

# Managing Emergent Work: Revisiting Jazz Lessons

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## Abstract

Over time, a body of 'conventional wisdom' adopted from jazz band leaders has been codified to help managers lead emergent work processes. This wisdom encourages managers to create plans to guide execution, hide the emergent nature of the work from customers and lead subordinates by personally and publicly facing uncertainty head-on. This wisdom reflected a style of leadership that prioritised the actions of the individual leader over the actions of the collective. It came from an era where the separation between businesses and their customers was formal and proscribed. Today, this conventional wisdom is insufficient to support the fast pace of change and innovation required. It does not reflect the active role customers play in business development and the increased demand for transparency. It does not support simultaneously learning and doing during the work process. While conventional wisdom was informed by one view of jazz band leaders, today's managers need to be guided by a different view of jazz band leaders – a view that focuses on how jazz band leaders support, not lead, emergence.

Jazz bands are always learning something new as they play. They focus on the conversation that emerges between notes, players and instruments. They start with a musical structure, but are not bound by it. They build mental maps of the expertise in their bands. They engage in front of, rather than hide from, the public. As knowledge about the music emerges, they support the emergent process of jazz by making connections among players, notes, and instruments, not by focusing attention on themselves. In the same way, successful managers support emergent work. The authors provide examples of this in both online and offline contexts, concluding that in order to successfully manage an emergent work process, people need to learn while they are doing the business of their work. To support this belief, four principles for managing emergent work are offered which improvise off the old conventions for a new riff on emergent leadership.

## Introduction

Emergent knowledge processes are work processes in which the outcomes are not obvious, so that participants must continuously make sense of their situation and decide, in real time, on the next steps to take. New product development (especially of the revolutionary kind) is the quintessential emergent process, as developers iterate recursively between problem-finding and solution evaluation, and increasingly use virtual means to access experts from around the world. The rapidly changing market has made emergent processes critical for success.

To manage employees engaged in emergent work, a variety of authors have offered a set of principles that have come to be accepted as 'conventional wisdom' (Orlikowski & Hofman 1997; Mintzberg 1994; Weick 1998; Eisenhardt 1997) that is:

- using an explicit plan to guide how people will act
- being an expert in the work they're managing
- hiding emergence from the customer on the assumption they 'don't want to know'
- personally facing the uncertainty in a way that inspires others to follow to provide a façade of success.

A plan, in this conventional wisdom, is one with objectives and processes describing what employees should accomplish and how. It has operated with a set of rules.

Emergence has been managed by allowing the plan to change as conditions change. Since emergence implies breaking rules, conventional wisdom has suggested that only those most knowledgeable about the rules and the reasons for their existence should be given the authority to break the rules. If managers are to be held accountable for their employees' emergent behavior, the managers need to be experts in the work to determine which rules to break.

Conventional wisdom has also suggested that if emergence is required in a process, the customers should be shielded from the process lest he/she conclude that managers are not in control of their business. In this view, the belief is that the customer wants control and predictability. Sharing the 'messiness' of an emergent process will only increase the customer's anxiety, driving he/she away to more secure suppliers.

Finally, conventional wisdom suggests that the trait most needed by managers in an emergent process is a style that focuses on the perception of control and certainty of the manager rather than on the work itself. In other words, a style that masks, rather than reveals the situation.

As managers, researchers, consultants, and jazz players, we (the authors) have observed a different pattern of leading emergence within companies in such diverse domains as software design, strategic planning, contracting, project management, knowledge management, organizational change, medical services delivery, credit union customer service, and homeland security. What we have seen is not the 'conventional wisdom'. In a software development team at SAP using wiki technologies, team members make an average of 20 changes to documents each day as their emergent process unfolds (See Useful Links for details). At JPL, 3M and IBM, knowledge management initiatives foster emergence not by creating knowledge repositories with formal taxonomies, but by promoting aggregation through search tools and filtering as it is needed, to answer a specific question. At Novell, their Cool Solutions Wiki emphasizes a focus on customer relationships that are not simply about selling solutions, but which work to develop customer communities in which Novell plays a helping role in the customer's unpredictable journey in the marketplace. The United States (U.S.) Army in Iraq is shifting from a command-and-control hierarchy to a net-centric communication-intensive system for urban guerilla warfare, pulsating with emergent information and knowledge-sharing as missiles are redirected at the last moment, individual soldiers redeploy resources through chat rooms, and global positioning system (GPS) maps inform squads of which alleys to go down first.

Collectively, we have spent years managing companies facing highly uncertain environmental and competitive pressures; leading, listening and playing in jazz bands; and studying managers successful at managing emergent processes. We find that the conventional wisdom, while providing some guidance for managing emergent work, has the problematic side-effect of separating learning from doing. Plans, expertise, customer engagement and charisma are defined and developed independent from the work being performed. Instead, there are four flexible principles which can guide how emergent work can be managed. We tell our story of how emergent work is managed using Entergy Louisiana Inc., a public utility in Louisiana, United States of America (U.S.).

## Entergy's Story

It's not a name associated with excitement, innovation, new product or process ideas. It's a public utility in Louisiana. Like other companies in its industry, it did things the same way for many decades, and would have continued in the same vein until one factor in its environment changed radically – ships got bigger. One of Entergy's most critical transmission lines – part of the grid for the entire area - runs across the Mississippi River at Mile 89, up river from the mouth at the Gulf of Mexico. New Orleans, the capital city of Louisiana, is one mile up river from the power line crossing. New Orleans is also one of the busiest ports in the U.S., with ships constantly going up and down the river from and back to the Gulf.

When the transmission lines were installed over 40 years ago, they were designed to be 175 to 195 feet (53-59 metres) high above the Mississippi River's mean high water mark, allowing most boats to pass underneath. Occasionally taller ships, such as aircraft carriers, were required to pass to one side or the other, instead of down the center, where the lines were at their lowest. The last straw was when a cruise line decided to put New Orleans on its tour stop, disembarking thousands of tourists in the city for weekly short stops – but only provided that it didn't have to stop its ships for the transmission lines every time they came up and down river. Entergy needed to de-energize its line every time a large ship came by, resulting in the electric service of 100,000 people, 17 industrial facilities, nursing homes, and hospitals being put at greater risk. Moreover, this process required the time of Entergy operations staff to make the switch over, wait for the ship to pass, and then switch back. The public pressure for Entergy to do something about its lines was now extreme, with citizens demanding action in public forums and on radio talk shows. Finally, Entergy's president made a pledge to the public: we will solve this problem within 18 months, at a cost of no more than US\$15 million.

Solving the problem was no simple task. The Mississippi River is very wide at Mile 89: 3,020 feet (920.5m). No one in the world had ever produced or sunk power cables at the volts required, with the necessary insulation, with no splices, at that length. There are levees on both sides and tampering with them could have disastrous results. The land between the river and the levees is a swamp, hardly a place for construction. The lines could not simply be laid on the loose sand and gravel bottom of the Mississippi, since they must be kept stationary (there is a strong current, and a ship dragging its anchor could catch on them). Hence it was not an ideal place to secure critical power lines. The Mississippi River is 85 feet (26m) deep and because of the soft river bottom, the lines needed to go to a depth 100 feet (31m) below the bottom of the river. In these conditions, there could be no splices in the lines, since splices would have increased the probability of major problems. The cables needed redundancy, so that power could be switched over to other lines if one failed. There were already natural gas pipelines running under the Mississippi that needed to be avoided during construction. The enormous effort involved up to 40 agencies: Army Corps of Engineers, Federal Aviation Administration (FAA), Homeland Security, the Natural Resources Board, New Orleans City Council, and the Rate Commission, to name a few. The Rate Commission had the authority to require Entergy to pay for any change to the power lines and to pay customers for any disruption of service.

The clear long-term solution was to bury the lines beneath the river bed, but how and who should do it? Entergy's technical group had worked on the challenge but focused on the narrowly defined problem that the lines were not high enough. Their suggestion, making the lines higher, was only a short term fix until bigger ships came along. Rob and Paul, (real names withheld) relative newcomers at Entergy with less than four years each at the company, were assigned to the task. They floated the idea of burying the lines, a solution that would fix the shipping problem once and for all. Only a few at Entergy believed it was possible - especially for the US\$15 million dollar price tag. The company president decided to give Rob and Paul's idea a try.

Rob and Paul may at first glance have seemed unqualified for the task by measures of conventional wisdom because they did not have direct related past experience. Paul had been an underground pipeline specialist from Shell before coming to Entergy but had little experience with power cables. Rob was a project manager. He knew nothing about cables, had no previous knowledge of the power industry prior to joining Entergy, but he knew how to manage a project and the fundamentals of engineering. Together, Rob and Paul started contacting cable manufacturers, eventually ending up with seven prime contractors who did the job – in 17 (instead of 18) months and for a full million dollars under the president's stated budget. The Project involved innovations for which 27 patent applications are now on file (for example, how to hold the bundles of cables together to maintain the needed tension and installation). All this happened despite having to obtain no less than 60 permits (each with a different form) from local agencies, any one of which could have said 'no'.

At each step of the project, Rob and Paul encountered unexpected obstacles. On the West side of the River, their investigation about who owned the land yielded 84 different heirs to land ownership, each one needing to agree to the right-of-way before construction could begin. They initially relied on Entergy's traditional right-of-way procurement practices but quickly learned that this process was too restrictive. So Paul and Rob got on the phone, calling heirs as far away as Brazil, asking them to attend a meeting of land owners.

Starting construction presented its own surprises. While the swamp was expected to present some challenges, no one expected that the construction equipment would sink 22 feet (7 m). So they brought in 20,000 cubic feet (566 m<sup>3</sup>) of dirt before they could begin. Project contracts needed to be established with the seven contractors. Paul and Rob quickly determined that Entergy's traditional contracting methods wouldn't work for this situation. Instead they prepared a fixed-price contract that was performance-bonded to the complete US\$15 million project, for each contractor. The contract included explicit collaborative expectations. This innovation made each contractor responsible for the hand-offs (handover) between each other, and accountable for the tight schedule. For example, the cable manufacturer had a representative on site who had the authority to stop the drilling contractor's work if he felt that the diameter of the hole was unacceptable or the type of integrity testing was substandard. In Rob's words, "...we needed to find a new way to get other people to feel the same sense of urgency and responsibility we felt" (Entergy, 2003, pers. comm., 6 August). Contractors agreed to these revolutionary terms so they could be involved in the biggest project of its kind ever attempted. As the project moved forward with this new level of collaboration, people were impressed. Within weeks of the project nearing completion, over a dozen buy-out inquiries came to the contractors.

To reach across the river and sink 185 feet (56m) down, the cable needed to be at least 3,700 feet (1128m) long. Rob and Paul needed to find a manufacturer able to produce such a long cable without splicing. They quickly discovered only four manufacturers in the world had this capability, with only one (in Japan) willing to retool their factory to produce it. As each of the eight cables weighed 80 tons, one ship from Japan per month could transport it, so timing was critical. When the Japanese manufacturer's other customers were concerned about their own orders being delayed by Entergy's timing, Paul flew to Japan. By explaining the historical nature of this project, he convinced them to accept delays. When the cable arrived, the truck it was to be transported on required 96 tyres. Even then, as the truck tried to pull away from the port, the load was so heavy that its transmission broke down and tyres blew out. A new truck was brought in. When the cable arrived on the construction site, it needed to be unraveled to feed it into the outer protective sheath and then finally through the hole under the river to the other side. Laying out the cable required 3,000 feet (914m) straight along the river, an area being actively used by a petro-chemical plant. The team negotiated the right to use the area provided they didn't interfere with the plant's ongoing operations. To comply with the agreement, Entergy agreed to build bridges over the plant's operations, so the cable was laid out in the air. When the plant needed its space back a month earlier than originally planned, the project had to speed up. After the cable was fed through to the other side, the 455 termination points needed to be connected to the transmission towers. Typically only one specialist would be required to make the connections, but this would have taken months. So, using their personal networks, Rob and Paul found the six available specialists in the world (two in England, two in New Zealand and two in Japan) who could come to New Orleans and spend two weeks to finish the project. Since the six spoke no common language they quickly learned to 'speak' through hand signals, working around the clock to connect all 455 termination points.

Some would say, even within Entergy, that Paul and Rob were incredibly lucky. Every time something went wrong, some 'fix' seemed to be within reach. The surprise of needing to find 85 heirs to the land was 'fixed' with key phone calls; face-to-face negotiations and payments, for the land. The surprise of discovering that the truck could not haul 80 tons was 'fixed' with a new truck with additional capacity. Was this really luck, or was it carefully managed emergence? We believe the latter.

Did Paul and Rob follow the conventional wisdom in managing the emergence they encountered? We don't see it here. The plan was hardly a plan. In the language of jazz, they had a tune list and a tempo, but not much more. They had a clearly defined goal and freedom to navigate to that goal. Rob and Paul set a direction and a collaborative way of behaving, but never developed an explicit, step by step plan.

Rob and Paul, contrary to conventional wisdom, didn't hide the emergence from the public. They had weekly briefings with the public, went on talk shows explaining progress, and invited the public to look at the construction site.

Paul and Rob were dynamic, enthusiastic and relentless, but not charismatic. They were motivated by the cause and believed that the problems could be worked out. They did not grandstand to divert attention from the real issues of the project and instead invited all the stakeholders in to see for themselves. They did not hoard leadership for their own advancement, but let it shift to where it was needed.

Paul and Rob had a clear goal and an expectation for flexibility, informed by four principles for managing this emergent process. These principles do a better job than the conventional wisdom in explaining how to manage emergence and integrate learning with the business of doing. They are:

1. It's all about the conversation, not the plan
2. Rely on, and constantly build, a mental map of others' expertise
3. Engage the public (stakeholders) in the emergence, don't hide it
4. Constantly shift leadership.

## **Principle #1: Conversations Should Be The Focus.**

Rob and Paul thought of planning as an ongoing, real-time process as emergent information presented itself. As they went, they engaged others in thinking through options and contingencies, systemic implications, and asking a lot of 'what if' and 'how come' questions. They knew how to ask questions, listen and then respond by *acting* on what they learned. The ongoing planning happened *inside* of conversations as part of the work. Conversations drove the plans, rather than letting plans be the guide for the conversations. Conversations also unlocked the set of relationships needed to complete the project; the 'social network' Rob and Paul needed.

Rob and Paul, being from the southern part of the U.S., may have had a particular appreciation for the value of conversations. They seemed to have an intuitive sense that people wanted involvement in this process, more than anything else. Rob and Paul engaged the local community in conversations using local talk radio shows. With suppliers and partners, they got on the phone to underground cable manufacturers asking them about how they might approach the problem, who they might work with, and what might be the possible source of risks. They phoned each of the 85 heirs of the property they were about to dig up and talked with them about the importance of the project to New Orleans.

Paul and Rob's intentions in the conversations were, like a jazz leader, to make each person feel they were part of the ongoing learning and creation process. Through these conversations, people came to understand how different alternatives would affect their work and the success of the project. When the Japanese cable manufacturer expressed concern about meeting the schedule, Paul didn't simply tell the manufacturer to meet the schedule. Instead, he flew to Japan to have conversations with the manufacturer's customers, discussing why the innovations the manufacturer was developing for Entergy would be of benefit to them. In a jazz quartet, the trumpet player is in constant communication (often without words) with the drummer, who is in constant communication with the pianist, and so on. The music will only be as good as the 'conversations'.

In the Entergy case, these conversations were face to face and by telephone. Organisations, however, aren't limited to these two. Technology now affords companies ways to be 'in conversation' with their customers. Hallmark uses online communities to hear customers' real needs and drive product design. Mazda Miata owners, an almost fanatically dedicated and talkative group, have online and email lists where Miata representatives read and respond as members of the community. Sun Microsystems pioneered many of their products with their customers via online user groups. Today

many companies are adopting blogs as ways to share their emergent thinking, formerly hidden and perceived as 'messy', with their customers.

Entergy is not the only project in which we've observed the value of conversations to integrate thinking about contingencies as planning in an ongoing emergent work process. For example, when Novell merged with an IT consulting firm, Cambridge Partners, initially, the two groups of people spoke such different languages that they were often missing each others' points. The anticipated synergy from such a merger wasn't happening. So they started a process called 'dialogic inquiry' (Wells 1999), meant to be a new way to have a conversation. Their method involves asking people to explore their assumptions about their common commitments, the emerging needs of the market, and what direction the company needs to take as a result, and to create a joint glossary of terms. They credit this focus on examining how conversations are constructed with breaking down barriers between the two different cultures, learning to brainstorm together, and identifying new market opportunities.

## **Principle #2: Rely On, and Constantly Build, a Mental Map of What Others Know.**

Paul and Rob did not have deep expertise on cabling for 230,000 volts of power; the technical people had that knowledge. While the technical people and conventional wisdom would argue that this worked to Paul and Rob's disadvantage, we assert the opposite. Precisely because they didn't have the expertise, they had to rely on others. By doing so, they got others involved in brainstorming solutions, creating synergies among different parties in ways that were not initially anticipated. Because they didn't have the expertise, they didn't try to generate the solution; they let others in their network generate the solutions. The contractors mentioned the excitement that this created; by brainstorming with the other contractors, they were able to make handoffs (hand overs) smoother. It's important to note that Rob and Paul's approach stretches the conventional definition of 'management', since many of the solution providers were suppliers, members of the community, and even government officials.

How does a manager without expertise manage an emergent process in which deep expertise is required? By replacing the expertise with a well-developed mental map of who has different types of expertise. In the cognitive science research literature, having a good mental map of where expertise lies in a team is called 'transactive memory' (Wegner 1995). This type of memory makes it possible for people in a team to efficiently transact with each other by assigning incoming information to the most knowledgeable experts, and knowing where to turn when specific knowledge is required. Siemens (2005) has developed this concept further for online networks. Through their conversations (Principle #1), Rob and Paul identified who had expertise and formed a social network. They developed this into a mental map of who knows what so that when problems arose, they were able to turn to those who were the most appropriate experts. For example, when they needed specialists in connecting the termination points, they contacted their contractors and rapidly found six specialists.

Jazz bands have often been referred to as high performing organizations, and many are. They get to be this way, in part, by constantly looking for the best suited people. Miles Davis, for example, repeatedly changed the members of his extremely successful bands to bring in new musicians. This helped develop new styles and move jazz to the next

level. So while conventional wisdom says 'hire the experts', this principle says it's more important to know what people know, so that their knowledge can be pulled in when an unpredictable situation arises. Warren Bennis observed that "...you may not know who the best butcher in town is, but your butcher does" (W. Bennis, 2006, pers. comm., 5 January). Rob and Paul used this principle to find the people who could find the people, who actually had the knowledge needed to respond to an unpredictable event.

A mental map is one thing, but having the right connections to act on that map is another. Rob and Paul reviewed their conversations, networks and relationships to find the right connections to enable them to act. They gathered and tracked these contacts on a spreadsheet. This meant that they could refer to them again.

As another example of this principle, Nova Chemicals, a multi-billion dollar company in the field of commodity plastics, has made 'business process innovation' a key element of their management style. Employees are encouraged to continuously create new ideas for business process excellence by asking outsiders to partner with them. This helps to create the mental map of who knows what – not just within the firm, but with outsiders as well.

The concept of networks is being applied not only in geographically co-located work, but in work that spans the globe. This brings increased complexity in trying to visualize the valuable internal and external connections an organization needs to thrive. New tools such as social network analysis are aiding in this area, allowing organizations to see critical connections.

### **Principle #3: Engage Customers in the Emergence, Don't Hide It.**

From the very beginning, the public was engaged in the Entergy project. The radio talk show call-ins asked the audience to suggest various solutions to the initial problem. Paul and Rob returned to the talk show repeatedly throughout the 17 months to answer more questions and give updates. Paul and Rob held no less than 20 town hall meetings during the course of the project. They attended Commission meetings, City Council meetings, and open houses in neighbourhoods. They invited the public to the construction site to see progress. They gave countless tours. They engaged the local politicians in the project. They had a videographer on site shooting movies of the work and sharing them with the public. The operations were as transparent as possible. The public knew of the construction equipment sinking, knew of the blown tires, knew of all the twists and turns that the process was taking.

Why did Rob and Paul so openly share with the public when conventional wisdom says to do the opposite? For many reasons. First, Rob and Paul believe that without the transparency, they would not have the needed trust and support. Entergy wouldn't have been able to get all 60 permits they needed, ranging from crossing bridges with an 80-ton load to carting in 20,000 cubic feet (566 m<sup>3</sup>) of dirt next to critical levees in the Mississippi River. Rob and Paul also believe that without a close connection to the public, the Rate Commission would not consider including the project costs in Entergy's rates. Thus, from their perspective, there was a clear need to share in order to build trust and the relationships they needed to succeed.

The openness also supported learning. Since emergent processes cannot be predicted in advance, hiding anything from the customer base runs the risk of hiding critical information that may later need to be shared (such as delayed shipments, changed solution plans, or large trucks moving down major highways containing unrecognizable cargo). Hiding can stop the learning.

Openness avoided bias and built ownership. By tightly controlling information sharing, the decision about what to share is in the hands of the manager, thus creating the possibility of actual or perceived manipulation and bias. Any perception of withholding information creates an 'us-vs-them' culture. Paul and Rob, instead, wanted a 'we're on the same team' culture with the public. They wanted the project not to be seen as Entergy's, and the project solution not viewed as a way for Entergy to resolve their own problem. Instead, they wanted the Mississippi River Crossing Project to be a public works project, a way of helping New Orleans to grow economically, with Entergy acting as a partner. Paul and Rob wanted the public not just to know about the project, but get excited about it, feel a part of it, and feel the sense of pride in laying the longest and largest cable system under a major river ever! The local papers picked up on this sense of pride and wrote many articles about being the first city to achieve such a feat. At the end, Paul and Rob threw a party – not for Entergy – but for the public. They showed project videos; local politicians spoke, hands-on pieces from the construction process were displayed; and the public shared in this new pride of New Orleans.

Openness affects perceptions. If you attempt to tightly control emergence and it leaks out, it appears to be an error, or even a scandal. By revealing the process, it changes the overall 'look' of what's happening - making it seem accessible, historic, revolutionary, and interesting. As a result, word of the project will spread through the network of conversations, bringing solutions and innovation from unexpected sources. The more stakeholders know and are included the more they are likely to trust those managing the process.

Jazz is a seamless connection between players, the audience, the tune, and the emotion they are expressing. African music, as part of African culture and one root of Jazz, does not include the idea of separate performer and audience; rather, all are performing together. Many of the jazz greats talk about being on an adventure with the audience, when not even the leader knows where it will end up. This is the mindset of emergent engagement - inviting the audience to join in the performance as partners.

At Novell, the Birds of the Feather Forum at the company's 2003 customer event was an innovation in which, for the first time, senior developers were asked to just talk about where Novell and the industry were going. Typically at the company, senior developers were kept out of the customer limelight. But the Birds of the Feather Forum changed all that. Sure, some developers said things about future development activities that in retrospect were probably not the best thing to say, but the open knowledge-sharing exchange between potential customers and developers created a relationship that has inspired both sides. In fact, new contracts have been traced directly back to relationships started as a result of this forum. Augmenting and extending the Forum to an online wiki or other online collaborative tool is the next obvious step, allowing Novell to extend the knowledge sharing beyond the time and place constraints of a face to face event.

In highly complex emergent processes, new tools are being developed that allow team members to visualize changes in real time. Putting data streams into RSS (really simple

syndication) feeds allows various team members to get the information they want in the form they need. Tracking via hand held computers and cell phones using collaborative technologies such as Groove and Basecamp allow teams to nimbly adjust their plans, on the fly. Even the addition of simple text messaging on mobile phones and instant messaging on computers allow team members to keep their conversations going.

IDS Scheer not only develops new ideas and applies them with their clients, they also publish these ideas on their website and encourages their clients to add to these ideas. This publicity prepares the market for new solutions and also encourages a wide variety of feedback. The result is improved solutions that benefit everyone.

## **Principle #4: Constantly Shift Leadership.**

Paul and Rob did not go to the construction site each morning with a rousing speech reminding the workers of the value of what they were doing for New Orleans and the State of Louisiana; they didn't pick up a sledge hammer and help out at the drilling site when it looked like the project was going to fall behind; they didn't publicly admonish contractors to work faster and smarter; they didn't look like charismatic leaders, always in the spotlight. Instead, they encouraged others to lead as responsibilities and requirements dictated different needs. Their contracts ensured smooth contractor handoffs (handover) between phases by making the contractors responsible for these actions. With such contracts in place, they didn't have to lead contractors; they could let contractors lead themselves.

Constantly shifting leadership is clearly visible in jazz improvisation, as the solo moves from person to person. Far from being chaotic, these shifts occur according to a protocol. The theme comes first, then the variation on the theme. Leadership is passed from person to person like a ball tossed back and forth, at the end of each phrase. Each person builds on what has been done before.

Southern California Edison's efforts to set up web governance on its employee portal, illustrates role shifting. The system had evolved so that it had multiple owners and lots of contributors. Rather than trying to impose an order on it, the company implemented a jazz-like solution: a sort of 'United Nations' effort in which only the form is managed. The company's intranet is now a cross-organisational entity, in which leadership of a key section goes to the group that signals it wants to take that role. One of the managers in IT reports: "...it has taken a great deal of flexibility, political empathy, execution, structure, involvement...at times, it seems like good music!"(M. Keshishian, 2004, pers. comm., 27 May). It sounds like jazz.

Another example is IDS Scheer's customer lifecycle processes. Once a contact to a prospect is established under the leadership of the Marketing department, the Business Development department takes over the lead and works with the potential client to see what solutions fit best. During that phase, the Business Development department is supported by the Consulting department, delivering expert know how, or company executives, outlining IDS Scheer's strengths as a business partner. Once the appropriate solution is identified and a contract between the parties is established, the Consulting department takes over the lead, making sure that the promised solutions are delivered appropriately, with the Business Development department supporting the Consulting department. Once the solutions are delivered, the Business Development department

takes back the lead to ensure a continued partnership with the client, and a long-term success for everyone.

Leadership handoffs (hand overs) can be supported by making them more visible, especially for distributed organizations. Online technologies such as concept and process mapping software (for example CmapTools) and collaborative project management tools (for example, Groove, WorkSpace) can be used to track, articulate and guide this network interplay for future improvement. (See Useful Links for details)

## Conclusion

For people to successfully manage an emergent work process, they need to let go of some of the conventional wisdom and take a cue from jazz bands. The four principles for emergent work help people achieve their shared goal by working off flexible plans, holding conversations, knowing what others' know and acting upon it, engaging customers, and constantly shifting leadership. These principles combine to enhance learning while performing the work, allowing ongoing innovation. This can be done using collaboratively oriented contracts, management-by-walking-around-and-having-conversations, and shifting task-responsibility matrices. Increasingly with a distributed world of work, this will be augmented with online tools. As Rob and Paul have shown, leading an emergent process can also make history and be a heck of a lot of fun.

## Useful Links

Wikis: [www.wiki.org](http://www.wiki.org)

Example: [www.twiki.org](http://www.twiki.org)

RSS feeds: [www.xml.com](http://www.xml.com)

Example: [www.nytimes.com/services/xml/rss/](http://www.nytimes.com/services/xml/rss/)

Mindmaps: <http://www.sigchi.org/chi97/proceedings/poster/mil.htm>

Example: [mindjet.com](http://mindjet.com)

Folksonomies: [www.uie.com/articles/article.php?article=folksonomies](http://www.uie.com/articles/article.php?article=folksonomies)

Example : [www.ukoln.ac.uk/qa-focus/documents/briefings/briefing-81/html/](http://www.ukoln.ac.uk/qa-focus/documents/briefings/briefing-81/html/)

Weblogs: '[Essential Blogging](#)' by Benjamin Trott, Mena G. Trott, Shelley Powers, J. Scott Johnson, Rael Dornfest, Cory Doctorow - Computers - 2002 (available through Google Scholar).

Example: [socialtext.com](http://socialtext.com)

Reputation counters and collaborative filtering:

[Combining Social Networks and Collaborative Filtering](#)

R Web – Communications of the ACM, 1997 - [portal.acm.org](http://portal.acm.org).

Example: Ebay

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