Getting to “We”
Solidarity, not software, generates collaboration.

Messes are large, complex, seemingly intractable situations that no one can find a way out of. The most tangled messes are called “wicked problems” because people can’t even agree on what the problem is and because the solution will almost surely entail a disruptive innovation [2, 9]. Collaboration is essential for resolving messes. Can our impressive array of “collaboration technologies” help those trying to solve messy problems?

This is not an easy question. The messiness of the problems is usually nontechnical in origin. Lewis Perelman cites infrastructure renewal as a messy problem involving the clash of “green” and “blue” agendas [8]. Green represents the sustainability movement, which aims at environmental protection and resource efficiency; its main concerns include energy-neutral designs for buildings and other infrastructure. Blue represents the security movement, which aims to protect against attacks and disasters; its main concerns include critical infrastructure. The various players do not agree on the relative importance of the two perspectives. Each perspective reaches different conclusions about infrastructure renewal and best use of resources.

Can our technologies help the players to develop a larger, more encompassing perspective, a sort of “blue-green space” rather than two opposing ends of a continuum? [3, 8] Such technologies might appear as major challenges. Blue and green advocates tend to avoid each other. When they do make contact, their interactions often do not go well, ending with legal battles, such as the one in California between the U.S. Navy (wanting to test new sonar systems) and National Resources Defense Council (wanting to protect marine wildlife). Often the groups form political movements that try to “win” by gathering votes and preventing losers from wrestling compromises.

Recent experience at the grassroots is more optimistic. People are tired of failed public projects in parks, development, affordable housing, climate change, and infrastructure renewal. They are turning to facilitated processes that guide them to collaboration. Prominent examples include Appreciative Inquiry [1], Straus Method [10], and Charrettes [7].
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The sad news is that most of our “collaboration technologies” are not able to support such collaboration processes. The good news is that with a clear understanding of the essence of the collaboration process, we can design technologies that can help.

**DEFINING COLLABORATION**

Collaboration generally means working together synergistically [6]. If your work requires support and agreement of others before you can take action, you are collaborating.

**Coordination** and cooperation are weaker forms of working together; neither requires mutual support and agreement. Coordination means regulating interactions so that a system of people and objects fulfills its goals. Cooperation means playing in the same game with others according to a set of behavior rules. In this discussion, we use collaboration for the highest, synergistic form of working together.

Four levels of working together are listed in the table here along with examples of supporting groupware tools. We have listed tools at the highest levels at which they can consistently deliver the expected results. For example, chat is an information-sharing technology but it does not guarantee that participants will cooperate or coordinate on anything. An operating system is a coordination technology and a multiplayer game is a cooperation technology but neither guarantees that its players will synergistically achieve a larger goal.

<table>
<thead>
<tr>
<th>Category</th>
<th>Purpose</th>
<th>Groupware Examples</th>
</tr>
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<tbody>
<tr>
<td>Information Sharing</td>
<td>Exchanging messages and data</td>
<td>blog chat content streaming corporate directories database sharing discussion board document sharing email file servers instant messaging live presentation PC access recording remote blackboard RSS screen sharing version control systems remote VoIP VPN</td>
</tr>
<tr>
<td>Coordination</td>
<td>Regulating elements and players for harmonious action</td>
<td>auction systems classroom management concurrency control decision support interactive voice recognition Internet protocols network meetings online payments operating system project management shopping cart service-oriented architecture support center telescience (remote lab) workflow management</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Playing together in the same game under agreed “rules of interaction” (including games of competition)</td>
<td>collaboratory creation nets discussion forum multiplayer games newsgroup Second Life socially beneficial games wikis (Wikipedia)</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Creating solutions or strategies through the synergistic interactions of a group of people</td>
<td>Appreciative Inquiry Brainstorming Charrettes Consensus workshop Strauss Method</td>
</tr>
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</table>

Although the information-sharing technologies do not guarantee cooperation, coordination, or collaboration, their users sometimes develop impressive systems of practice. For example, the Faulkes Telescope is a facility that provides free access to robotic telescopes and an education program to encourage teachers and students to engage in research-based science education (see http://faulkes-telescope.com). John Hagel and John Seely Brown see this as a fine example of a creation net, a (possibly collaborative) community that learns and invents together. Creation nets can be adopted and managed by organizations seeking to be more innovative [5]. Thus, a community practice can be harnessed and imitated even if no technology embodies it.

It is apparent from the items listed in the table that most “collaboration tools” do not guarantee their users will collaborate on anything. Only a few tools actually qualify as collaboration technologies. The five collaboration tools listed are processes that at best are partially automated.

If we are to achieve the extent of collaboration we keep calling
for, and support collaboration with automated tools, we require a deeper understanding of how collaboration works.

**Collaboration is Not Our First Choice**

When faced with a messy problem, most people do not automatically fall into a mode of collaboration. Our colleague, Nancy Roberts, has confirmed this from her work and uses it to teach a class on “coping with wicked problems” [9].

Roberts begins the class by posing a wicked problem and asking everyone to devise a solution to it. When they come together, the group judges no solution satisfactory. Their proposals typically involve getting an appropriately high authority to make and enforce key declarations. For example, a green infrastructure is best achieved by establishing a new cabinet-level “infrastructure czar” who can set sustainability goals, create timetables for their completion, and inflict punishments on those who do not comply.

After this failure, Roberts asks the students to try again. Once again, when they come together, the group judges no proposed solution satisfactory. This time their proposals involve various forms of competition: the best prevails in some sort of contest. For example, the green and blue advocates both present their cases to the public, who vote on referenda to adopt one scheme after a period of debates and campaigning.

Roberts sends the students back to try a third time. In their frustration over their recalcitrant instructor they start meeting as a group. They discover they can invent solutions that take care of multiple concerns. They find a solution to the wicked problem.

Roberts notes that the students eventually got to collaboration, but not before they had exhausted the alternatives of authoritarianism and competition. These two approaches do not work because they do not show each member of the group how individual concerns will be addressed. Roberts concludes, “People fail into collaboration.”

We are not saying that authoritarian solutions or competition solutions never work. Of course they do. They tend not to work for wicked problems. Our familiarity with them draws us to them first. Roberts is saying that when we encounter a wicked problem, our best bet is to look for a collaborative solution.

The situation in the U.S. after Hurricane Katrina in August 2005 followed this pattern. The wicked problem was to restore infrastructure in a region where most of the residents had permanently fled after the storm knocked out all power, communications, water, transportation, food distribution, sewage, and waste removal. The President’s first proposal (FEMA takeover) was authoritarian. Local authorities asserting regional rights rebuffed that approach. Thereafter, the situation devolved into numerous competitions (including disputes and finger-pointing) between federal and local jurisdictions. Two years after the disaster, the region remained gridlocked by local rivalries, fewer than half the residents had returned, disaster reimbursements were held up by enormous tangles of red tape, and very little rebuilding had even started. Most of the progress that was made came from the grass-roots level, such as businesses, churches, voluntary associations, and neighbors.

So the political system tried and failed at authoritarianism and competition and got stuck, while the grass roots fell into collaboration and made progress. The political system, in its desire to manage everything, did little to empower the grass roots.

Two aspects of our contemporary culture may be further disincentives for collaboration. One is a belief that we can win in every negotiation by standing our ground [4]. This belief leaves little
room for a “we.” The other is a belief in “hero celebration”: we look for a hero in every successful group and give the credit to the hero alone. Who will collaborate if they think “we” will be stolen?

Clearly it will take some work and practice on our part to understand how collaboration works and how to achieve it.

**Structure of Collaboration**

The problem-solving process for a messy problem has three main stages: design, collaboration, and follow-through (see the figure here). Collaboration is fostered through a facilitated workshop. Variations of this process appear in Appreciative Inquiry [1], Strauss Method [9], and Charrettes [6]. The design stage identifies all the interested parties and fruitful questions for them to explore. The facilitated workshop leads the participants through a five-stage process, described below. During the follow-through, teams organized at the workshop do their parts to implement the solution. The five stages of collaboration are:

1. **Declare:** The group’s leader or organizer declares a question for the group to consider. The question emphasizes new possibilities rather than current deficits. Each group member declares acceptance of the need or desire to work together on the issue, and openness to the perspectives of the others. Without the buy-in of everyone in the group, egos can get in the way and hijack the process.

2. **Connect:** The members take time to become present and engaged with each other. They explain what concerns bring them to the gathering. They state their aspirations, what is at stake for each of them, and why they see a need for collaboration. They look for and acknowledge connections such as mutual friends, business interests, or education.

3. **Listen to and learn all perspectives:** Now the group speaks and listens, as openly as possible, to the concerns motivating each member on the issue. The goal is to expose all the concerns and learn how and why each matters to some member. Members tell stories showing how concerns affect their worlds. For example, “Low-wattage light bulbs matter to me. My company replaced a thousand incandescent bulbs and saved $5,000 on our electric bill in the first year. That’s a lot of cash for our little company.” The listening must be open and inclusive—seeking to gather many different perspectives, and avoid any initial judgment that one is better than another. Conversation is for clarification—not justification or argument. Comments beginning “What if...” and “I wish...” fit, but not “That won’t work.” This stage is complete when no one has any further ideas to express; everyone appreciates that the group has multiple concerns to consider; many may see a common core of concerns the group can work with.

4. **Allow a “we” to develop:** Members of the group continue the conversation about what matters for as long as necessary until they develop the experience of a “we.” The early sign of group identity and solidarity is members making tentative proposals that recognize, respect, and even own the interests and concerns of the other members. The later sign is reconfiguration of concerns—for example, someone concerned for authoritarian, protective, anti-terrorist government might reconfigure into a concern for strong, safe, resilient community. The facilitator keeps the proposals tentative and the mood exploratory. The conversation will evolve into a shared feeling that we are all in the same mess together, and by staying together we can resolve the mess. The mess may start to unravel as the members become aware of and take care of their interlocking concerns. Occasionally, the mess will evaporate in the light of the reconfigured concerns of “we.”

5. **Create together:** Now the group engages with the actual work of creating projects. Some will be variations of the tentative earlier proposals, others new. To win group support, projects must address multiple concerns. Members offer to lead projects; other interested parties join the project teams. The facilitator guides members with doubts about a proposed project to question in a “we” mood of exploration, clarifying objectives and exploring consequences. For example, instead of saying, “This project will be too expensive,” the member could ask, “How will we get the resources to do this? In my experience they will be considerable. Can we refor-
mulate in a less expensive way?” As proposals are discussed and modified in this way, the group will identify the highest priorities and gravitate toward a small number of possibilities. These can then be tuned for more effective action. The group’s final agreement on projects to take forward cements its solidarity and service to a larger cause.

One of the facilitator’s main duties is to manage the group’s mood: it should be open and appreciative throughout. Openness encourages everyone to contribute ideas and disclose concerns. Appreciativeness invites creativity. The contrasting mood of problem-fixing tends to be narrow; it focuses on what’s wrong rather than what could be; it discourages group solidarity [1]. The facilitator also displays all new points learned, proposed, or created on shared computers or wall posters. This form of group memory helps everyone recall ideas belonging to the group as a whole [10].

Consider a scenario of a group of green and blue infrastructure advocates deciding to collaborate together despite the clash between their perspectives. Their discussion might evolve as follows. They discover that some of their members are motivated green because beloved family members succumbed to lung diseases. They discover that others are motivated toward security because their businesses have been robbed at gunpoint and because one of their companies went out of business in a blackout. They discover that all of them are hesitant to back a centralized government solution because of the government’s poor track record; they do not want to risk locking in a bad solution. They start speculating about grassroots solutions that make it desirable and fashionable to be both green and secure. They agree on committees and working groups that will sponsor contests for well-designed energy-efficient products and stimulate research into personal home power plants that don’t depend on the grid being operational all the time.

**Limitations of This Structure**

How far does the collaboration process scale? We know that it works for workshop-size groups (approximately 50–200 people). It extends to larger communities if the workshop represents them well and if the sponsors can support the project teams created by the collaborating group. What about messy problems that affect millions of people? How do we bring about enough collaboration to influence so many?

This of course is the central question in efforts to deal with large-scale wicked problems such as sustainable infrastructure or global warming. We don’t yet know how to make the collaboration process scale up to enlist millions of people in a solution. Currently, problems of such scale tend to be resolved by strong leaders who combine technology with political and media operations to inspire collaboration. For example, Candy Lightner and Cindy Lamb established Mothers Against Drunk Driving (MADD) as an international movement. U.S. Senator George Mitchell established the “Mitchell Principles” that created a workable framework for dialogue that ultimately led to the peace agreement in Northern Ireland. Amory Lovins, who focuses on technical facts and avoids moral judgments, has helped clients as diverse as Wal-Mart and the U.S. Department of Defense deal with energy issues.

**Conclusion**

Collaboration occurs when a community creates a solution to a messy problem that takes care of all their concerns at the same time. Collaboration is an ideal achieved far less often than it is invoked. It is often confused with information sharing, cooperation, or coordination. Most of our “collaboration technologies” are actually tools for information sharing. We have a few tools for cooperation and coordination, and very few for collaboration.

Scaling up the known collaboration processes to country or world sizes will require significant advances in collaboration tools and networking. Their designs will be based on deep knowledge of the practices now used by the human facilitators of today’s processes.

You can use the five-step collaboration process anytime a small-scale collaborative solution is needed. You do not need the full process with workshop. The full process is most useful for achieving collaboration within a large, more diverse community.

Collaboration does not mean
that you give up or compromise your dearest concerns. It means designing a solution that recognizes your concerns. The process often leads to a reconfiguration of everyone’s concerns. The hallmark of successful collaboration is the experience of solidarity and new energy: a “we.”

REFERENCES


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