need to be surfaced and challenged frequently to identify the next innovative spurt.

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Successful discourse is not the normal conversation of an everyday organization. It is different in three ways. First, for discourses to successfully lead to innovative spurts, participants must be able to freely share and discuss all relevant information including such taboo subjects as political implications of alternative actions. Second, discourses must intentionally engage alternative perspectives from many different levels of an organization. Third, discourses must be focused on actions. Discourses that lead to a lot of pontification will be of limited value; they must affect people’s behaviors.

Skilled managers stimulate discourse by walking among their workers and asking them questions like “Have any assumptions changed lately?”, “Are you still sure this is the right thing to do?” and “What else might we be doing?” They purposely include people who might otherwise not be consulted. They share information that might be traditionally hidden. They talk about alternative actions that could be taken. For example, some managers at Novell, Inc. use a process called “dialogic inquiry” in which participants air, openly challenge and then discuss core assumptions they each hold. These managers have broken from tradition by no longer starting meetings between Novell consultants and software developers with participants presenting proposed actions or decisions. Instead, they begin the meeting with each participant presenting his or her assumptions about emerging market needs and corporate direction. Dialogic inquiry has inspired innovative

spurts in both product ideas and marketing campaigns and has contributed to a general sense of community and shared understanding.

Similarly, at IDS Scheer AG, a global software and consulting company for business process life-cycle management, monthly teleconferences are attended by managers from headquarters and the company’s major international regions (Americas, Eastern Europe, Western Europe), representing marketing, sales, consulting and software development. Participants from outside the company may also be included. The expressed purpose of these teleconferences is to go beyond “traditional” research and development activities and actively engage in questioning basic assumptions. This often leads to probing conversations with other employees and eventually to new or modified product offerings.

Continuous Updating of Knowledge Maps. In times of flux, changing circumstance and conditions will continually require new knowledge and skill sets. The notion of an “expert” is fleeting, highly situation-specific and of limited utility. It is not that people are not experts for a given problem or solution, but that the set of known conditions keep redefining what the problem is or the solution might be. Responsibilities must be constantly rematched to problems as they evolve. Expertise, then, is grounded in the knowledge that can be brought to bear on an issue as it is discussed.

Those who manage emergence well do not rely on static contact networks or preconceived categorizations of expertise. They continually develop — and help others develop — knowledge maps, noting who knows what about a wide variety of topics and situations. To do this, some managers simply “manage by walking around,” talking to employees, seeing them in action, learning about their interests both professional and personal. Some managers do this by wandering around asking employees about hobbies. An employee’s fascination with Chinese history, for instance, may prove helpful in some future outsourcing deal. Managers may keep knowledge maps updated by sending out e-mails to employees with links to articles about new ways of doing business to see who starts a conversation about the article. Other managers observe posts to corporate wikis or

blogs, communication mechanisms that allow all members of a group to create and edit content.

To successfully manage emergence, it would not be effective for executives to simply cultivate their own knowledge maps, then rematch others' responsibilities on the fly. That approach would be too limited and slow. Those who manage emergence best, create and manage processes in which all members of an emergent enterprise maintain their own knowledge maps, each interacting dynamically with others to continually reshift responsibilities in a truly adaptive system.

IDS Scheer's customer life cycle processes provide an example of this kind of "rolling expertise." Once the marketing department establishes contact with a prospective customer, the business development group takes the lead, working with various company executives and members of the consulting group to discover what solutions fit the client best. When a solution is identified, the consulting department then takes the lead in executing the plan. Once the solutions are delivered, business development once again moves to the fore to maintain the partnership with the client. IDS Scheer's process allows for continuous updating of knowledge maps and significant reshifting of responsibility, so the company can customize its approach not only from client to client, but also over time.

In another example, managers at the New Orleans public utility Entergy Corp. were responsible for placing the largest transmission cables ever built under the mile-wide Mississippi River. Contractors were engaged for every phase of the project — from dirt removal to cable manufacturing, from cable laying to building a shoreline children's park when construction was done. The size, novelty and complexity of the project made it difficult, if not impossible, to predefine all the conditions for handoffs between contractors, so Entergy created a contractual arrangement that, without specifying the details, made each contractor responsible for making an effective handoff with the next contractor. This encouraged the contractors to share their expertise about the changing conditions at the site, such as the evolving compaction of the dirt or unexpected underwater hazards. The contractors negotiated responsibilities on the fly for solving emergent problems, and for each handoff, each

contractor involved had to agree that it had been a success before any of them could get paid.

Blurring Boundaries Between Those Inside and Outside the Organization. Today companies often ask customers to partner with them in a number of ways: to help develop product and process innovations and to provide information for financial forecasts and product demand forecasts. Managing emergence, however, requires more. Getting solicited

Robust emergent work processes have to tap into information from inside and outside the organization; managers must blur the boundaries between the two.

feedback from customers is too slow and predictable for an emergent process. What's more, it keeps the company at the center of the communication network, which means that information will be lost unless it is explicitly routed through the company.

Emergent processes involve unpredictable inputs from unpredictable participants. Suppliers, employees and other stakeholders — as well as customers — need to be involved. They should be induced to provide not only feedback in response to specific requests but also unsolicited information voluntarily offered out of interest and engagement. This creates a rich and proliferating knowledge base and a system of checks and balances that helps vet and extrapolate information. Robust emergent work processes have to tap into information from both inside and outside the organization, so those who have mastered managing emergence have learned to blur the boundaries between the two.

Novell has effectively blurred this distinction in its "Birds-of-a-Feather" forums. At these events, senior developers, who had traditionally not had much interaction with customers, share their expertise about existing and new products with customers, employees, media and other interested parties. The risks involved in such open exchange are usually vastly outweighed by the innovation spurts they can inspire.

Managers are traditionally reluctant to share the details of an emergent process with outsiders. Public projects selectively release information to the public; developers selectively meet with only the most hand-picked customers; information is

gathered from customers but interpreted by the organization behind the firewall. Engaging the external base of interested citizens, not by simply providing information, but in helping to interpret the information is a level of responsibility given to external parties that blurs the boundaries between internal and external agents. For example, Entergy realizes that since it is a public utility, the public needs to be informed about projects if the cost is to be borne by rate increases, rather than by the com-

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pany. During its cable-laying project, the company's managers went further than simply informing the public; they engaged the public in weekly talk shows, town hall meetings, letters to the editor in the local newspapers and responses to them, and open houses in which they didn't simply present information, but used the time to solicit ideas, discuss unfolding problems and involve the public in celebrations of success as the project went through its various phases. This level of customer engagement left citizens feeling not simply that they were informed, but that they had influenced "their project." The rate increase was voted in.

Wikis are increasingly used to encourage engagement at all levels inside and outside organizations. A wiki is a piece of server software that allows users to freely create and edit Web page content using any Web browser. It is unusual among group communication mechanisms in that it allows the organization of contributions to be edited in addition to the content itself. At Novell, the Cool Solutions wiki has customers providing solutions for other customers, helping developers to understand technical issues, and even co-writing technical white papers with Novell developers.

Governing Through Reputation Networks. Masters of emergence management understand that they alone cannot provide the incentives and norms that will induce participatory innovation, so they have learned to gain impetus and leverage from creating or identifying existing "reputation networks."

Reputation has always been useful in governing open, innovative processes. Many knowledge management systems have people rate each others' contributions. Ebay Inc., the online marketplace, has its sellers and buyers rate one another's quality. Wiki pages indicate which contributors have the greatest number of downloaded pages. What is unique about managing emergence, however, is that reputation networks associated with emergent projects tend to be emergent as well — dynamic, changeable and unique to specific situations. Using these networks for governing, therefore, requires first identifying them, then working with and leveraging how they create reputation. For example, Entergy's managers knew that they did not have enough leverage to keep their subcontractors on track. So they

learned about the market communities within which each worked and then publicly kept each community informed about the relevant subcontractor's progress on the Entergy project. In one case, an Entergy manager even flew to Japan to speak with a subcontractor's customers to explain why working with Entergy would yield them long term dividends. Once that case was made, the subcontractor gained added credibility and the flexibility to adjust its production schedule to Entergy's advantage when problems with the project were encountered.

Managers who have mastered these four principles help their organizations to react quickly to unpredictable, emergent events — so quickly, in fact, that the reactions often appear to outsiders to have been planned and preemptive. By streaming together the participatory innovative spurts that result, managers are able to make an emergent process appear expected and routine.

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