

# Learning through participation and connecting intelligence: experimenting with a wiki to co-create an article

## Abstract

Our 'connected intelligence' story begins at Xerox PARC in 1973, with Dr. Robert Metcalfe inventing Ethernet, a computer networking protocol destined to transform work. Today our 'always-on' global connectivity, of people and computers, enables organisations continuously to learn and adapt. Speaking more than three decades later at Massachusetts Institute of Technology's (MIT) Center for Collective Intelligence, Metcalfe preferred to use 'connected intelligence' and unknowingly inspired this article.

What is 'connected intelligence'? What is the impact on learning in organisations? What value does it contribute? And what must organisations do to maximise the potential? These are the questions investigated while conducting a 'connecting intelligence' experiment. The authors used a wiki to gather resources and ideas and invite contributions. The resulting lessons learned are shared. The article writing history is available in the [ConnectedIntelligence wiki](#)

## The exponential power of connectedness

Robert Metcalfe is recognised and revered as the inventor of Ethernet, '...the local area networking (LAN) technology that turns PCs into communication tools by linking them together (Mitchell 2001:3). A technology that '...would be used to link together more than fifty million Personal Computers (PCs) worldwide' (Mitchell 2001:3) and fundamentally impact the way people work, learn and operate within organisations.

Ethernet's origins date to Xerox PARC, 1973 with a memo Metcalfe sent to his bosses (Mitchell 2001). Metcalfe and his assistant David Boggs worked together to link computers using coaxial cable and implement an algorithm for data transfer across those cables (Metcalfe 2006a; Metcalfe & Boggs 1976). While we do not have details of how Metcalfe and Boggs collaborated, it is not surprising, in light of Andrew Hargadon's research into the collaborative nature of invention (Hargadon 2003), to discover that the most collaborative technology ever created, itself, resulted from collaboration.

Fast-forward three decades to MIT, Cambridge Massachusetts, September 2006. Metcalfe's Law was under attack in a prestigious 385,000-member engineering publication *IEEE SPECTRUM* cover story (Briscoe et al. 2006). Metcalfe spoke in defense of his Law, developed circa 1980, to convince early Ethernet adopters to try LANs (Local Area Networks) large enough to exhibit 'network effect'. The law states that the value of a network is in proportion '...to the square of its number of users,  $V \sim N^2$ ' (Metcalfe 2006a: para.1). Metcalfe further noted that '... Metcalfe's Law points to a critical mass of connectivity after which the benefits of a network grow larger than its costs (Metcalfe 2006a:para.17)(See Figure 1.) Hirshland (2006) summarised:

Metcalfe's original insight was that the value of a communications network grows (exponentially, as it turns out) as the number of users grows (Hirshland 2006:para.3).

**The Systemic Value of Compatibly Communicating Devices Grows as the Square of Their Number:**

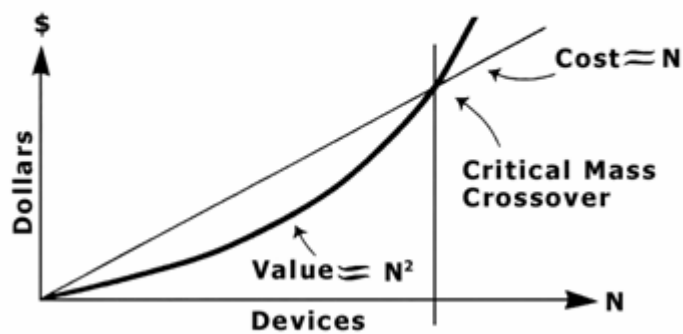


Figure 1: Metcalfe 2006a

The exponential power of networks is why we should pay close attention to Metcalfe's Law, and other network laws (Moore 1965; Reed 1999 and Ethan 2006). It is the force behind the value-creating power of connected intelligence and how it works in organisations to generate learning and increased productivity. For proof of the power of network effects look to the growth of Amazon, eBay and Google and the increased value site users derive as the number of Amazon book reviews, eBay auction items or pages Google indexes grows. The exponential power of networks is the reason we believe organisations need to adopt technology and organisational infrastructures that, together, connect diverse individual intelligence and support, rather than impede, collaboration, interaction and knowledge flow.

As Hirshland (2006, citing Metcalfe 2006a) noted '...to understand the value of a social network we need to consider not just the number of users but also *the affinity between the members of the network*' (2006:para.5).

Moore's Law, from Intel co-founder Gordon E. Moore (1965), is a prediction that through the complexity of silicon chips doubling every year, the cost of computing power will accordingly decrease. Reed's Law (Reed 1999) drew attention to '...that sneaky exponential...(and proposed that)...[n]etworks that support the construction of communicating groups, create value that scales exponentially with network size, i.e. much more rapidly than Metcalfe's square law' (1999:2, our addition in brackets). Reed called such networks 'Group Forming Networks' or 'GFN's'.

## Understanding connected intelligence

MIT acknowledged the importance of connected intelligence in October 2006 in launching their Center for Collective Intelligence (CCI). Led by *Future of Work* author Tom Malone (2004), the Center's goal is to understand how to harness the power of large numbers of people, connected through Internet and other technologies, to better solve a range of business, scientific, and societal problems (Malone 2006). CCI research aims to make collective intelligence a topic of serious academic study, to discover how people and computers can be connected to collectively act more intelligently than any individual, group, or computer has ever acted before (Malone 2006).

New technologies are now making it possible to organize groups in very new ways, in ways that have never been possible before in the history of humanity. And no

one yet understands how to take advantage of these possibilities (Malone 2006:17).

We prefer 'connected intelligence' as used by Metcalfe in his September 2006 speech, to 'collective intelligence'. Why? Because it reflects our experience that just using networked electronic technology to 'collect' intelligence is insufficient to create value in organisations. Productive 'connected intelligence' and adaptive learning also demand organisations that are structured to support, rather than impede, collaboration interaction and knowledge flow.

## **Open communication and collaboration are essential for knowledge creation**

As early as 1938, John Dewey's lecture to Kappa Delta Pi (International Honor Society for Education) stressed the importance of 'serious co-operative work' in education (Dewey 1938:90). *The Fifth Discipline* (1990) author Peter Senge, a pioneer in organisational learning, warned that the hierarchical business model no longer worked in the complex, dynamic and global organisations of the day. Rather, he believed that open communication and collaboration and continuous generative and adaptive learning would be critical to organisational survival (O'Brien 1999).

What is new is the power 'connected intelligence' brings to organisational learning by leveraging the intersection of technology, collective intelligence, and organisational structures to enable successful implementation (O'Brien 1999).

Introducing a new edition of *The Fifth Discipline*, (2006) Senge pinpointed the changes that have taken place in the intervening 15 years. He noted '...organisations are becoming more networked, which is weakening traditional management hierarchies and potentially opening up new capacity for continual learning, innovation and adaptation' (2006:xvi).

## **Connected intelligence works through human networks**

Julian Orr's (1996) observations of Xerox technicians collaboratively solving problems and learning from each other left no doubt that work and learning are social and one. However, in the last decade the growing use of organisational network analysis (ONA) has increased our understanding of just how knowledge flows between individuals and increases organisational learning and how intervening to change the human network connections can foster innovation and increase productivity. Studying people networks in organisations provides a lens to view and facilitate connecting intelligence for enhanced organisational learning. (See Appendix A for Organisational Network Analysis resources.)

Research conducted by members of the University of Virginia's Network Roundtable revealed the range of ways connecting intelligence works in organisations. Rob Cross, co-author of the *Hidden Power of Social Networks* (Cross & Parker 2004) oversaw studies applying network analysis to understand and enhance 'Innovation and Top Line Revenue Growth; Client Connectivity and Sales Force Effectiveness; Large Scale Change and Post Merger Integration; Talent Management/Leadership Development and Strategy Execution/Alignment' (McIntire School of Commerce Foundation 2007:para.3), all of which extend the application of network analysis to business imperatives (Mulliner pending 2006).

In support of Senge's suspicion that hierarchical structures are ineffective for organisational learning, Morrison, Tenkasi & Mohrman (2003) conducted a study examining eight organisations and how social networks impacted their ability to implement change. They found that informal cross-functional networks were effective in creating the

knowledge needed to adapt to change, while hierarchical information sharing networks were not.

In a large global engineering consultancy, undergoing reorganisation, Anklam, Cross and Gulas (2005) revealed that a restructure can proceed in a collaborative, flexible way, when an ONA is used as a baseline prior to changes. Their findings included two key points that:

1. learning occurs in the transfer and creation of knowledge, but only if people are aware of the skills and knowledge other network members have, and
2. a lack of social relationships is a barrier to learning but can be changed and measured by an organisation (Anklam et al. 2005).

Of course even when people are connected, there is no guarantee they will innovate, solve problems, or create new knowledge. Research by Cross & Borgatti (2003) collecting social network data indicated that simply connecting people may not promote learning, but beyond that, people also need to: (a) know and value what members of their network know and (b) have timely access to them.

These findings suggest that organisations undergoing change (every organisation, every day) must enable networks to self-create and self-direct to support the learning necessary to ensure a successful transition. While attention to the importance of connecting multiple intelligences isn't new, what is emerging in the learning space is the rapid advancement of collaboration technologies driving the expectation of greater use of collective intelligence.

However new networked organisational structures or designs have not kept pace. In the example of the engineering firm, as the company grew, redundant organisational reporting structures provided the default design. Using ONA to map knowledge flows enabled staff to understand the structure of the networks they would need to build as they centralised operations.

## Organising to maximise connected intelligence

Three recent books aid our understanding of how connected intelligence works to create value in organisations: *The Wealth of Networks*, *Wikinomics* and *Mobilizing Minds*.

### ***The Wealth of Networks***

From studying the open source movement and Wikipedia, Yale Law Professor Yochai Benkler explained, in *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (2006), how the Internet is taking an existing form of exchange - social sharing - from the periphery to the mainstream of the economy. Conventional economics cannot explain the success of volunteer-generated projects such as Wikipedia or open-source software, which are given away for free. Benkler offered a theory of social production to fill the gap.

It is the feasibility of producing information, knowledge and culture through social, rather than market and proprietary relations, through cooperative peer production and coordinated individual action - that creates the opportunities for greater autonomous action, a more critical culture, a more discursively engaged and better informed republic, and perhaps a more equitable global community (Benkler 2006: 92).

## **Wikinomics**

*Wikinomics: How Mass Collaboration Changes Everything* (2006) resulted from a \$9 million 5 year research effort. Authors Dan Tapscott and Andrew D. Williams concluded:

[i]ndividuals can now actively participate in innovation, wealth creation and social development in ways we once only dreamed of. And when these masses of people collaborate they collectively can advance the arts, culture, science, education, government, and the economy in surprising but ultimately profitable ways (Tapscott & Williams 2006:3).

Furthermore, they argued that in order for organisations to be successful they will require not just adjustments to existing strategy, but new ways of thinking and organising which embrace the art and science of collaboration. They call this way of thinking 'Wikinomics' (Tapscott & Williams 2006). Their approach to accelerating discovery is based on four principles:

1. accessing peers
2. being open and transparent
3. sharing, and
4. acting globally.

Not only was the book the result of the collaborative work of over 100 contributors: the final chapter is a collaboratively written piece openly added to by the public.

## **Mobilizing Minds**

In *Mobilizing Minds* (2007) McKinsey consultants Lowell Bryan and Claudia Joyce build on research of the top 150 companies to show that, today, strategic advantage comes from organisational structure. Organisational form no longer follows function. The authors conclude that in a 'thinking' rather than labour intensive 21st century environment, collaboration is the great new opportunity and organisations need to structure to enable collaboration, mining collective intelligence and adapting to complexity constraints in the digital age. This involves: 1) Backbone Line Structure 2) One Company Governance 3) Dynamic Management 4) Formal Networks 5) Talent Marketplaces 6) Knowledge Marketplaces 7) Financial Performance Management - Motivating economic Behavior 8) Role Specific Performance Evaluation 9) Strategy – as a Portfolio of Initiatives (Bryan & Joyce 2007).

Significantly 'mobilising minds' also demands rethinking metrics used to measure performance. Bryan and Joyce propose 'Profit Per Employee', reflecting business productivity based on connected intelligence or intangible assets, not returns on capital, as the best proxy for measuring profitability. No doubt this presents a problem for top management comfortable with measuring short-term results by returns on financial capital.

## **Connected intelligence in practice**

An increasing number of creative connected intelligence initiatives exemplify the principles of the *Wealth Of Networks*, *Mobilizing Minds*, and *Wikinomics*. [InnoCentive](#) is an e-business venture of Eli Lilly and Company (2007) that matches '...top scientists to relevant R&D challenges facing leading companies from around the globe' (2007:para.1). Scientific innovations are rewarded through financial incentives.

Studying challenge resolution through InnoCentive (Lakhani et al. 2007) helps us understand the dynamics of open innovation and the factors in successful problem solving.

Notably ‘...problem-solving success was found to be associated with the ability to attract specialized solvers with a range of diverse scientific interests. Furthermore, successful solvers solved problems at the boundary or outside of their fields of expertise, indicating a transfer of knowledge from one field to others’ (Lakhani et al. 2007:1).

At the [Open Architecture Network](#), founder Cameron Sinclair is providing a platform to connect intelligence across the globe in an effort to share knowledge and develop solutions for low cost housing.

Google has experimented with prediction markets to assemble connected intelligence to ‘...forecast product launch dates, new office openings, and many other things of strategic importance to Google’ (Cowgill 2005:para. 2). [The Handbook of Collective Intelligence](#) (Massachusetts Institute of Technology 2007) wiki site provides a living and varied list of other examples to watch.

No doubt every reader can provide instances of connected intelligence at work in the grassroots of his/her organisation. ConnectedIntelligence wiki contributor [Jack Vinson](#) provided his first hand experience problem solving in a laboratory (Vinson 2007). Their efforts were ineffective using all the diagnostic tools at hand, but with collaboration between those involved, they found the solution.

Wiki contributor, [Sue Mandley](#), a teacher with Technical and Further Education (TAFE) in Australia, shared how she uses a Sharepoint Portal to connect teachers to their students, share student work and references, and inspire ‘...less techy teachers to use technology in their classrooms/work areas’ (Mandley 2007: para.1)

## Connecting enhances personal performance

Network analysis research is also revealing how personal network structure impacts performance. Studying how top talent in organisations use networks Rob Cross and Robert Thomas (2006) found three important aspects:

The first is structural: High performers have a great tendency to position themselves at key points in a network, and they leverage the network around them better when implementing their plans. The second is relational: High performers tend to invest in relationships that extend their expertise and help them avoid learning biases and career traps. The third is behavioral. High performers value networks and engage in behaviors that lead to high-quality relationships- not just big networks (Cross & Thomas 2006:3)

Raytheon Executive Education goes so far as to teach understanding of social capital and networks. Their program is based on research showing the relationship of personal network structure to improved performance ratings, faster promotions and higher retention rates (Ronchi & Cox 2004). Examining on the job performance post program, Ronald S. Burt & Don Ronchi (2006) importantly demonstrated that ‘...[a]ctive participation matters. The subsequent careers of executives who were quiet spectators in the (social capital) program cannot be distinguished from the careers of people in the control group - peers who never attended the program’ (2006:30).

The literature also includes many studies (Andersson 2001; Cooper-Thomas & Andersson 2002; Droege & Hoobler 2003) that examine the importance of social networks in helping newly hired employees learn how to do their jobs. These studies found that getting new employees up to speed and helping them be more productive sooner and

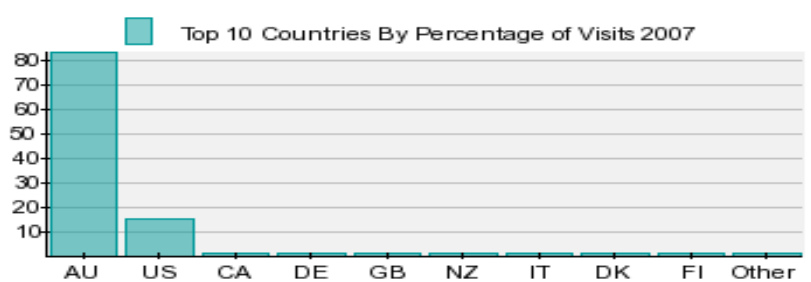
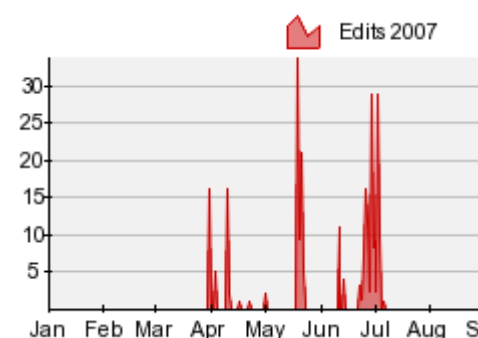
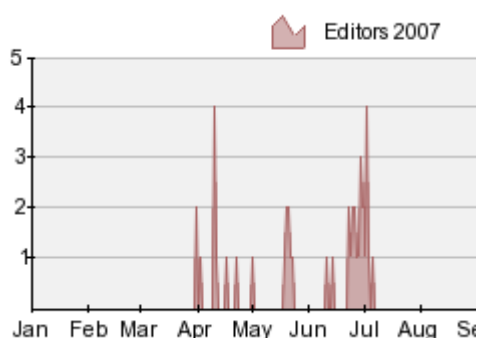
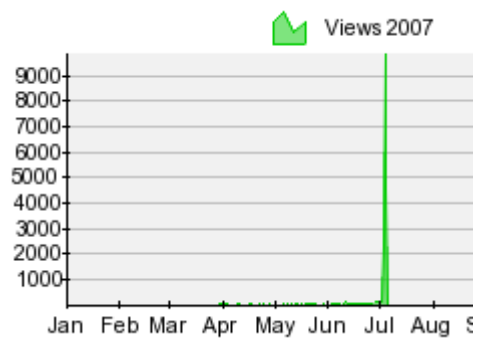
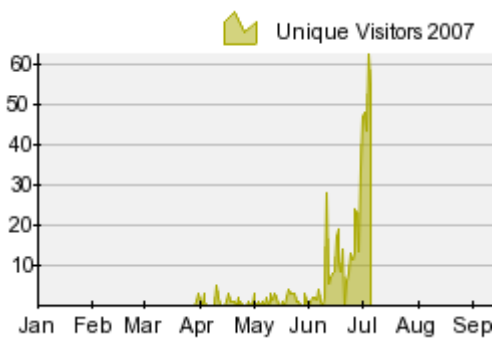
socially comfortable earlier in their careers, can be accomplished by connecting them to both informational and social networks.

## Putting connected intelligence to the test: results of our wiki writing experiment

As this article addresses connected intelligence, it seemed appropriate to test the use of collaborative tools to connect the authors during writing. A wiki was selected.

### Wiki history and activity statistics

The [ConnectedIntelligence wiki](#) was created on 31 March 2007. Wikispaces was used as two of the authors had previous experience posting material to their [Networked Organisations](#) wiki. [ConnectedIntelligence wiki statistics](#) reveal that between 31 March, and time of writing, 7 July 2007, a 14-week period, 33 pages were created. Change statistics are only available for the last month during which 144 changes were made. 16 people became members, 13 in addition to the core authoring team. The majority, 11, arrived in the last 4 weeks as author activity and communications around the topic increased as the article deadline approached. Wiki activity during the article writing period 31 March through to 7 July is revealed in the following graphs.



## Activity statistics tell an incomplete story

What the graphs do not indicate, but what fellow online space facilitators know, is that activity begets activity. As the authors became more active with the approaching deadline, participation spiked.

The graphs also do not reveal what happened behind the scenes to seek outside contributions. While we did not keep records of outreach and communications, there was a flow of interactions between the three authors, as dyads and triads, mostly through email but also in phone calls. In addition, individuals in the co-authors' networks deemed potential contributors, received emails seeking insights and participation. Email responses were received from most, but not all, invitations. Some yielded approved quotes and references, some of which were added to the wiki by a co-author.

## Learning about using a wiki to co-create an article

The writing process revealed the following:

### 1. Wikis are simply tools

A wiki does not write an article. People do. The wiki provided a shared focus point for article creation but multiple collaborative tools were used. Especially as the deadline approached, email and phone activity between the authors and other wiki members increased. Each author also fell back to using Microsoft Word to write and edit as a need for productivity became more urgent. This backs up Chauhan & Bontis' (2004) finding in their research about the adoption of collaborative tools, that people resist using new technology when old familiar technology is available.

### 2. Wikis are great storage place to expose ideas

Thinking the article would emerge through the wiki proved naïve. The process was far more complex. The wiki proved invaluable for aggregating resources and links and brainstorming with the content and ideas, for example, posting questions, bolding what seemed like key points in materials we had gathered. To produce the final piece involved each author writing documents independently with rounds of sharing, marking changes, reviewing and editing. In retrospect we could have used the wiki comment fields for our discussion and ideas rather than using the comments and track changes in our more familiar individual word processing programs. Using the collaborative wiki would have eliminated version control issues.

### 3. Wikis facilitate the emergence of key ideas from people beyond the lead authors

Creating new pages on topics that might be important threads proved valuable for prodding at themes and helping evolve the article structure. The wiki served as a hub for the article and was especially helpful in seeking input from contacts. Email invitations to participate included links to the wiki and potential contributors to explain what we were striving to accomplish. Pages were named for individuals to encourage gathering their insights. One co-author observed just the process of crafting emails aided thinking and idea synthesis.

### 4. Using multiple tools created value

From Ronald Burt (2000) we were aware of opportunities to create value around 'structural holes' in organisational networks. Hence we paid attention when it was suggested that it is '...the space between the tools where things happen' (N. White 2007, pers. comm., 2 July).

Following is an example of how tools interacted to gather information.

29 June 2007, with deadline looming, co-author Jenny Ambrozek posted an article update and invitation to participate to [21st Century Blog](#). 30 June 2007, Jack Vinson, blogged about our article writing experiment in [Knowledge Jolt with Jack](#). 2 July 2007 Jenny Ambrozek in checking [Technorati](#) for activity around our blog post, also noted Jack Vinson's '[Policies can be changed](#)' post and added a comment. A [Facebook](#) and email exchange followed. [The ConnectedIntelligence Jack Vinson wiki page](#) was created to capture Jack's insights about 'policies' impacting knowledge sharing and learning in a real laboratory. It took the wiki+blogs+Technorati+Facebook+email to gather the laboratory example.

## 5. Co-creating takes time

It was 14 weeks from wiki creation to article deadline but the bulk of activity happened in the last month. The authors had competing commitments and it was only as the deadline approached and focused their attention that real structural activity began. What we did not realise was that although a collaborative product benefits from connected intelligence, the production cycle must allow for more review and reflection by the various participants.

Unknown is how many more people we could have reached, and how much richer or different, this article would be if we had started outreach earlier. The wiki remains open so readers can contribute their reactions and tell us what we've missed. Please visit the [Reader Reactions page](#) soon.

## 6. Energy is required

In *The Hidden Power of Social Networks* (2003) Rob Cross and Andrew Parker devote Chapter 4, to a discussion about 'Creating Energy in Organisations'. While we did not officially track our communications and 'energy' commitment, our experience, (supported by email, phone, blog and wiki posting records) is that inputting positive energy is critical to creating engaging participation and creating value through connected intelligence.

## 7. Structure *IS* necessary

The authors approached this co-creating experiment as an organic and flexible process. It is now clear more structure and process would have ensured less stressful, on deadline, completion. In a sense we let the format run the process. In hindsight it is clear we needed both a process *and* the structure of all of our previous writing, including timelines with cut offs for brainstorming, drafting, reflecting, editing and formatting. Tish Grier's report of [lessons learned from the Assignment Zero](#) collaborative writing project (contributed to the ConnectedIntelligence wiki) confirms the importance of structure in collaborative writing endeavours. It is recommended reading.

## 8. Connecting intelligence extends reach

Three authors set out to write this article but using this wiki allowed us to significantly extend our reach, diversify insights, points of view and years of experience. At project end 22 people had joined the ConnectedIntelligence wiki. Our Acknowledgements page listed 26 people from 5 countries who helped evolve our thinking including two new names who found us.

## 9. Value lies in ad hoc organisations

Patti Anklam (2007) talks about how '...the networked world let's us create ad hoc organisations'... (what she calls) '...networks in the world - to create articles, do business together, learn by stretching ourselves into different media' (2007, P. Anklam, pers. comm., 23 July, our additions in brackets). As a shared space the wiki served as the hub of an ad hoc organisation supporting this article writing effort.

## Conclusion

What have we learned about learning through participation and connected intelligence?  
What do organisations need to do?

The value of connected intelligence in an organisation is exponential, increasing beyond the square of the number of people in its network. Taking full advantage of the potential depends on the interaction of collaboration tools, individual participation and an organisation structure that supports rather than impedes knowledge flow and interaction, through social networks. While top management can strategically support connecting intelligence in an organisation, our wiki writing experiment confirmed the power of connecting intelligence through ad hoc networks, which emerge to support short term initiatives.

In the three decades plus since Bob Metcalfe invented Ethernet, proliferating computer connections have strained industrial era, hierarchical organisational structures. A growing body of research is providing new models and understanding about operating organisations to create wealth through the exponential power of network laws, wikinomics and mobilising minds. It is the number, strength and diversity of ties or connections which individuals use, that promotes organisational learning and creates market capitalisation.

The opportunity in connecting intelligence by tapping the energy, expertise and passion of people who care is exponential. Enabling the process of emergent knowledge creation and shared learning, requires thinking differently about the value of hallway conversations. Value creation involves adapting your organisation to NOT get in the way AND support knowledge flow and sharing on topics of promise.

Connecting intelligence encourages organisations to reward sharing and active participation, creating an environment in which access to peers, openness and transparency, and collaboration are valued. Undoubtedly this will require different mindsets and skill transitions for traditional hierarchical organisations. Production is no longer linear. Solving problems demands 'and both' thinking: an environment where answers are co-created rather than found. Opportunities reside in the space between structural holes in a network. Network analysis research is also giving us insight into the distrust of the openness of connected intelligence, particularly in regulated industries (Anklam 2007).

Regardless, in an uncertain world, there is one certainty. With Moore, Metcalfe and Reed's Laws at work, it is no longer an option to ignore the exponential power of connected intelligence for learning and networked organisation designs to support knowledge flow.

How do you see it? Please join us in the [ConnectedIntelligence wiki](#) to add your perspective.

## Acknowledgements

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## Useful links

Open Architecture Network (<http://openarchitecturenetwork.org>)

Networked Organizations (<http://networkedorganizations.wikispaces.com/>)

ConnectedIntelligence wiki (<http://connectedintelligence.wikispaces.com/>)  
[Readers' Reaction Page](#)

[The Network Roundtable at the University of Virginia](http://www.networkroundtable.org). (<http://www.networkroundtable.org>)  
Web site includes a list of member organisations and limited access to research studies.

[The Wealth of Networks wiki](#)

This Wiki is an invitation to collaborate on building a learning and research environment based on Yochai Benkler's book.

([http://www.benkler.org/wealth\\_of\\_networks/index.php/Main\\_Page](http://www.benkler.org/wealth_of_networks/index.php/Main_Page))

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## Getting Started with Organisational Network Analysis (ONA)

'ONA' is an evolving discipline that builds on sociologist [Moreno's 1930's](#) 'sociograms' (Borgatti 2006). It has emerged as an important tool for 'understanding how work really gets done in organizations', the subtitle of University of Virginia Professor Rob Cross and Andrew Parker's *The Hidden Power of Social Networks* (2004).

David Krackhardt and Jeffrey Hanson's 1993 *Harvard Business Review* article '[Informal Networks: The Company Behind the Chart](#)' fuelled awareness. Analytical technologies like Trampoline Systems, that revealed the [social networks within Enron](#) through examining 200,000 emails, are emerging, but the standard ONA approach involves:

1. defining a business problem, most often about less than effective communication
2. considering the network of people involved
3. conducting a survey to get inside how information is, and is not, shared, and where valuable knowledge lies
4. using computer software programs such as [Inflow](#) or [UCINET](#), and [NetDraw](#) to analyse the findings
5. communicating results, usually as network maps and metrics
6. conducting follow up interviews to investigate and validate particularly important study findings
7. developing intervention plans to influence network operation and organisational effectiveness based on analysis findings.

The sample network map (Figure 1), showing 'Energy', depicts an expertise network in a global manufacturing company.

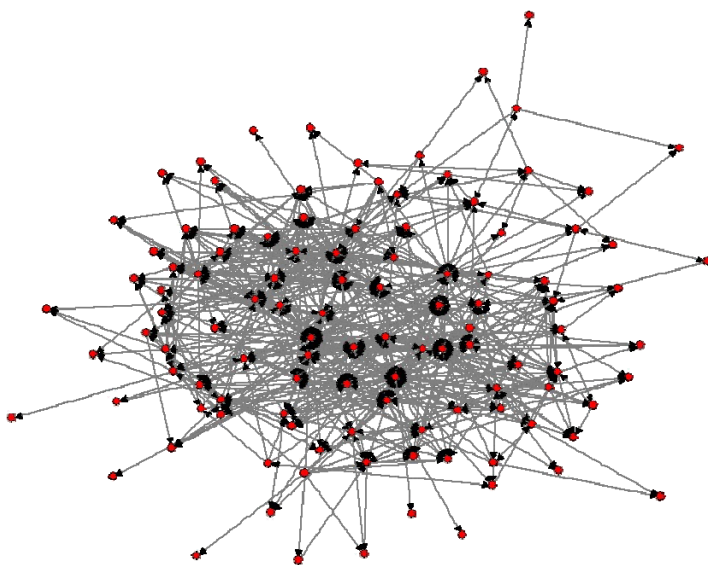


Figure 1: Energy

## A Personal Network Drawing Exercise

The following exercise will expand your understanding of how your networks work and how they may become more effective.

**Goal:** Examine and learn from one of your personal networks

**Task:**

1. **Think** about either your regular job or a project you are currently working on and the people with whom you are involved.

2. **Draw** the network of people with whom you interact by addressing the following questions:

- Who do you go to for information to get your work done?
- Who comes to you with questions to get their work done?
- Who stands in the way of your getting work done?
- Would you be more efficient if you had more access to some people?
- Who do you go to for personal and professional support?

**Connect** yourself to people in your network, using arrows to show which way the communication flows: towards or away from you. Remember it can go both ways.

**Adjust** the thickness of the lines to reflect the volume of information flow.

**Annotate** your drawing using this key to show the nature of the communication flow:

**YW** - Your work

**TW** - Their work

**RB** - Roadblocks

**WIHA** - Wish I Had Access

**S** - Support

### 3. Analyse Your Network

Consider actions you can take to make your network more efficient. Add notes to your drawing.

## Acknowledgements

This exercise has been adapted from an exercise developed by Joe Cloonan, Knowledge Management Research Coordinator, Airbus for Supply Chain Analysis and used by Jenny Ambrozek & Victoria Axelrod.

## Resources for better understanding the potential of using Organisational Network Analysis (ONA).

<http://www.orgnet.com>

Valdis Krebs produces analysis software called Inflow. He is an [ONA pioneer with 25 years](#) experience applying network analysis in organisations.

<http://www.analytictech.com>

Steve Borgatti distributes widely used network analysis tools UCINET and Netdraw.

<http://www.networkroundtable.org>

Site of the University of Virginia Network Roundtable, source of research reports showing various applications of network analysis for enhancing knowledge sharing and organisational effectiveness.

[http://www.robcross.org/book\\_jacket.htm](http://www.robcross.org/book_jacket.htm)

*The Hidden Power of Social Networks*, by Rob Cross & Andrew Parker 2004 is an organisational network analysis primer. Appendix A (p. 143) describes 'Conducting and Interpreting a Personal Network Analysis'. Appendix B (p. 167) has 'Tools for Promoting Network Connectivity' including a 'Personal Network Diagnostic'.

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