

The Nature of Social Collaboration:

How Work Really Gets Done

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Organizations are in the midst of a significant transformation as knowledge and innovation – fundamental in the creation of intellectual property – become important sources of capital in a rapidly changing global economy. At the very heart of these changes lies a shift in our perception of how work is done. In the Industrial Age, which symbolically began with Ford's assembly line, value was found in the application of physical sciences to the manufacturing of products. Mechanistic philosophies, creating practices such as separation and reductionism, dominated this era and affected the social sciences, as well. The "father of sociology," Auguste Comte (1852), divided education into categories such as biology, chemistry, physics, etc. Organizational science followed this pattern, subdividing organizations into departments such as finance, manufacturing, and purchasing. According to the practices of mechanical engineering, the organization was divided horizontally by a division of specialization and vertically by a division of authority. This network image, known as the "org chart," is still popular today. Missing from the chart are vendors, customers, and families of employees – all of whom are part of the system by which an organization creates value.

We are now in a Knowledge Age (Drucker 1988; Sakaiya 1991; Deming 1993; Senge 1993) and can look at how the system sciences explain the process of value creation. As a philosophy of the physical sciences dominated the Industrial Age, a philosophy of the biological sciences is beginning to dominate the Knowledge Age. This philosophy views knowledge, people, and organizations as living systems. This transformation of perspective was laid out by Gregory Bateson (1951), who described a way of viewing the world that shifted from: (1) focusing on parts to focusing on the whole, (2) focusing on categorization to focusing on integration, (3) focusing on the individual to focusing on interactions, and (4) focusing upon systems outside the observer to focusing on systems that include the observer.

Perhaps the most profound contributor in this area is the Chilean biologist, Dr. Humberto Maturana. In his seminal book (coauthored with Francisco Varela), *Autopoiesis and Cognition: The Realization of the Living* (1980), he described knowing from a perspective of living systems and living systems from a perspective of knowing. He defined knowing as doing. His unique understanding has influenced sociologists, psychologists, and organizational scientists. At Hewlett-Packard (HP) we have carefully studied Dr. Maturana's work and have found that his insights into social systems are particularly helpful. He claims that intelligent action is created in social systems where all the members of a network accept everyone else in the social network as legitimate participants in the network (Maturana and Bunnell 1998). Legitimacy, or the mutual acceptance of one by another, is our natural social

order. Conversely, negation of one person by another is an invention of more-modern society. We concur with many studies that show that performance improvement, innovation, and invention occur in social systems where this principle of legitimization is present.

We define “value” as those accomplishments that result in the creation of organizational, shareholder, customer, or employee well-being.

Through many years of research and collaboration we have come to conclude that value is created in dynamic, self-organizing social systems where shared knowledge is created through the collective coordination of action. While contemporary management literature has described different organizational concepts such as high-performing organizations, self-directed work teams, communities of practices, chaordic organizations, learning organizations, etc., we have become increasingly interested in the *nature* of social organizations. Through the use of social action research we have documented that organizational value is created in dynamic social systems that cross the boundaries of traditional organizational charts – charts that are becoming increasingly irrelevant. We maintain that these collaborative social systems are our natural social

order. They are networks of relations that, like language and learning, are innate building blocks of human, social, and organizational development.

The Value of Collaborative Social Systems

Today it is common for organizations to distinguish between formal and informal systems. This is a good sign. It indicates that we are beginning to discern the differences between Industrial Age hierarchies (formal systems) and Knowledge Age collaborative social systems (informal systems). But we have learned that we can accelerate organizational transformation by leaving these distinctions behind. The distinction between formal and informal systems maintains the tension between management hierarchies and self-organizing employee networks. We believe this tension is unnecessary and impedes organizational performance. Instead, we would like to make one distinction of importance to the company – value-creating social systems. Value-creating social systems are the associations of employees, vendors, customers, and other stakeholders that share the purpose of creating business value. Here are some examples.

Material compatibility

Hewlett-Packard's inkjet cartridges depend upon a sophisticated understanding of the interaction between ink and other materials. To solve a particularly perplexing problem, HP engineers brought two highly competitive vendors together to collaborate on the development of a new understanding of material chemistry. Figure 1 is a social-network map of the HP-vendor social system that reduced new inkjet cartridge development time by 16 weeks after just a few weeks of collaboration. Though people always work together to get work done, what made this simple network more effective than others was that all members were equally legitimized through building trust and openness early on, and through focusing on a common purpose: HP's success. This was accomplished through HP's insistence that the vendors focus on their customer (HP) and on the agreement to generate value for all three organizations.

Quality escalations

Customers purchasing HP inkjet cartridges demand consistent and reliable performance. To meet this demand, HP has established a set of procedures that ensure that any potential quality problem is identified, isolated, and corrected long before the customer purchases the new cartridge. Quality issues reaching a predetermined level of severity are called quality escalations and can cost the company millions of dollars each time they occur.

The social system shown in Figure 2 – composed of the initial group of managers who discussed quality escalations – began the process of self-organization, resulting in a significant decrease in quality escalations in inkjet cartridges. That social system would grow over time, attracting new members, through the process of self-organization. Self-organization occurs when people inside a given system change the pattern of their relations with each other or with others outside the social system.

After such self-organization, quality escalations that historically had occurred every 20 days (on average) virtually vanished. The last escalation occurred more than three years ago, and the decrease has saved HP hundreds of millions of dollars.

We have learned that collaborative social systems such as this expand rapidly in numbers because employees are eager to contribute to a solution that will serve the business. This particular collaborative social system, aimed at resolving quality escalations, actually generated a very large network (shown in part on the social map in Figure 3) that spanned the

Figure 1: HP-Vendor Social System

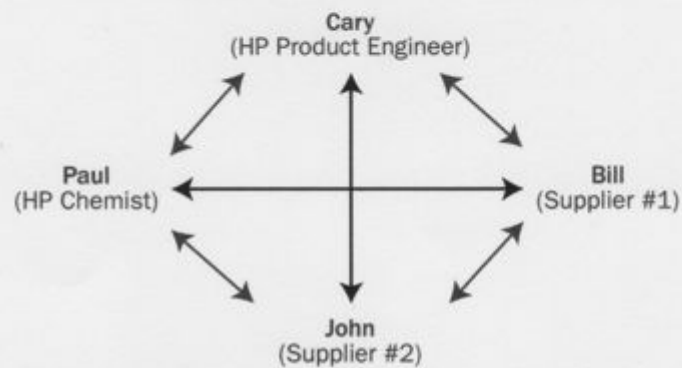
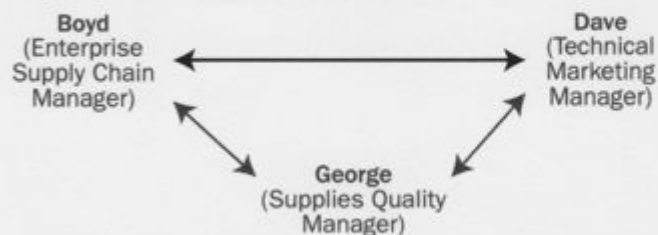


Figure 2: Initial Quality Escalation Social System

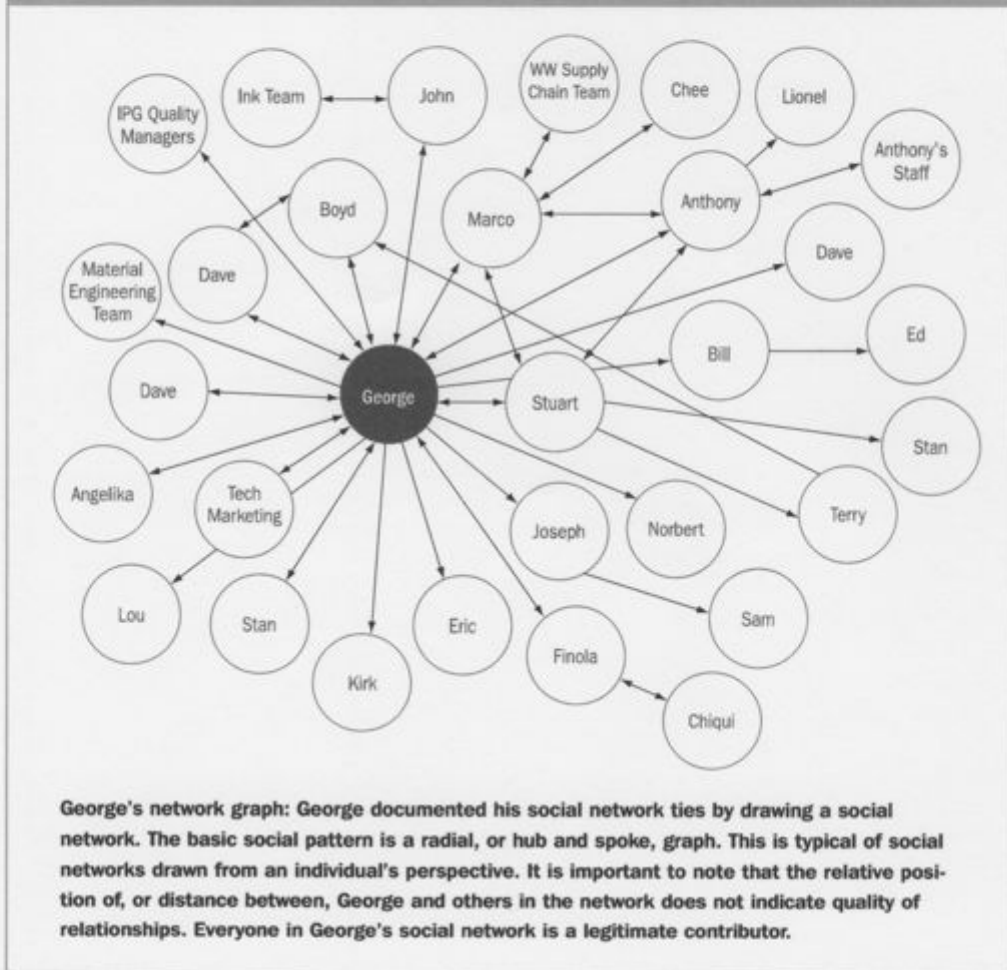


Social Action Research

We have used social action research to generate the case studies in this article. Social action research is a configuration of relationships that include the following qualities:

- being **social**: social action research generates a social system of reflection wherein everyone in the social system is a legitimate contributor to explaining how value is created. This follows the principle of love and legitimacy.
- being in **action**: social action research reflects on the praxis of living (or emergent) and collective coordination of action in the daily lives of the participants.
- being in **research**: social action research studies the theories of living and knowing and how social, biological, and financial well-being are interdependent in a new economy.

Figure 3: George's Social Network



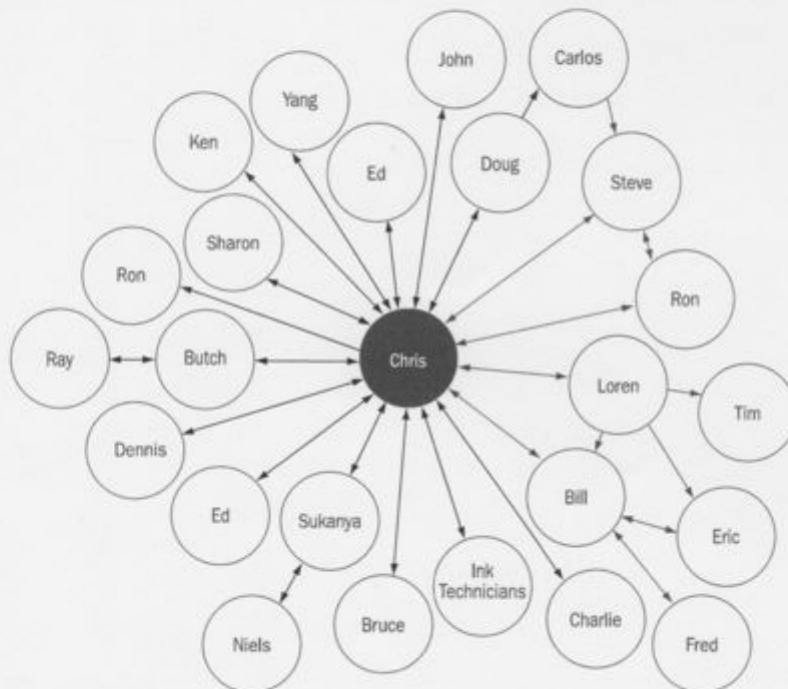
entire company. It differed from the standard quality escalation approach by appealing to employees who were already in the cartridge-production design, work, and distribution network, rather than forming a special outside "SWAT" team to fix the problem. The existing production network became a learning network that created the knowledge not only to solve the problem but also to prevent it in the future.

New product invention

The social system represented in Figure 4 is in the process of inventing a new product that has a significant potential market size and could save hundreds of thousands of lives. The originator of the idea mapped his social network as he worked on the idea, documenting its growth over time. In doing so, he was learning about the nature of self-organizing networks while he was in the process of inventing. He found that value creation lies at the heart of healthy, dynamic social systems.

Employees in this network have already developed the initial concept, built the first prototype, and begun testing regulatory requirements. Accomplishments expected to take up to six months to achieve were realized in a matter of weeks. We have found that group

Figure 4: Chris's Social Network



Like George, Chris also drew his social network. In doing so he captured three social systems in which participants were connected in reciprocal relationships. Both Chris and George updated their social network graphs over time and found that the social networks expanded with time. Their social networks' growth in size is an indicator of collaborators being attracted to the value they were creating.

productivity expands in self-organizing social systems because the process of coordination of action requires no outside management practices.

The Nature of Social Collaboration

By applying the principles of biological science (Maturana and Bunnell 1998) to the study of social systems, we can see how these networks constantly self-organize to generate the knowledge necessary to create extraordinary value. For example, in an organization where relationships are strong, as an engineer develops a new product others will usually contribute their skills, resources, and knowledge to accelerate the product's development. This phenomenon is commonly called "collaboration" and relies on knowledge and learning.

As we mentioned earlier, *knowledge* is doing (Maturana and Varela 1992, 26) or the coordination of action (Piaget 1971). *Learning* occurs when we reflect on our actions. *Social learning* is our collective reflection on our coordinated actions. By creating an environment that nurtures social learning, leaders assure greater organizational performance. We predict such a process will someday be as routine as today's popular process of individual performance evaluations. However, it will be much

Collaboration is simply the social coordination of action around a shared purpose.

more effective as a means of understanding how work is done and as a means to improving the productivity of the system of value creation.

Collaboration can be initiated in many ways, depending on your perspective and beliefs about collaboration. You might teach a class on collaboration with the belief that students will leave the class and collaborate. Or perhaps you approach someone and declare, "We must work together on this." Someone may write about collaboration (as we are now), thinking that his or her explanation will move the reader to take action. One common thread here is that none of these approaches, by itself, will generate collaboration or knowledge of the power of collaboration. We have discovered that the most profound knowledge of collaboration emerges in the *doing* – that is, as we work and reflect on our work with others.

"Listening to learn" and learning to listen

Collaboration begins with listening (Jewell-Larsen and Sandow 1999). This is simple, but not easy. It is especially difficult if we tend to dominate others by believing that talking, teaching, describing, convincing, debating, and influencing them is the most effective approach to social collaboration. In a few words, "The world would be better if everyone would just listen to me." What is often implied with these words is, "I know the right answer."

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In true listening one learns from others. When we listen to a group describe a common experience, we learn from the group. If we wish to learn about the nature of social performance we simply listen to those who demonstrate exemplary group performance. We know when we are "listening to learn." As we become curious and interested in learning more about collaboration we also learn to listen *better* to others. This increases mutual trust and respect in the organization, resulting in an added and not insignificant benefit – the expansion of social well-being. Why is this so? Because we all like not only to be heard but also to be recognized and accepted by others for our contribution. This social capital, defined as the potential productivity of a social network or organization, is a valuable asset that adds a force factor to sustained organizational performance.

Listening to others explain how they create value leads to the sharing of collective knowledge. This was a key role for both Chris and George. By viewing everyone as legitimate, they took the time to listen to them and thereby gather knowledge from the entire group to coordinate action. The knowledge inside the social system is shared with us as we begin to understand the nature of group performance. We become rapacious learners as we explore the wisdom of the group – a requirement for any leader in the new knowledge economy. This approach is often described by employees as a reduction in informal meetings, and has become popularly referred to as "management by walking around" – a management practice of Bill Hewlett and Dave Packard.

Performance improvement is proportional to the collective knowledge that flows through social systems; listening is the key to accessing the flow of that knowledge. This is a bit difficult to discuss because most people intellectually know that listening is a critical personal skill for success. Still, many people may appear to be listening when actually their listening is superficial at best. It is helpful to understand when we are listening to learn and when we are not really listening at all.

Consider some examples of how poor listening can *slow* the flow of knowledge sharing:

1. You begin to explain an experience and are interrupted. This is a common problem in listening. We interrupt someone because we do not understand. But we cannot understand someone unless we give the person a chance to finish his or her explanation! This sort of interruption confuses and frustrates the storyteller. These emotions arise because in the process of interrupting, we *restructure* the storyteller's story, replacing the emotion intertwined in the story with the frustration of trying to tell the story while being interrupted. The explanation no longer follows the path of the storyteller, but the structure we create through our interruptions. This also occurs when we prepare for listening by over-structuring our questions. It seems logical to organize a set of categorized questions, but adhering to the predetermined questions once again interrupts the flow of the storyteller's explanation and his or her sharing of knowledge and experiences. Of course, true questions for clarity add value to a conversation, but many times prepared questions fired at the speaker serve only to dissect the story and obscure the knowledge being shared.

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2. Colleagues feel as though they have little or no time to listen to you.

This emotion results in our wanting to speed up the listening. We want to move the storyteller along quickly so we can get to the "bottom line." This form of "speed listening" generates inaccurate assumptions. We leap to conclusions and fundamentally misunderstand the experience of the storyteller. The irony here is that in our attempts to "manage" our listening productively, we have actually wasted our time and the time of the storyteller.

3. Others act as if they already know what the your story is. Moments into the explanation, before the storyteller has finished, we begin to nod our heads up and down, interrupt the storyteller, and finish the explanation for him or her! We do this because we believe that we already know what the story is. In this case, it is obvious that we do not really want to listen, and have quickly done a match between what was heard and our own past experience.

All of these attributes of pseudo-listening not only slow the flow of knowledge and performance improvement, but also create misunderstanding and misalignment in action. As we often see, misunderstanding erodes relationships and leads to social separation, greatly reducing the effectiveness of any team.

Understanding understanding

A consequence of listening to learn from others is that the others come to understand that *you* understand *them*. This is not a trivial outcome, but one that conserves *openness* in social systems. Without openness, knowledge, innovation, and collaboration cannot occur as quickly and effectively as they naturally would. Response time to business demands plummets.

In today's turbulent corporate world we are constantly finding ourselves in newly forming teams – whether due to reorganization, customer responsiveness, new opportunities, or new hiring. As you join a new group it sometimes feels as though you are lost. You begin by asking exploratory questions, such as, "What's happening?" or perhaps, "What do you do? How does this work?" Soon you are so absorbed in what is being explained to you that you forget about everything except what you are hearing. As your interest in what is being said becomes self-evident, the explanation broadens. Your trainer may say, "Oh, if you are inter-

ested in this you should meet Maria.” So off you go to listen to Maria’s explanation about what you just heard. Maybe Maria invites you to join her as she does what has been explained to you. Soon Maria passes you to another and by the end of the day you realize just how much you have learned, and have a growing appreciation that the group, individually and collectively, would be so willing to share their knowledge with you.

The consequence of listening to learn and learning to listen to others in a social network is that at some point in time the group understands that you understand them. There is an expansion in the knowledge shared as the group realizes that this is not superficial knowledge for you, but meaningful understanding. Your listening has created a space of collective reflection, fluency, and learning.

Once you’ve accepted the invitation to listen, learn, and understand how people collaborate, you might do so routinely with more than one group. With multiple experiences of shared understanding we begin to see the flow of knowledge and performance in social systems – much like one begins to see the flow in a successful musical, theatrical, or sports performance.

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Shared meaning is critical to collaboration and the flow of knowledge. It is easy to agree on words. However, the difficulty is in developing a shared meaning for our words. This shared meaning is a matter of understanding (i.e., listening, reflecting, and dialogue) and greatly improves our productivity. When meaning is shared among the work-team members, no one is outside the social system. Everyone becomes an accepted or legitimate member. When high-performing teams

describe the magic of their experience (“flawless execution doing the impossible,” “reading each others’ minds,” etc.), they are reflecting on the power of their common understanding and flow of knowledge, which resulted in exceptional accomplishments.

Trusting

Trust is the silent connector in social networks. We take it for granted but it is actually quite fascinating. Think about the person you trust most in your life. Perhaps it is a spouse, parent, sibling, teacher, or friend. Trust is an emotional attitude that grows with the realization that someone understands you, because you come to see yourself, as in a reflective pool, through their observations and experiences in listening to you.

Carried to the social level, once the group realizes that you understand them, the relational ties between yourself and everyone else in the social system strengthen. You have become a legitimate member of the group and are now included in their network of conversations. Building trust in this way brings one from outside to inside the network. Conversations become deeper and reveal and generate more and more knowledge. Everyone in the group is accepted as a member of the social system and all are trusted to act in a manner that is aligned with their shared purpose. As trust grows, the focus shifts from *me* to *we*. I become more interested in learning from others than I am in their learning from me. Although I contribute whenever I can, I serve the purpose of the whole team or system.

Creating new knowledge is very different from creating products. This is one of the reasons organizations find themselves in a state of transformation today. We do not have license to learn from others – one cannot force another to share knowledge. Learning from others is a privilege and trust conserves this privilege. When an organization loses trust it also loses the privilege to learn and the capacity to generate new knowledge in a productive manner.

Collaborating

As we said earlier, collaboration is the social coordination of action, and occurs in a social system of relations wherein everyone in the network is accepted by everyone else in the network as a contributor toward a shared purpose. The flow of reflective relations resulting in collaboration allows any individual within the network to access the knowledge of the whole. In a high-trust environment, this is a continuous, generative process that is repeated as those in the network continue to reflect on how they perform together and take action based on that evolving knowledge, as depicted in Figure 5.

Social capital is improved by collaboration. The converse is also true. Social capital diminishes as collaboration diminishes. We know this because in the absence of collaboration, there is social separation, which can result in redundant costs, misalignment, and often, mistrust and fear. This deterioration of relations reinforces internal competition and diminishes social capital. In short, without collaboration we are headed down the road of resource depletion (see Figure 6).

Social-network pattern of collaboration

If we take the time to use social-network mapping to study the pattern of relations in a collaborative work group, as in our earlier examples, we will discover a social system structure wherein everyone is connected to everyone else in reciprocal relations. This is simple to measure. If you ask a group about value they have created, and Zhao tells you that Marcie has helped and Marcie tells you that Zhao has helped, you have revealed reciprocal social relations.

Figure 5: Reinforcing Trust

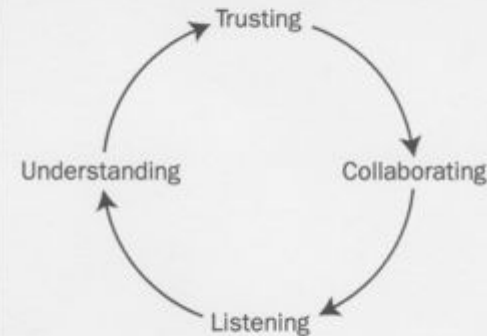


Figure 6: Resource Depletion

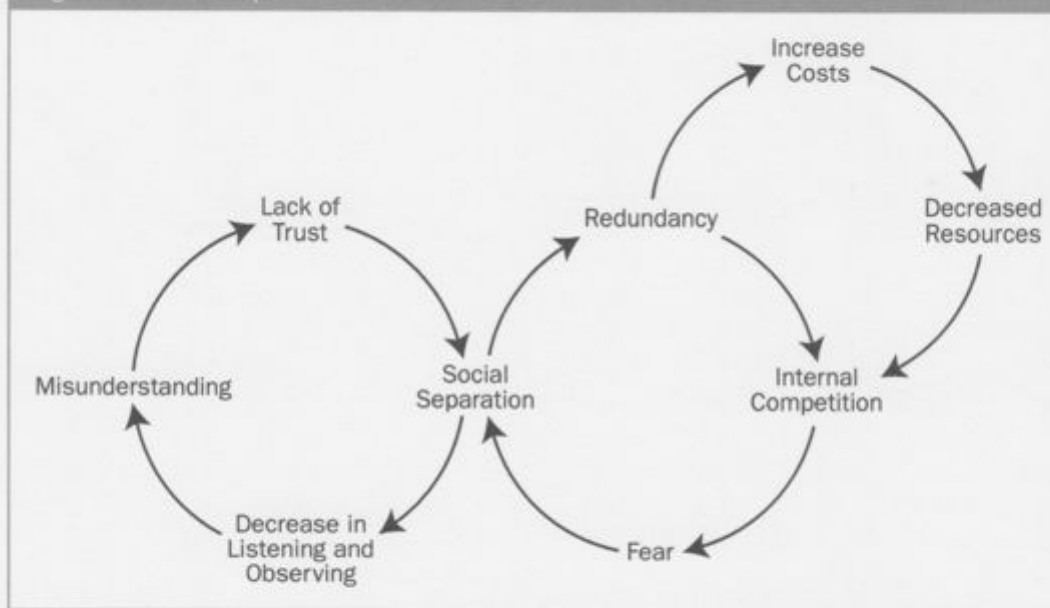
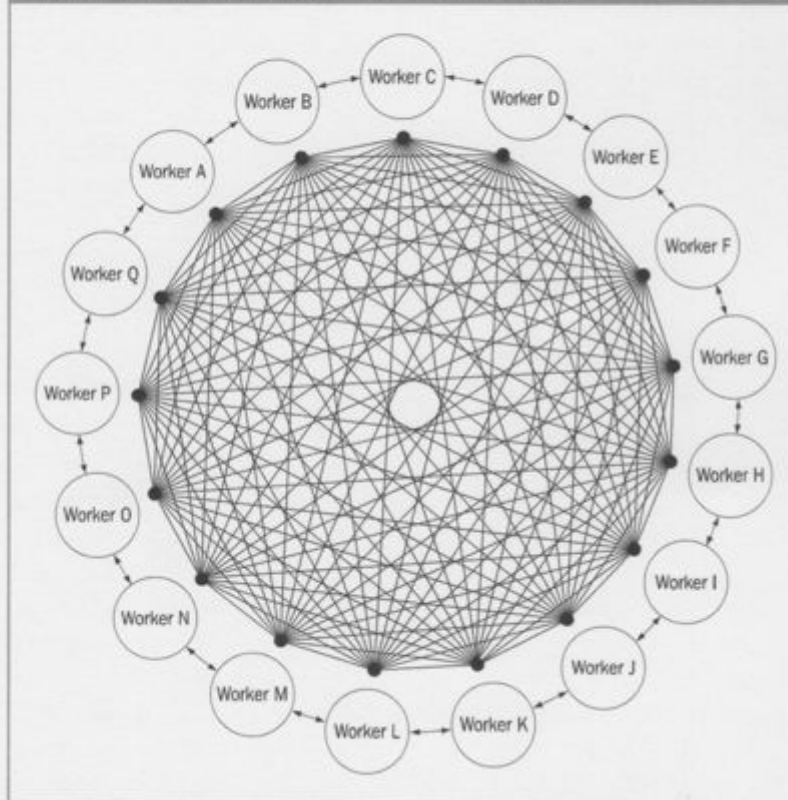


Figure 7: The Cohesion of Collaborative Social Systems



We have learned through years of doing this research that this reciprocal pattern is the most cohesive social structure and the source of invention, continuous performance improvement, knowledge creation, and social well-being.

The Bottom Line

Our experience, from years of studying collaborative social systems, has proven to us that they are not only the source of significant value creation but also the source of acceleration in value creation. We also believe that collaborative social systems are our natural social order. This becomes obvious to us when we consider our relations away from work, with our friends and families. So this begs the question: if this is our

natural social structure that generates significant value and well-being, why do we spend so little time nurturing or understanding it?

Now we come back to a point raised at the beginning: we are in a transformational period in the history of our perception. The mechanistic view taught us to see the organization as static when actually, like life itself, it is constantly changing. We have believed organizational performance is a function of individual contribution when actually, real contribution is a social phenomenon. And finally, we have seen that historically, management has focused almost exclusively on what to *change* in the organization rather than what to *conserve* in the organization.

Our own perceptual transformation is a matter of ongoing personal development. Though the following recommendations may not represent all the actions one can take, we believe that they are worthy of time and attention from those who are not only genuinely interested in people and their innate capability to collaborate and accomplish extraordinary things, but also interested in increasing value in their own organizations and communities.

Practice the power of reflection and "listening to learn" in your own organization to understand knowledge-based performance.

HP founders Bill Hewlett and Dave Packard were masters at managing by walking around. They shared a genuine interest in learning from employees. This both broadened their understanding of how productive HP's workforce was and inspired the workforce, thereby improving productivity. We invite you to identify new value that has resulted in shareholder, employee, or customer well-being either recently or currently in your own world. Find

someone responsible for the value creation and ask him or her to explain it to you. Was this accomplished by one person or by collaboration with others? If collaboration is the answer, ask that individual to list those involved, and then go to those people and ask them to describe their collaboration. In doing so you will reveal the nature of performance and learn how to improve social capital in your organization. This new insight will expand your perception of how work really gets done and will help you improve the organization's productivity by putting your new awareness into action.

Do no harm.

Due to our lack of understanding of the nature of collaborative social systems we can unintentionally diminish social capital. For example, we have studied how reorganization can sometimes disrupt or destroy value creation by disconnecting employees who were collaborating. When done effectively, reorganization follows the social structure of the work itself. To make reorganizations productive, managers must notice the emergent social structure around the work and support it appropriately. Oftentimes, social structure emerges around core processes of an organization. At the top of this support list is creating a knowledge and information management strategy that is aligned with the social nature of knowledge creation. We have observed shared data as a form of language that coordinates effective actions within a team. Once shared data are in place, new knowledge is built upon those data as the group works together. When reference data are standardized in a social system, the level of action and contribution rises dramatically. This is because data-based decision making is far more effective than decisions made on the basis of opinions, judgments, or a power position in the organization.

When reference data are standardized in a social system, the level of action and contribution rises dramatically.

"The main thing is to keep the main thing the main thing."

The Knowledge Age is a new economic age we live in, and it coincides with a proliferation of concepts and models. One need look no further than the Organizational Development field to understand that some concepts are helpful guides to action while others are so complex that they actually create confusion and contempt in the organization. During times of radical change simplicity has value. Employees organize themselves to improve performance; they seldom organize themselves around organizational concepts such as "high-performance work teams," etc. By keeping a focus on value creation (i.e., what we want to accomplish together), we can create a simple understanding that both honors and credits employees for their contributions. This will improve both decision making and social capital.

Develop competence in, and capacity for, reflection. It is the "secret sauce" in creating sustaining business value.

When Dr. Deming and Walter Shewhart created the continuous quality improvement cycle of Plan, Do, Study, Act (PDSA), they introduced learning or reflection as a "scientific process for acquiring dynamic knowledge." Without reflection built into our work processes, we risk creating "busy-ness" that has no real value. Rushing through tasks to check them off our lists does not increase our knowledge and understanding of what is important or how we can improve our performance and business value. As a social system, organizations must institutionalize learning. Learning can occur only through group reflection on what we do, how we do it, what we value about our practices, and how we can improve them.

There is often a perception that “reflection” takes too long and requires endless consensus-building conversations to gain buy-in to a plan or decision. We offer a different view. Reflection is a foundational ingredient to effective value creation since it is how we collectively learn and improve. We have found that endless conversations for buy-in are usually the result of a lack of shared purpose, common data, and true listening. When these are lacking, there is no compelling work around which to organize.

Watch your language. It shapes your perception and affects your capacity to contribute.

In shifting from mechanistic mental models, we must recognize that language plays a key role. We should listen to the words we choose to describe change, management, and the future. For example, language such as “driving change,” “re-engineering the organization,” and similar phrases all connote an intention to do something *to* people rather than *with* people. Language that treats the organization as a machine to be driven and people as cogs in the machine will not result in networks of collaboration, but in networks of contempt and ambition. If we hear ourselves talking as if we have the answer and must push or sell others to adopt it, we are probably acting from the old paradigm. These kinds of words shape the perceptions of others with respect to your intentions, and reinforce the mechanistic view of organizations.

Leading with “what to change” rather than with “what to conserve” always creates resistance and leads an organization to overlook, unwittingly, what is already working. Change initiatives that lack this important first step – appreciating what is precious to keep and build upon – can result in losing the formula for what makes value-creating networks thrive in their

Ideas for Transforming Your Own Perceptions and Actions to Maximize Value-Creating Social Networks in Your Workplace

When . . .

you think you need to reorganize

you want to drive or lead change from a particular place in the organization

you think there is no time to reflect on past actions as a team

you are feeling discounted

you want to learn more about social systems but the literature makes it seem complex and irrelevant

someone claims all the credit for getting a tough problem solved

Instead (or consider first) . . .

ask, “Where are the value-creating social networks where the work is actually getting done? How can I contribute to their success?”

ask, “What is it we need to create or accomplish together? What is important to conserve or expand?”

dedicate a specific amount of time to reflection and dialogue on what the team is learning and how to build that into next actions.

listen to learn; explore the networks most essential to your responsibilities to understand more fully how work is really getting done.

begin with a valued accomplishment and ask, “How was this created? Who contributed? How do they describe their experiences?”

ask, “How was the work accomplished? Who else was involved?” Reward the larger network for its contribution.

organizations. As our friend, former executive for both Volvo and IKEA Göran Carstedt, points out, "What if people don't mind change, but mind being changed?"

Look in the mirror. Are you legitimizing networks of collaboration or networks of ambition?

If we reflect for a moment on the networks that surround us and in which we participate, we should be able to recognize whether they are collaborative networks or networks of ambition. As described in this article, the former are social systems that create new knowledge, generate possibilities, and build trust and excitement. When we participate in a social network that is highly collaborative, it feels generative and positive for all those who are part of it. Often it is described as special or magic. No one wants to leave and extraordinary results occur, often repeatedly. In contrast, networks of ambition are not open and do not build trust. They are about power and competition within the network. Some members will serve as gatekeepers to information and to limit access to others. This type of social structure limits possibilities and social capital. Members are usually fearful that they will "look bad" or fail to please their boss by collaborating and sharing. People are happy and often relieved to leave these networks when the opportunity presents itself. These networks are easy to shift when we ask to know more about how value was created, who was involved, and what new knowledge was generated.

Often it is described as special or magic. This limits possibilities and social capital.

In Conclusion

In the Industrial Age value was created by managing resources. In the Knowledge Age value is created through collaborative relationships. Understanding the social principles governing collaborative networks and the intellectual and social capital they create will be necessary and new skills for managers who have always been responsible for managing the productivity and performance of an organization. Collaborative action and learning through collective reflection will be the source for understanding new practices that improve the creation of new value for customers, employees, and other stakeholders. While teaching social systems theory may be difficult, we have found that learning about social systems is simple and easy when groups have the time to reflect on their performance. Perception about the nature of social systems will continue to be shaped through our collective reflection – the site where Dr. Deming's mentor, C. I. Lewis, claimed our "social truth" resides.

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Commentary

By George Greenfield



George Greenfield

Working in the Hewlett-Packard (HP) InkJet Cartridge business has sometimes been like living in the eye of a tornado. Hyper-growth, and the intersection of science, technology, manufacturing, and vendor capability all play into maintaining a healthy balance among cost, quality, and availability. Decisions concerning the release of new products often had to be made months – and sometimes years – before enough data was available to know that our product quality and reliability would be good enough to meet our customers' expectations and our company's commitments.

To be sure, our quality system was always good enough to protect our customers. Almost without exception, quality issues were spotted and corrected before product reached the market, but at a price. Many times quality problems were detected with only enough time to "catch" the product in distribution. Then we would have to pull it back and rebalance inventories so we had the availability needed to feed the channel and meet our customers' needs. This could be very costly and frustrating for everyone involved.

About four years ago, a group of us started working with Dennis Sandow and began "experimenting" with the social theories he was testing. We did social action research, mapping our networks in a number of areas in the business, and always found that the network was much larger than expected and much more complex than we were capable of managing with conventional techniques. We also noticed that when information flowed effectively

through the network, business moved very fast and effectively.

A few years ago we were getting ready to launch a new line of printers and cartridges. It was to be the biggest launch in our printer history, and it also needed to be accomplished more quickly than any previous launch. We knew that even a small mistake could cost millions of dollars, not to mention impact customer satisfaction and the HP brand. A lot was at stake.

At the time we were experiencing a rash of pesky quality problems that diverted our precious resources. We had two choices: assign a team of specialists to solve the problems, as we had in the past, or employ the methods and techniques espoused by Sandow. We chose the latter, and as they say, "The rest is history!" Sandow and Allen's article talks about the power of real listening to influence learning. During this time we made the choice to listen to the advice of our own leaders and experts throughout the business about what HP needed. We had not realized how much knowledge was embedded in our own internal networks. By listening, we learned what we needed to do together to improve the overall quality of our products in a way we would not have if we had continued to operate in our old ways.

The leaders in our collaborative social network focused on pertinent information, like metrics displaying the quality issues, with the result that problems were spotted faster and resolved more quickly and completely than ever before. The business has now gone more than three years without a serious quality issue and we have

virtually eliminated the "distribution thrash" common in earlier periods.

The business results were stunning. Equally important, however, was the way employees and vendors felt about their role in the work. A feeling of well-being and accomplishment permeated the organization. Being at work was a joy. We were happy with each other.

And best of all, we knew we had made – and could continue to make – a difference to the business through a new way of getting our work done.

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Commentary

By Peter Senge



Peter Senge

Anyone who has ever worked in an organization recognizes the distinction between how things are supposed to work and how things actually do. The former encompasses the guidance of explicit roles, written rules, publicly expressed management strategies and values, and organization charts. The latter includes all the unwritten norms that govern action and behavior: knowing what is actually expected of you; knowing who is good at doing what, who is helpful or difficult to get along with, who has real influence, and how management decisions really get made. While people tend to think that the formal management hierarchy is "where the action is" (it is certainly where the money is), this is an oversimplification, and a potentially dangerous one if we care about performance and innovation.

Imagine what might happen if every person in your organization were replaced overnight with another person with a comparable education, cultural background, and intellectual ability. How would they do? Members of this new group would start to work with all the artifacts of the formal organization: the written rules, job descriptions, procedures, online manuals, sales records, customer contact information, and personnel files. They would not know any customers or suppliers – their problems, needs, or accomplishments. They would not have learned each other's interests, capabilities, or idiosyncrasies. They would have no past experience working with any of the organization's processes. Without a history of collaboration, the replacement workers might have a fresh perspective, but they would lack the knowledge necessary

to enable the organization to function, let alone innovate. That is because the organization's actual knowledge is embodied in the shared history of its living members. This is why Dennis Sandow and Anne Murray Allen open their article by declaring that their primary aim in utilizing social action research is to understand *how work gets done*, and how to appreciate and grow the knowledge that enables this.

In my judgment, the research on social collaboration that Sandow and Allen, along with many colleagues at Hewlett-Packard (HP), have done represents a landmark accomplishment in the emerging philosophy and practice of knowledge-based management. I first learned about this work when I attended a two-day workshop that HP hosted for Humberto Maturana, the Chilean biologist cited in the article. The fact that a company would get together almost one hundred engineers and managers, including Anne's boss, the "Ink Supply" division general manager, for two days with an eminent scientist of living systems was itself surprising. But what was even more surprising was that the participants were there to learn how to deepen work many were already doing. For some years, Dennis had been listening and learning from several engineering teams in his division, seeing first hand how they did their work and who they depended upon to do it. As he introduced initially skeptical engineers to social network mapping, they found that it gave them a tool to legitimate and explain to their managers how and why their personal networks mattered. Managers started to pay attention as the evidence linking particular social networks and the results they achieved

became compelling. For the first time, the engineers had a language to reinforce their claims that reorganizations and other management actions taken without an understanding of these networks often had negative side effects that outweighed the intended benefits. This is why the interest in the Maturana workshop extended well beyond the intellectual – which made the juxtaposition of this pragmatic motivation with its content even more striking.

In those two days, Maturana shared with the eager HP engineers his fifty-year journey of understanding “the biology of love.” Starting as an MIT post-doctoral experimental biologist trying to understand how “the frog sees a fly,” he had gradually established a radical new foundation for understanding perception in living systems. Perception, Maturana explained, is not ultimately about what we see but what we can *do*. From an evolutionary perspective, “catching flies” matters a good deal more than “seeing flies.” In human systems, the quality of perception is inseparable from the quality of collaboration; it is about the coordination of action that arises in networks of social interactions. Effectiveness depends on the qualities of the social relationships. When we are distant from one another, when we distrust or feel at risk, our relationships and consequently our awareness suffers. Conversely, when we build trusting relationships that allow us to be open, honest and vulnerable with one another, our ability to sense and respond to complex and changing environments grows. “Love, allowing the other to be a legitimate other, is the only emotion that expands intelligence,” Maturana declared to the HP engineers and managers. And they understood what he meant.

A few weeks ago, Anne Murray Allen and I spent a weekend with a small group of executives from SoL member organizations to reflect together on deep trends that are shaping the business environment. The first meeting of this group produced a statement we call the “Marblehead Letter.” It identified six “issues shaping the future, especially for corporations with global scope,” which started with the growing “social divide” and the need to “redefine economic growth” so that economic progress can be “consistent with a finite planet.”¹ In our recent meeting, everyone agreed that these global imbalances persisted and, if anything, were growing worse. Not surprisingly, the conversation turned to the features of our system of management that seem to drive these imbalances, making them so intractable. At one point, after sharing many of the ideas and experiences presented in this article, Anne asked a simple question that resonated deeply in the group, “Why is it so much easier for us to manage by fear than to manage by love?”

While it has become acceptable in recent years to talk about “the formal system” and “the informal system,” to laud the importance of “communities of practice” and social networks in knowledge creation and innovation, the matter of how we are with one another – and the consequences for how our businesses operate and the results they produce in the world – remains largely undiscussable. Increasingly, fear dominates our societies and most of our organizations. But you cannot fight fear directly. “Driving out fear” will only make people more fearful. It is only possible to gradually supplant fear as the dominant emotion in our system of management by building respect, appreciation and legitimacy – that is love.

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I will never forget that group of HP engineers and managers talking in the most matter of fact way about love – not as a romantic sentiment but as the utmost practical truth about what they knew to work in their work – by the end of the two days with Humberto Maturana. Making it easier to manage by love than by fear will undoubtedly be a long-term, ongoing journey for us all – I suspect a defining journey of our times.

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Endnote

- 1 For the full text of the "Marblehead Letter," see SoL's online Knowledge Repository, www.solonline.org