Learning and Performing through Hastily Formed Networks

GEORGE ROTH

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...We heard a terrible crash – a sound no one ever wants to hear while flying – and then the engines wound down to a screeching halt. Ten seconds later, there was a strong smell of jet fuel. I knew we would be landing and thought the pilot would take us down no doubt to Newark Airport... Next thing we heard was "Brace for impact!"... We began to descend rapidly and it started to sink in. This is the last flight. I'm going to die today...

It was a violent hit – the water flew up over my window – but we bobbed up and were all amazed that we remained intact. There was some panic – people jumping over seats and running towards the doors, but we soon got everyone straightened out and calmed down.

There were a lot of people that took leadership roles in little ways. Those sitting at the doors over the wing did a fantastic job; they were opened in a New York second! Everyone worked together – teamed up and in groups to figure out how to help each other.

I exited on the starboard side of the plane, three or four rows behind my seat through a door over the wing and was, I believe, the 10th or 12th person out. I took my seat cushion as a flotation device and once outside saw I was the only one who did; none of us remembered to take the yellow inflatable life vests from under the seat.

We were standing in six to eight inches of water and it was freezing. There were two women on the wing, one of whom slipped off into the water. Another passenger and I pulled her back on and had her kneel down to keep from falling off again. By that point we were totally soaked and absolutely frozen from the icy wind...

As more ferries arrived, we were able to get people up on the boats a few at a time. The fellow in front of me fell off the ladder and into the water. When we got him back on the ladder he could not move his legs to climb. I couldn't help him from my position so I climbed up the ladder to the ferry deck where the first mate and I hoisted the Jacob's ladder with him on it; when he got close enough we grabbed his trouser belt and hauled him on deck. We were all safely off the wing.
If you have spent much time in New York airports, you have probably had some exchanges or experiences with airline staff and passengers that were less than cordial, perhaps even uncooperative. As this email excerpt, written by passenger Gerry McNamara, illustrates, when U.S. Air flight 1549 ditched into the Hudson River on January 15, 2009, that changed. Passengers and flight crew, together with ferryboat operators and professional rescue personnel, collectively created a hastily formed network to care for each other and save every life. There was a spontaneous cooperation and a sharing of responsibilities and resources to fulfill a higher goal.

Dr. Peter Denning at the Naval Postgraduate School coined the term “hastily formed networks,” or “HFNs,” in October 2004. He and his colleagues examined responses to crises that involved military, civilian government, and non-government organizations. All of these crises required leveraging distributed resources and guiding collective action immediately, without waiting for direction from central authorities. “Hastily formed” implies an unexpected and cataclysmic event – such as a terrorist attack, a large power failure or a natural disaster – that requires a rapid response and an unprecedented level of coordination. Crises result when preparation is not possible or is inadequate, no one organization has the ability or resources to act independently, and conditions are so dire that urgent response is essential. “Networks” refers to the formal and informal networks of people and organizations that respond to those crises, which may or may not have existed, or worked together, before the event.

In November 2005, a group of SoL organizational members became interested in network responses to crises. Although organizations typically rely on formal structures and defined decision-making processes to coordinate activities, these officers wondered whether HFN insights could be applied to urgent and unpredictable circumstances affecting their own organizations. Together with SoL staff, the group decided to develop, test, and refine ideas about what leads to effective HFN behaviors by undertaking a number of individual learning projects. In June, 2006, after several discussions and meetings, they formed a team,
engaged a researcher, and initiated the Hastily Formed Network project, whose guiding question was "What creates, sustains, and transforms individuals and organizations into effective networks?" This article describes the team’s work and findings.

Through a series of learning projects, the team found that four conditions were necessary for effective HFNs:

1. preconditioning participants’ beliefs that they could both contribute and subscribe to common overarching goals
2. mobilizing action by behaving predictably, communicating conditions, convening people and holding them accountable to their commitments
3. relying on minimal structure, perhaps only a virtual communication space, to assess progress and report on conditions, and
4. leading openly by providing direction, clarifying how decisions are made, sharing power, and enabling action by other people.

These findings are based on a methodology that enables insights and lessons to be developed and tested across an ongoing set of learning projects. Four of the learning projects are summarized in this article to illustrate the HFN findings. (See Table 1 on page 33 for a complete list.) Not all efforts to initiate learning projects were successful. The issues associated with carrying out learning projects in SoL, which is a networked, membership-based organization, provided insights regarding challenges inherent in operating as a network, and were considered part of the data by the team. Project team members also shared personal experiences of their involvement in HFNs. The team drew upon studies of studied crisis situations, as well as social networks, organizational networks, and organizational relationship literature. The group also tested the concepts it was learning about effective network behaviors at SoL meetings and at conference workshops. These audiences worked with the team to develop HFN concepts further by sharing their own experiences, and helping to frame better questions.

Each of the following four sections begins with one of these four key questions. In each section, findings are illustrated by describing one of the learning projects and providing insights on this aspect of effective HFNs.

**QUESTION ONE:**
*What preconditioning is helpful for effective network action?*

**Defining Preconditioning**

A condition for an effective network is an ability to communicate, which requires three elements: 1) the physical systems that provide a communication medium, 2) the individuals and organizations that act together, and 3) developing and agreeing upon interaction rules. Preconditioning implies that a priori efforts can enable more effective crisis responses through networks. These efforts include training, simulations, pre-positioning of equipment, testing technical systems and creating standards for interoperability, and developing inter-organizational relationships. One of the SoL HFN learning projects, conducted by people from the Naval Postgraduate School, developed technical standards for information and communications technology to support civil-military communications. They created educational materials that teach these guidelines based on disaster relief scenarios from Hurricane Katrina.

**Southeast Asia Pre-crisis Communities Learning Project**

The Southeast Asia Pre-crisis Communities learning project provides additional insights into HFN preconditions. Initiated by U.S. Army representative Colonel Fred Krawchuk, the project created a cross-sector conversation space by bringing people from a small geographic region together in multi-day, facilitated meetings. It sought to improve relationships among organizations under the assumption that having these relationships in place would contribute to better coordination in a crisis. These organizations included U.S. government, foreign government, and non-government agencies responsible for science and technology (providing imaging, mapping, modeling and simulation services), humanitarian relief (responding to...
crises and working with U.S. AID, Red Cross, and other humanitarian organizations), and education (providing methods and training for policing and maintaining security). Across several related project efforts, facilitated meetings were organized and held to bring people from multiple organizations together to talk about communicating with one another and working together in crises. The discussions in meetings largely focused on technical interoperability and assessing information technology tools.

The participants found that averting a crisis or conflict might also be possible if organizations from different sectors (public, private, governmental) worked together. Figure 1 shows the relationship between states of crisis and stability in a global setting. This diagram was drawn after team members reflecting on these pre-crisis meetings developed the insight that improving the response to a crisis and avoiding crisis could both be addressed by creating the conditions that would enable effective HFNs. The ability to move from crisis to stability requires multiple agencies working together, and the ability to avert a crisis, or war, might be possible if agencies worked together before a crisis. Creating a capability to activate HFNs could be useful in both crisis response and crisis avoidance.

Preconditioning Findings
The Southeast Asia Pre-Crisis Communities project focused on preconditioning, but what was found there was also evident in the other networks the team studied. Some of the preconditions necessary for networks to work effectively are obvious: people must be willing to come together, and must share a sense of urgency. Other preconditions are less intuitive. Effective networks are comprised of people who believe that they have something to contribute, who are willing to subscribe to an overarching goal, and who are ready to apply their own knowledge, skills, and resources to improve the situation. These people’s attitudes allow them to supersede the responsibilities of their organizational roles or the constraints of their job descriptions. At the same time, when people are willing to disclose what they do not know or cannot do, decisions can be made more rapidly, and resources allocated more effectively.

The ideal precondition for an HFN is having a pre-existing social network in place, so that people already have some degree of trust, and share common values. Trust is built through personal

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**Preconditioning**

**Effective HFNs were enabled by the following:**

**Action:** Participants had a readiness and willingness to act, they believed that they could contribute, acknowledged their own needs, and subscribed to common overarching goals.

**Theory:** Individuals and organizations engage in networks based on their own self esteem, trust of others, and mutual respect.

**Capacity-Building:** Teaching and utilizing methods that affirm people from different backgrounds helps everyone to recognize and value diverse contributions.
connections or through more extended networks. When trust and respect are in place, HFN team members who participated in HFNs, described their experience as satisfying and meaningful, as well as fun. Several people interviewed described their personal HFN experiences as “a lifetime highlight.”

**QUESTION TWO:**

**How is action mobilized throughout a network?**

**Defining Mobilizing Action**

Mobilizing collective action occurs when individuals act on behalf of the whole community. Effective action through a network takes place when individuals’ goals and interests align, so that independent actions complement each other and produce cumulative results. The Menlo Lab project illustrated how a network mobilizes action when this alignment exists.

**Menlo Lab Community Transformation Learning Project**

Tracy Huston, a representative from Nissan responsible for its global executive leadership development at the time of the HFN project, initiated the Menlo Lab’ projects to provide real-world innovation grounds through which leaders from business, government, education, non-profits, and civic groups could co-create, test, and evolve practices needed to initiate and sustain collective action. Out of the shared intentions to address the economic, social, and ecological conditions needed to sustain our communities, Menlo Lab organized experiential retreats where network members co-evolved practices to integrate personal, relational, and structural dimensions of change. Using an “inside-out” change approach, Menlo engaged cross-sector networks of community residents to surface the shared aspirations that they wished to enact, and then to co-evolve their visions and test concrete ideas through rapid prototyping. These networks mobilized profound innovations in impoverished areas in California, Michigan, New Mexico, and South Africa.

In Detroit, with funding from DTE Energy and Cigna Healthcare, Menlo Lab organized community engagement events through which residents and stakeholders developed visions for renewal in some of the most blighted city neighborhoods. In a “Dream Garden,” residents shared their hopes for the future, and in a retreat held with leaders from all Menlo projects, a whole system picture of the future was created: better ways of living and learning, health, safety, sustenance, and connection. One innovation, surfaced by local urban farmers, was prototyped with DTE employees to
create a breakthrough in local food production and distribution. They developed an urban farming model as a way to create jobs and provide food security in low-income communities. That urban farming model evolved, and was adapted for Los Angeles Menlo Lab projects.

The Menlo Lab initiatives found that initial ideas must be put into action quickly through rapid prototyping, allowing learning to occur in low risk environments and enabling new ideas to evolve. This learning-in-action was uncomfortable for many people; groups often get stuck in planning cycles that avoid action. In Detroit, when their ongoing conversations failed to mobilize action, Jason Schulist, a leader at DTE, pushed the group into prototyping their urban farming idea by promoting weekly sales of local produce to DTE employees. While some leaders resisted the prototypes, those who embraced learning-in-action significantly improved the local agribusiness model and strengthened the network’s capacity for collective action. Menlo’s strategy was to “follow the energy,” nurturing leaders who wish to collaborate through action while holding space for those who had yet to find the will to act. Their belief was that as the network grows stronger, it provides the support that makes it easier for others to join in.

**Mobilizing Action Findings**

Mobilizing action requires a multi-stakeholder engagement process, where people from all parts of the system “see” current conditions together, surface aspirations, and co-evolve their desired pictures of the future. In Detroit, the diverse nature of the group allowed collective wisdom to generate innovations that otherwise would have been overlooked. At the same time, the team encountered resistance on the part of some people to collaborate, leaving gaps in expertise and resources needed for the whole community vision to be enacted. This learning led to a more concentrated effort up front in Los Angeles to not only “get the whole system in the room,” but to get those who were committed to working in a collaborative HFN-like fashion, which allowed them to generate more results in less time.

**Mobilizing Action**

Enabling action, particularly in the face of adversity, involved the following:

**Action:** Communicating to and engaging people by creating clarity on conditions, surfacing aspirations, co-evolving vision, and testing ideas through prototyping enabled collective learning and action.

**Theory:** Networks of diverse stakeholders perform best when they can together see current conditions, accept personal accountability, and act in the service of a larger shared purpose.

**Capacity-building:** Action results when people are given opportunities to learn, act, and co-evolve ideas in ways that recognize, develop, and strengthen their will for change.

More subtle challenges for mobilizing collective action had to do with sustaining the will for enacting change. Some people who initially stepped into leadership roles were unwilling to hold accountability when projects moved into prototypes. Some expected others to do it for them. These findings applied to other HFN learning projects: in order to act effectively, nurturing leaders not only provide information, but also hold the space
open for others to take on leadership roles. This approach enables networks to be accountable for results, yet lets people move independently and predictably forward toward common goals.

Across the HFNs studied, when leaders relinquished control, they encouraged action by others and helped to build or maintain relationships. Leaders could enhance people’s actions by sharing their situational understanding as well as information about expertise and resources. Communicating status and available expertise and resources is a function often performed by a central authority. While some degree of central authority for collecting and sharing information is helpful in mobilizing initial action, the team found that the centralization of information, decision-making, or expertise later becomes an obstacle for networks in mobilizing continued action.

**QUESTION THREE:**
What minimal organizational structures are required?

**Defining Minimizing Structures**
The effectiveness of a network depends upon individuals’ abilities to communicate, coordinate, and influence each other. Influence takes place through open relationships. The premise of hastily formed networks is that some minimal structure is necessary to create coordinated action, and that this structure can quickly be put in place for the network to start to function. The Strong Angel III simulation, which members of the HFN project participated in, provided insights about creating minimal structure.

**Strong Angel III Learning Project**
Strong Angel III was the third in a series of efforts to test technologies that enable information flow...
and enhance cooperation among civil and military organizations in a disaster relief or humanitarian crises. The scenario simulated a lethal pandemic coupled with a cyber-terrorist attack. It took place on the Fire Training Academy grounds in San Diego, California from August 21 to 26, 2006 and involved approximately 800 participants from 200 organizations.

Disaster creates conditions where people initially focus on their own efforts, and do not look outward to help others. In this simulation, resources, such as civilian and military medical staff, know they will be called upon in an emergency. They act according to plans, often to only find that their response does not effectively address the situation. That is when they need to shift into a learning mode. They become a hastily formed network as they collectively undertake experiments to improve their combined responses.

Bob Wiebe, an organizational representative to SoL from Boeing, and Dan Compton, a Boeing colleague, attended and observed Strong Angel III. They created diagrams that mapped information flows and feedback loops among participants. They used their diagrams interactively, giving the people they observed feedback to test the assumptions they used in developing the systems diagram. One diagram (see Figure 2) depicts conditions in which people were able to create a communications network with limited capabilities. The unstable communications reinforced the behaviors of some people who took increasingly more authoritarian and intractable positions.

Two days into the Strong Angel III simulation there were few and limited communications across networks. People focused on their own systems. They were unwilling to change the protocols that enabled their systems to operate effectively, which constrained network interoperations. An aspect of this situation is found in the maxim, “you have to give a little to get a little.” People had to accept a limitation to their system for the network as a whole to operate; they had to give up something without certainty of a return.

A pattern which was common across different groups of people emerged: the initial “king” phase, as people started acting autonomously, then a second coordinated exploration phase, when people asked each other what they wanted to accomplish and built working interfaces (that were very fragile). The third or collaborative discovery phase occurred when people took what they learned from creating on the fly to make small working solutions that were linked up into a large-scale working network in a way that no one had previously envisioned. The collaborative discovery phase was enabled by the actions of “invisible” or non-traditional leaders. These leaders did not rely on any one authority, but looked around at what was developing, asked questions that prompted new thinking, and linked people who were doing something effective together. The small working solutions built momentum and the invisible leaders made it easy for others to join in and add to the solution. These leaders were invisible because they never sought recognition, and simply called others over to “look what we were able to create.”

In capturing, representing, and feeding back network actions, Wiebe noticed three modes with

### Minimizing Structure

Minimal structure for facilitating HFNs is based on the following:

**Action:** Less structure, particularly centralized structure, is better for distributed action; need some “communication space” share information, to create and model norms, to provide clarity on intent, to assess reality, and to give feedback on conditions/performance.

**Theory:** A conversation space that serves network requirements also models, develops, and uses norms to illustrate and clarify intent, all of which model behavior and ultimately determine performance.

**Capacity-Building:** The attitude and approach taken to create structure, such as developing the “conversation space,” model acceptable behavior and thus have implications for the network.
distinct behavior patterns: 1) the aftermath of a triggering event and formation of a network mode (behavior patterns shift from normal to non-normal interactions); 2) acting in and sustaining the network action mode (operating in a non-normal state); and 3) dispersing and disbanding the network mode and returning to a normal mode (going from non-normal behaviors to a new normal mode, which may be different than initial normal mode).  

Minimizing Structures Findings

Relationships are the minimal structure of HFNs; they are essential to coordinating among people and solving problems. It was clear in Strong Angel III, and evident in the other networks studied, that although they tried, people could not impose conditions on others. If you were to graph the relationship between individuals in a network, you would create a drawing that looks like a spider’s web. A spider’s web is made up of threads. You can not push on a thread; if you try, it simply folds and goes nowhere. It is the threads pulling on one another that hold the web together. Networks, like a web, are based on a structure that is different from what is found in traditional organizations. The relationships in organizations are defined by reporting lines, where managers push decisions and actions through those reporting lines. A network does not allow leaders to push their decisions or actions through that web of relationships, as they would in an organization’s reporting lines.

Given the importance of acting quickly, less structure is better than more structure in HFNs. HFNs require a conversation space to share information, enable decision-making, and communicate decisions. The conversation space enables assessment of the current reality, attention to critical situations, clarity of the intent of the network, and feedback on changes over time. Individuals’ conversation space experience creates and reinforces network norms. The norms manifested in the conversation space influence the behaviors of people whose actions are distributed across the network. When central authorities attempt to specify behaviors, they cannot push them through as they could in an organization with reporting relationships, and their efforts are largely ineffective.

In Strong Angel III and the other networks examined, someone had to emerge as a convener for a network to function effectively. These conveners brought people together, and did so by creating conversation spaces and modeling behavior norms. Often the convener has some expertise related to the situation or authority because of his or her position. The convener was effective not by imposing his or her expertise or authority, but by engaging all constituencies in working across organizational, functional, or cultural boundaries. An organization has to create structures and processes before it can act effectively, while an HFN acts before it creates or coheres its structures and processes. The structures and processes in an
HFN evolve over time, and only the minimal set of structures and processes needed for a network to function will start that evolution. After the HFN has ameliorated the crisis conditions, structures and processes become instituted because people repeat what worked.

**QUESTION FOUR:**
What leadership capabilities and characteristics are required?

*Defining Distributed Leadership*
Leadership is not only the act or instance of guiding people; it also includes motivating other people to lead. Taking action and establishing a system that distributed leadership within a network was what leaders did in the successful HFNs that were studied. Leadership was exemplified by doing – by taking appropriate action while other people often waited. Emergent networks do not appoint leaders, nor do crisis situations provide the luxury of waiting for anointed leaders. Under normal circumstances, a person’s reputation and credibility enables people to follow and make him or her leader. In a crisis situation, it was not what a person had done before that made him or her a network leader, but what he or she did at the time that inspired others to trust, respect, follow, and thereby make him or her a leader. Examples from the study of a humanitarian relief simulation illustrate the distributing of leadership in the functioning of an effective network.

**Humanitarian Studies Initiative Refugee Simulation Learning Project**
As part of its year-long course of studies, the Humanitarian Studies Initiative (HSI) sponsors a three-day humanitarian relief simulation as a capstone event. In April 2007, the simulation of a humanitarian crisis in Chad involving nearly eighty people took place in a state park north of Boston. The thirty student participants were individually assigned to specific roles in three fictional NGOs: WFP (World Food Programme), CRS (Catholic Relief Services), and IMC (International Medical Corps). These NGOs provide logistics for shipping food and supplies, relief worker services, and medical services, respectively. Each NGO needed to assess situations in five refugee camps and create reports for delivering services. A dozen ROTC (Reserve Officers Training Corps) students from six Boston area universities played the roles of Chadian military and rebel militia (their role play in this simulation gave these students credits in their programs). University faculty and staff played roles of head office staff, as well as other roles, such as refugee camp directors, refugees, local NGO staff, and sometimes rebels. The students staffing the NGOs had to deliver reports, briefings, and, finally, a service delivery plan, to the head office staffs. The students in the three NGO teams were each assigned to different roles in areas such as logistics, medical, finance, security, and communications. Creating service delivery plans required a variety of assessments. The urgent mission was assessing the refugee situation, communicating needs, and creating plans to begin providing the needed humanitarian aid.

The simulation required individuals and teams to cope with challenges in organizing and perform-
ing their duties while responding to the stress of external distractions in an uncomfortable, dynamic, and “dangerous” environment. Upon arrival into the “country,” government inspectors treated aid workers roughly; they searched their bags, and took personal and valuable items. Following a short briefing, students were sent to field locations. Each NGO team had members living and working from one or more of the three relief camps: Abeche, Goz Beida, and Guereda. Each NGO team had to assess and monitor conditions at all five refugee camps: Am Nabak, Farchana, Gaga, Touloum, and Oure Cassini. These camps were all several hundred yards to a half-mile apart (see Figure 3 for simulation map). Refugee populations and their needs are constantly changing, affected by the political situation, government and rebel actions, as well as food, water, and health conditions.

Each NGO team needed to work through dividing responsibilities, understanding roles definitions, and working out task assignments. To start, the people on each NGO team focused almost entirely on internal team issues in working toward their deliverable goals. Meanwhile, the external environment changed rapidly. People were attacked by rebels, kidnapped by police, forced to pay bribes, had to respond to the theft of food and supplies, and keep up with sudden shifts in refugee populations. Dealing with internal issues was a deterrent to any alignment across the three NGO teams. Many individuals and several NGO teams were nearly completely overwhelmed. That stress required a few individuals to reach out and work across teams to share tasks and resources. This new mode of operating created a hastily formed network, and based on the relationships among individuals across teams changed individual behavior, team functioning, and overall crisis response performance.

**Distributing Leadership Findings**

The Humanitarian Studies Initiative simulation illustrated the importance of leaders encouraging flexible linkages within and across teams in responding to overwhelming circumstances. The simulation’s procedures were to assign people to specific roles. NGO teams’ behaviors in following those procedures varied greatly. The leaders of two NGOs focused on clarifying members’ responsibilities, and when individuals failed to perform their assigned tasks, the team leaders questioned their commitment or competence, and in some instances reassigned those people. One NGO team leader focused on helping, and did so by asking team members who had completed their tasks to help others. This flexibility created better performance within the team, higher morale, and this team’s members later took action to partner with individuals on other NGO teams.

The most important leadership characteristic observed in the HSI simulation – and seen in other HFNs – was the distribution of leadership. Distributing leadership roles and responsibilities allowed other people across the network to take appropriate autonomous action. The leader often emerged as other people looked to that person in choosing their own course of action. In HFNs, where timely action is of the essence, leaders need to act quickly and do so in ways that compels other people to act as well. These leaders establish conditions where people do not wait for permission, but are

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**Distributing of Leadership**

Leadership in effective HFNs is based on the following concepts:

**Action:** Leaders enable actions in others yet act when they are able; they remain open to change and sense direction, communicate the reality of dire conditions, clarify decision-making processes, and are ready to relinquish or share power.

**Theory:** Effective network leaders are perceived as people with authenticity, integrity, empathy, and compassion, and have shown in the past that they will continue to behave that way.

**Capacity-Building:** Leaders create conditions across organizations that identify and value leadership; they enable leadership behaviors in others by identifying, developing, and mentoring people to step forward as new leaders.
inspired to follow and act in the face of crisis and uncertainty. Effective network leaders provide examples with their own behaviors: they both step up and push forward, or step back to let others lead, depending upon the circumstances. As leaders, these people had a high tolerance for ambiguity, and were always willing to take in suggestions. They had a clear sense of personal identity, did not panic in crisis, and provided a calming influence for others.

Effective leaders in the networks that were studied did several things well: they emphasized effort, reported progress, offered help, pointed out available resources, and celebrated accomplishments. These leaders remained open and sensed the direction, communicated accurately and effectively the reality and dire extent of conditions, clarified decision-making processes, and relinquished control when appropriate. Most importantly, people looked to these leaders because they were trusted: people describe these leaders as genuine, empathetic, caring, and capable. Our proposal is that the perception of a leader’s character determines whether others in a network will follow.

CONCLUSION: What creates, sustains, and transforms individuals and organizations into effective networks

The answers to this guiding question are not unique to hastily formed networks: effective response to change – or crises – depends on the relationships, actions, structure and leadership of a network. The management of industrial era organizations places those people who are presumed to be the most experienced, best educated, and most knowledgeable at the top of hierarchies, and requires them to direct others in creating desired outcomes. This approach can work in relatively stable conditions. But new technological capabilities and global markets have produced such dramatic changes that the only certainty for the future is continued change. Despite the certainty of future changes, many managers hold onto their past assumptions and depend upon
centralized decision-making to operate their organizations. If it can be managed and directed appropriately, a network, because its members act autonomously and coordinate through their relationships, is an organizational form that is responsive to change.

The value of pre-conditioning, mobilizing action, minimizing structure, and distributing leadership are not unique to hastily formed networks. Most, if not all, these concepts would be good management practices and lead to improved results in any organizational context. But in traditional organizations, managers control resources and impose authority to achieve desired results. In hastily formed networks, timely action is of the essence and people must share resources and coordinate spontaneously. Crises create unforgiving conditions through which we can learn about effective action that could be applicable in all organizations. Crises make it suddenly obvious that existing structures and processes are inadequate, and that people must forget or neglect them to enable new actions. A crisis of great magnitude compels people to act, and they often act in new and better ways.

The HFN Project investigated four questions that found practices that, over time, enabled and improved networks. First is preconditioning the network. In each HFN, someone emerged as a convener. A convener brings people together, and people come together based in part on their perception of and relationship with the convener. In getting people together, he or she creates a conversation space, and through that space, models norms for the network. An important part of preconditioning was the perceptions people had and developed of the convener and one another. Second is mobilizing action, or getting people to work together and in new ways. The convener was effective not by imposing his or her expertise or position, or by claiming decision rights, but by working across organizational or functional boundaries to gather all constituencies together. People had to trust a convener to follow him or her, and believe that their actions were in everyone’s best interests. Third is the minimal structure that is required for an HFN to operate. An organization requires and creates structures and processes to act effectively, while an HFN acts before it coheres structures and processes. The structure in an HFN evolves over time. As that new action produces benefits, what worked is repeated and becomes instituted because it was effective. Fourth is developing of modeling the requisite leadership capabilities and characteristics. The effective characteristics of leadership are those that convene and inspire people in a service-over-self manner. People follow others without authority when they identify with that leader, have confidence in his or her character, and desire the behaviors that he or she models.

This article proposed and illustrated the four network conditions that were found to be effective in HFN learning projects, member experiences, and the development and testing of these ideas with many colleagues. Following SoL’s Applied Learning Process (see the Knowledge Repository at solonline.org), the HFN Project team looks forward to new questions and concepts that other managers, researchers and consultants develop and test in their own, whether hasty or slow, organizational settings.

**ABOUT THE AUTHOR**

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## Table of SoL Hastily Formed Network (HFN) learning projects

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<th>Learning Project Name</th>
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<th>Summary Description</th>
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<td>Humanitarian Relief Panel</td>
<td>Peter Walker, Tufts University Feinstein International Center</td>
<td>Humanitarian aid is established and delivered through cooperating networks of non-government, government, and military organizations. The Feinstein Center uses research, education, and dialogue to develop and promote operational and policy responses to protect and strengthen the livelihoods of people living in crisis-affected areas. A proposed learning project was to assemble and engage humanitarian aid coordinators in a panel session to present and reflect upon their experiences in different settings. The Humanitarian Relief Panel did not move from a concept to a planning stage, in part because, for this setting, there was too much discussion and it took too long between discussing and applying ideas.</td>
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<tr>
<td>Storm Teams</td>
<td>Jason Schulist, Susan Putrycus, DTE Energy</td>
<td>When there are power outages, DTE Energy operates in a “storm” mode, dispatching field teams to restore service while administrative people staff call centers and managers direct activities. Outages from storms are unpredictable events that occur, on average, seven times annually. DTE was in the 3rd quartile in storm cost and restoration time. A learning project was proposed to conceptualize storm teams as distributed, hastily formed networks. The project proposed cycles of observing storm teams, applying improvements, and observing changes in the next action. Storm Teams did not proceed to become a learning project for multiple reasons: there were 14 changes already underway and the new leader opposed adding another initiative and relinquishing control.</td>
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<td>Southeast Asia Pre-crisis, Cross Sector Communities*</td>
<td>Fred Krawchuk, Colonel, US Army; Sue Higgins, Naval Postgraduate School</td>
<td>Sections of southeast Asian countries are areas where Islamic movements have created opportunities for terrorists’ recruitment, training, and action. A series of meetings were hosted by US military organizations responsible for science &amp; technology, humanitarian relief, and education. The organizations sought to work together in an applied research project to create a coherent network across public, private and non-profit sectors in a small, region in Southeast Asia. The goal was to engage leaders from local government, non-government, and civilian organizations to discuss possible problems as well as build relationships to improve decision-making and response in the event of crises. Southeast Asia Pre-crisis, Cross Sector Communities is described to illustrate insights for the preconditioning that are helpful for effective HFNs.</td>
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<td>Constant Tsunami Response</td>
<td>Greg Clark &amp; Sheila Covert-Weiss, Ford</td>
<td>Reductions in white-collar employment created a 35% decrease in the information systems department’s staffing. The consequences for remaining staff after layoffs was fewer people to do needed work, the loss of colleagues, and survivor’s anxiety. Responding to service requests or carrying out projects required a more networked organizational form. Ford’s dramatic and unceasing changes were equated to a “constant Tsunami.” The pace and depth of changes were such that the IS department could not rely on either a formal reporting structure or its informal network of personal contacts to provide needed services to users. Constant Tsunami Response did not proceed to become a learning project. The situation was too uncertain to plan events, and people favored supporting individuals through their crisis over a learning project response.</td>
</tr>
<tr>
<td>Menlo Lab*</td>
<td>Tracy Huston, Nissan Jason Schulist, DTE Greg Clark &amp; Sheila Covert-Weiss, Ford</td>
<td>A multi-disciplinary, self-organizing network of innovation and leadership transformation experts from corporate, education, non-profit, and government sectors that work with local community leaders to address the relational and systemic causes of their ‘persisting crises’ in education, healthcare, crime, and poverty. These learning projects sought to engage leaders of local communities in Duarte, California and Detroit, Michigan, and branched out with connections into other projects, organizations, and involvements. Menlo Lab is described to illustrate insights for mobilizing action in effective HFNs.</td>
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</table>
The Humanitarian Studies Initiative (a joint program hosted by Harvard University, with MIT and Tufts participation) holds a capstone event each year for its students involving faculty and volunteers. The 2007 simulation involved a Chadian humanitarian crisis to which NGO teams were to respond. These teams were in the field to collect data, assess the situation, provide aid, and develop service delivery plans for their organizations. The simulation took place under adverse weather conditions – over three days in a state park outside of Boston on a cold and rainy April weekend. Participant observation was the basis for a report on the simulation that was used to draw insights and lessons for leader and participant behaviors that contributed or detracted from the effective functioning of the social networks that, in the face of this humanitarian crisis, needed to be joined to meet task demands. The HSI Refugee Simulation is described in this article to illustrate insights for leaders and leadership in effective HFNs.

Strong Angel III is the third in a series of efforts to demonstrate and test technologies and techniques to enable information flow and enhance cooperation among civil and military organizations in the event of a disaster or humanitarian crisis. It took place on the San Diego Fire Training Academy grounds from August 21 to 26, 2006, and involved approximately 800 participants from more than 200 organizations. SoL HFN team participants from Boeing and the Naval Postgraduate School attended and were active in this simulation, which involved the scenario of a lethal pandemic coupled with a cyber-terrorist attack to provide an adverse context designed to stimulate learning, sharing and experimentation. The Strong Angel III is described in this article to illustrate insights for minimal structures required for effective HFNs.

SoL is developing and responding to new opportunities. One of these opportunities is requests from companies for consulting services. As a non-profit organization that advances organizational learning, SoL has organizational, research, and consulting members, and only a small permanent staff. SoL's projects are done by volunteer members, with its staff organizing and convening meetings, responding to member requests, managing some projects, but not writing or responding to requests for proposals (RFPs). SoL staff participated in the HFN project as a member, offering several examples of its consultant network self-organizing to respond to RFPs as learning projects. Using interviews and historical documents volunteer researchers documented two Virtual Network RFP learning projects; however, the time that elapsed and politics around what happened limited the insights and use of these cases.

The Ford IT department investigated and used social network analysis and mapping methods to develop a faster, decentralized approach for providing information systems services during a period of dramatic downsizing and change within the department and company. This learning project was just beginning as the overall HFN project ended its initial phase, but its approach to engaging people to map social networks helped to create and reveal connections that aided people in facing significant personal and corporate changes.

HFN team members were invited to observe the Singapore Civil Defense Force's Northstar VI, a disaster-at-sea simulation requiring evacuation of 1,000 passengers from a Star Cruise ship that involved the participation of 1,600 people, at 13 agencies, 40 Police, Coast Guard, Maritime and Port Authority, and numerous ferry vessels, more than 30 ambulances, and Singapore's Air Force. A team member observed this simulation and reported on HFN behaviors, which were largely absent due to the in a planned nature of the simulation in which agencies were coordinated ahead of time to demonstrate their individual competence and capabilities.

<table>
<thead>
<tr>
<th>Learning Project Name</th>
<th>Sponsor &amp; Organization</th>
<th>Summary Description</th>
</tr>
</thead>
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<td>Peter Walker, Tufts University Feinstein Center</td>
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<td>Bob Weibe, Boeing</td>
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<td>Jeff Clanon, SoL</td>
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<td>Greg Clark &amp; Sheila Covert-Weiss, Ford</td>
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<td>Singapore Disaster Response Simulation</td>
<td>Lee Seok Wai, Singapore Police</td>
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* Five learning projects are described in more depth to illustrate each of the four concepts developed in this article for the effective functioning of Hastily Formed Networks (HFNs). Many other projects were discussed and these are included in this table because they received considerable attention, had characteristics of ideal, representative HFN situations, were discussed at several meetings, and had one or more SoL companies and individuals involved in efforts to launch them.
ENDNOTES


2 See Denning, P. J. (2006) “Hastily Formed Networks” Communications of the ACM, April/Vol. 49, No. 4, pages 15–20. (This article was republished in Reflections Vol 7, No. 1.)

3 The Society for Organizational Learning (SoL, www.solonline.org) is a non-profit membership-owned organization that was founded in 1997 as an outgrowth of an MIT Sloan School of Management research Center for Organizational Learning. SoL’s emphasis, the design of its events and meetings, and its members’ rationale for their participation, is to further the knowledge and practice about learning organizations.

Representatives from member organizations meet regularly and coordinate activities for their organization, including training and attendance at SoL courses, and development of projects and other initiatives that develop and test organizational learning concepts.

4 Personal experiences that people shared included getting help to a person having a heart attack, behavioral changes in a company during an investment banking crisis, coming upon a traffic accident, and mobilizing people around sustainability principles in a large corporation.

5 The significant disasters often discussed were US terrorists attacks on 9/11/2001, Boxing Day 2006 Asian Tsunami, Hurricanes Katrina (August 28, 2004) and Rita (September 24, 2004), and the Kashmir Earthquake (October 8, 2005). Discussions with people at the World Bank included their relief efforts, and use of a web site to coordinate relief agencies, in the Kashmir Earthquake. Boeing people used examples from their Aircraft on the Ground (AOG) teams. The industrial disaster and distributed response by Toyota’s suppliers to the February 1, 1997 Asian Seiki Plant Fire was closely reviewed (see Nishiguchi, T. & A. Beaudet (1998): “Case Study: The Toyota Group and the Aisin Fire,” Sloan Management Review, vol. 40, no. 1, pp. 49-59. Another case study involved Textron Systems Marine and Land Division Slidell, Louisiana plant’s Armored Security Vehicle factory recovery after Hurricane Katrina using Six Sigma Project methods (see “Turning the Tide,” Business Week, Sept. 26, 2005; and “Making The Elephant Dance: How Lewis Campbell took the sprawl out of Textron.” Business Week, May 1, 2006).


7 The name “Menlo Lab” was inspired by Thomas Edison’s famous Menlo Park laboratory, which supposedly produced “the most concentrated outpouring of invention in history.” Menlo Lab sought to generate the social innovations needed to address complex challenges of “persisting crises” in education, health, crime, and poverty in local communities. Out of these shared intentions, Menlo Lab quickly grew to a highly diverse, self-organizing network of global and local leaders, among them SoL organizational members from Cigna Healthcare, DTE Energy, Ford, and Nissan, as well as SoL consulting and research members.


9 WeiBe created a following diagram to show phases of network behaviors in responding to crises. which can be found in the Strong Angel III final report at http://faculty.nps.edu/dl/HFN/documents/Strong_Angel_III_ExecCom_Report_SecDef_Nov_06.pdf

10 The Humanitarian Studies Institute is a joint program between The Harvard School of Public Health, The Friedman School of Nutrition Science and Policy, The Fletcher School at Tufts University, and The Massachusetts Institute of Technology. This three-university initiative holds a weekly seminar series throughout the school year and an annual three-day humanitarian relief simulation capstone event. The students range in age from mid-twenties to mid-fifties, and include many foreign nationals, some of whom have had humanitarian relief field experience. The students do not know each other very well, which makes for a realistic scenario in terms of an international disaster relief operation.
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