

NETWORK NOTES V

Managing for Innovation

Innovation transforms a spark – a new idea, method, or device – into a sustainable fire that forges something new and valuable in the world. This issue of *Network Notes* looks at how networks that connect health system managers, policy makers, and researchers can foster innovation in our healthcare system.

Advancements in medical treatments, distribution dilemmas, and skyrocketing demands are a few of the forces that beg for *innovation* in the design, delivery, and informed consumption of healthcare services in Canada and elsewhere. Because innovation makes it possible for an organization to adapt to changing markets and technologies, health system managers are investing in systems and approaches they hope will enhance their employees' innovative potential and the receptiveness of their organizations to ideas that can lead to innovation. One of the most successful of these is the network.

The link between networks and innovation

Networks cultivate interactions, create relationships, and speed the flow of ideas; in so doing, they spark the emergence of the new. This is because “innovation” is woven together with two other threads: “interaction” and “insight.” Human interactions can either suddenly or over time trigger an insight into how or why something works and how this idea, method, or device could work in a different environment. As Duncan Watts, the author of *Six Degrees: The Science of a Connected Age* writes, “Rapid access to everybody else’s work... dramatically speeds up the cycle of ideas and innovation.”

Examples from history

While our abbreviated stories of invention tend to link innovation with an exceptional individual, a closer look at history usually reveals team effort. Andrew Hargadon, in *How Breakthroughs Happen: The Surprising Truth About How Companies Innovate*, argues innovation seldom arises from the mind of a brilliant thinker given time to ruminate, but usually from recombinant networks of people, ideas, and objects.

Although often credited as the inventor of the light bulb, Thomas Edison relied heavily on his network of colleagues in the electric, telegraph, and gas industries. While Edison was a gifted inventor, he also had a talent for bringing the right minds together in his busy laboratory and insisting they build on what had already been discovered. The interactions at Menlo Park, combined with the insights he gained from other industries, helped him modify an existing idea for a new environment and make the light bulb a widespread commercial success.

A less well-known example of the power of networks to cultivate innovation is Germany’s rise to supremacy in the lucrative chemical dye industry at the turn of the 19th century. Britain had dominated the world dye market for centuries, until the discovery of chemical dyes changed the playing field. Historian Johann Peter Murmann argues that Germany’s superior academic-industrial knowledge network encouraged collaboration between the academics who were learning how to stabilize chemical dyes and the industrial engines that could market them. The strength of this network gave the



German dye manufacturers privileged access to university discoveries, faster notice of technological threats and opportunities, and more influence over government policy.

In both these examples, networks were the heart of the innovation process. At their best, networks sense opportunity or challenge in one pocket and rapidly link this with expertise in another pocket. In this way, effective networks can respond to the unique characteristics of an opportunity.

The people-energy-innovation link

The fuel for organizational innovation is human energy. It is people who generate great ideas and put traction on their implementation. Most of us get much more information from colleagues than we do from databases. The Delphi Consulting Group estimates up to 42 percent of the knowledge most professionals need to do their jobs comes from other people's brains, and only 12 percent of a typical company's knowledge is explicitly published. Research also reveals we tend to seek information from people we find energizing, and it is this tendency that leads to the formation of informal networks.

The innovative power of energizing relationships was revealed by a University of Virginia-sponsored analysis (organizational network analysis) of 15 organizations. Energizing relationships were the only consistent predictor of who sought information from whom. The researchers found that when people work with an energizer, they spend more time reflecting on a problem or opportunity—they try one more time to find that missing piece of information or that valued contact.

Energizing interactions, which are more related to employees' productivity than to their place in the hierarchy, spark innovation because they increase the diversity of people's interactions, overcome the "disconnects" between people with different backgrounds and expertise, and encourage people to look again.

Managing networks to enhance innovation

The following suggestions can nurture network activity and create an innovation-friendly environment in your organization.

Conduct an organizational network analysis

Organizational network analysis maps reveal individuals who are energizing or de-energizing for others and the pattern and number of their information exchanges. By layering this map with a map of people's technical competencies, leaders can see the knowledge domains and people a network is gravitating towards and the competencies that are not being incorporated in a particular project or investigation. They can see the impact an energizer has on a department and avoid harmful reorganization.

Nurture an environment that supports collaboration and creativity

Micro-management deadens creativity. Flat structure, latitude in their work, and the ability to influence the course of a solution gives employees a sense of control, which liberates their creative thinking. Managers of creative environments are honest (sometimes brutally so), do what they say they are going to do, and use playfulness and humour to bypass difficult situations.

Encourage innovation at key network nodes

Identify influential players and do deliberate things to support their interactions and recharge their batteries. Use coaching and feedback to encourage innovation at critical network nodes: central players, boundary spanners who connect disparate groups, official innovators, people on the periphery who may have something unusual to offer, and top managers whose authority magnifies their influence.

Match your management style to the project's stage in the innovation process

The innovation process has four stages, each of which requires a different type of management support:

STAGE 1 – Ideation: Protect the possibilities.

Continuously trawl for opportunities, big and small, to improve the way things work. Innovations often emerge on the fringes of people's jobs. They are fragile and need to be nourished in an atmosphere of openness. Reward employees who make connections between what they saw before and the problems they and others are facing now. Tap the extended network for ideas and resources. Use internal and external brokers to help identify opportunities, frame solutions, and test initial viability.

STAGE 2 – Selection: Be positive. Emphasize transparency and fairness; choose ideas on their merit and communicate your rationale. Gather data to convince people they are not wasting their time. Involve people who are close to the problem the innovation could solve. Take an iterative approach to selecting ideas; this will help you avoid killing projects too early. Double the bet on innovations that look promising.

STAGE 3 – Development: Don't ask, "Can this work?" ask, "How can this work?" Describe the end state and let team members figure out how to reach it. At this stage, teams build momentum, organizations become invested, and initiatives become difficult to stop. Keep leadership stable, pay attention (but not too much), keep deadlines realistic, and listen to the hard questions asked by de-energizers who can temper unrealistic enthusiasm and broaden the research base.

STAGE 4 – Implementation: This can be the rockiest stage, so stay the course. Keep the innovators involved for a while and make shifts in roles crisp and clear. Remind team members frequently of the original purpose of the innovation, respect the work of everyone involved, and ring a bell for every resulting improvement in outcomes.

Barriers to innovation

The major barriers to innovation result more from failures of collaboration than from failures of individual genius. An organization's failure to innovate effectively is usually caused by either:

- its inability to **recognize, re-combine, and leverage** expertise, either in-house or through the extended network; or
- its inability to **react** effectively when people do recognize new opportunities.

Informal networks can suffer from the same characteristics that weaken the ability of formal organizations to uncover and meld expertise:

Fragmentation: Collaboration, and therefore innovation, often break down across physical distance, functional lines, technical capabilities, and occupational sub-cultures. Fragmentation often results when senior personnel are too central in a network.

Domination: The voices of a few central network members can drown out new ideas and drive innovation in a particular direction, despite signs the environment is shifting. Domination often results when research and development leaders try to remain the technical experts in a project.

Insularity: Dominant players can fail to seek out or ignore the external expertise that keeps them in touch with external threats and opportunities. Insularity emerges if decision-making authority is poorly distributed or if one partner organization dominates the network.

Leading for innovation

Specific leadership behaviours can have a striking effect on patterns of collaboration. Leaders can intervene in a variety of ways to encourage a network to seek out and combine expertise; they can build bridges across gaps, revise reward systems to favour group rather than individual achievement, clarify or streamline muddy or burdensome decision-making processes, and encourage key players to take risks.

Managers and knowledge brokers can also intervene to improve a network's ability to react effectively to good ideas. They can create spaces where people who are drawn to a particular network hub can physically work together or encourage the network to address implementation obstacles. These small changes in the conditions of a network can have large effects on its creative and innovative outputs. As Hargadon counsels, the challenge for managers is to simultaneously encourage doubt and dedication: doubt in the small worlds of today and dedication to building new ones.

Tips for effective, innovation-fostering feedback (Cross et al.):

- ① **Bite your tongue.** Don't criticize ideas immediately; give them time to develop.
- ② **Disagree with things, not people.**
- ③ **Offer genuine compliments freely.** Pay attention to people and look for behaviours to compliment.
- ④ **Be part of the solution.** Never identify a problem if you can't also identify a solution. Be particularly careful about this in public.
- ⑤ **Start with "the answer is yes; what's the question?"** Assume the idea can be successful, then explore how to make it so.
- ⑥ **Shake hands.** People feel more connected with you after this formal personal touch.

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