

## Networking human relationships a SNAp

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**Valdis Krebs, founder of orgnet.com and leading practitioner in the SNA field, shows how mapping organisations knowledge sharing relationships is mathematic.**

**By Kim Sbarcea**

It's become something of a cliché to say that the rapid rise of computer technology in the later half of the 20th century resulted in today's fast paced world. Nevertheless, we do live in a world where rapid change is now the norm and predictability and stability perhaps belong to a bygone era.

To help us survive in an age of chaos, there is any number of books dishing out advice on how to outmanoeuvre the competition jostling for the Golden Fleece: the competitive edge in business.

There are also numerous books on "knowledge management", or KM, which discuss ways organisations can support processes for creating, sustaining, sharing and refreshing organisational knowledge with the aim of improving performance or generating increased profits.

There is increasing recognition, however, that knowledge management and organisational survival and competitiveness are topics that dance at the edge of a much broader notion: the new science of networks.

The terms "complexity thinking" and "complexity theory" have started to appear in conjunction with "knowledge management" and "organisational competitiveness" which indicates that the basic pattern of all life is the network. A network is a non-linear, non-hierarchical set of relationships, for example, human social networks or colonies of ants.

### KNOWLEDGE FLOWS

Although managerial thinking in the 20th Century thought of an organisation as a fixed, hierarchical structure with centralised power, complexity theory is helping to recast the organisation as an ecosystem or business web. This way of thinking allows us to see that an organisation is a living network of people who cluster together in order to do their job, learn from each other, and allow knowledge to flow along the network pathways. Power is more diffused and there is a growing recognition that each employee (or agent), although acting independently, is also part of a holistic, complex adaptive system (CAS).

A CAS emerges from the interaction of diverse individuals or agents and the relationships between these agents within the system itself. There is no leader, no controlling mechanism. The system responds to external stimuli and adapts its behaviour and learns. Examples of complex adaptive systems are flocks of birds, insect colonies, the global marketplace, the Internet and business ecosystems. Out of the simple interactions of agents, a complex adaptive system generates emergent, creative behaviour.

This is why communities of practice (CoPs) have recently become so important to the knowledge management field and can be viewed as a CAS. CoPs are networks of individuals who have strong and weak links to other people in an organisation and within their own network. CoPs share a concern or a set of problems and CoP members work towards improving their knowledge or sharing their learning. Creative, emergent behaviour and activity emerges from a CoP not at an individual level, but at the higher, collective level. CoPs can be informal and relatively invisible to

an organisation, but increasingly companies are wishing to work with CoPs so that links between organisational members can be revealed.

Social network analysis (SNA) can be used to not only surface or map patterns of interaction within an organisation; it can also help to measure relationships and flows between people, communities and computers. This is especially important in an unpredictable world in which relationships can shift from day to day. SNA is a valuable tool for uncloaking CoPs; discovering key experts; identifying organisational knowledge flows and exchanges; and finding out who people really talk to when they want to find out information.

Although SNA has been known to sociologists and researchers since the 1930s, the business world is starting to see its value for locating and analysing networks and telling their story.

Valdis Krebs, a Latvian-American who founded orgnet.com, is a leading thinker and practitioner in the SNA field and his work shows how SNA can help us visualise organisations as complex adaptive systems with networks and shifting relationships of varying strength and importance. Describing SNA as a “visual and mathematical analysis of human relationships”, Valdis has been mapping organisations since his first social network analysis in 1988. Before the rise of “knowledge management” in the early 1990s, Mr Krebs was consulting to a defence company which had just announced an early retirement programme. SNA helped the company to map the knowledge sharing networks for most of the engineers eligible for the programme. SNA showed that groups of young engineers were not getting the maximum benefit of senior engineers’ knowledge and experience and several pre- and post-retirement programmes were set up to fill the gaps. SNA helped management to make better decisions on how to organise and put their resources to work for optimum efficiency.

## **LIVING SYSTEMS**

It might be tempting to think of SNA experts simply as “computer geeks” or mathematical wizards locked up in research labs, but Valdis’ background, although strong in maths and computer science, also reflects his considerable expertise in working for Fortune 500 companies in the areas of human resources and organisational behaviour. He started his consultancy business in 1995 after IBM Global Services licensed his InFlow software and after Valdis saw “so many projects fail to reach success because of human issues”. His InFlow software is based on how organisations can be modelled like living systems and has been used to create SNA maps in projects as diverse as post-merger integration, mapping terrorist networks, assessing network vulnerability, and mapping contagious disease outbreaks.

Valdis believes that SNA is a major asset for communities of practice work. As he says: “these networks and communities can be measured for size, efficiency, diversity and reach. Repeated network snapshots allow management to monitor the growth and interconnections of various communities and networks. How are things changing? Who and what are important now?” Since knowledge management has consistently struggled with tangible measurement of KM efforts, SNA could be a very visual, robust method of demonstrating value and success to senior management.

The diagram below is an example of a SNA map. In this case, Valdis mapped the relationships in an IT department. Each node on the map represents an employee numbers are assigned to each node rather than employee names being revealed. A grey line links the seeker of knowledge to the source of expertise. Lines with arrows pointing to them show people who are sought out often for advice and information. The organisation may not in fact view these employees as key opinion leaders or experts, but SNA will help to discover the quiet, hidden employee who is a wealth of knowledge.

Subject matter experts (i.e. those with the most incoming links) in the diagram are represented by nodes 017, 018 and 051.

An interesting observation that Mr Krebs makes is: “I have recently said that the new mission in HR is to Hire and Wire, don’t just hire the best people, but make sure they get connected properly inside the organisation”. Many organisations still persist in hiring the “best and brightest” when the really smart competitive thing to do may be quite easy; just make sure your people are linked to those they need to be and make sure all your clusters or multiple networks are linked together or know about each other.

## **SIX DEGREES**

A curious aspect of network theory is the oft-quoted six degrees of separation, that the distance between any two people is six links. But it is a truism that we often cannot see beyond a network horizon of two; we cannot see further than the people who know those we know. SNA can help to reduce the “six degrees of separation”, at the same time widening our exposure to links beyond our network horizon.

Deloitte Touche Tohmatsu in Australia has recently been working with Mr Krebs on a project designed to explore the social capital, that is relationships between people that allow knowledge creation and sharing, at a senior level. Cris Townley, director in the People and Knowledge group at Deloitte Touche Tohmatsu, was the researcher who worked with Valdis on a pilot study with new partners. The aim of the project was to assist partners and directors to visualise their internal relationships as sales channels and work with their networks to achieve more sales. Even the routine act of aggregating data during the project helped to raise awareness of the importance and power of social networks.

The pilot study was conducted via telephone conversation and email, with results being fed back through a workshop environment that allowed for rich conversations to take place. The questions asked were carefully designed and kept to a minimum to avoid collecting too much data that may be of limited value.

Two key questions were: “name up to five Deloitte partners you have worked with in the last 12 months to try to win work from a client or target”; and “name up to five Deloitte partners who are generous about sharing their ideas, time and contacts with you (including people you go to when you need a sounding board)”. The second question purposely avoided the word “trust”. Knowledge management literature speaks of the need for communities and knowledge sharing to be based on trust. But trust is a difficult concept because there are varying degrees of trust based on personal values, so the word “generous” is perhaps a less loaded word. Cris and Valdis discovered that the response rate for the pilot study was over 90 per cent, clearly showing that participants were interested to explore their social networks and find out if they were top of mind when it came to asking for advice. The results of the study were shown in SNA maps and discussed informally over lunch. Exploratory questions were asked to help participants easily visualise the results and trigger their thinking about social networks. Examples of trigger questions were: How many service lines do you reach into? Do you have a balance between a group you are close to and collaborate with, and information flowing in from other areas? Are you acting as a bridge between people or groups? Which groups of people work together to win work?

## **IT'S A WIN WIN**

In a “win work” network, two way relationships (ones where both parties named each other as a valuable source of information) were shown in the generated report as links in red; and one way relationships in black. The service lines of each node were shown through colour coding, for example red nodes were in the tax practice.

The value of SNA is that snapshots of networks can be taken at regular intervals so that shifting relationships can be seen. Employees who may have previously been lurking at the periphery of a network may become strong links over time or key opinion leaders can be located and encouraged to help foster the building and strengthening of a given network.

The various stages of SNA; asking the questions; receiving responses; reading the report generated; and reflecting on and discussing the SNA map; enable rich conversations to take place between the SNA consultant and the participants. Any further conversations that take place between participants may not always be visible to the SNA consultant and no doubt some participants will not be able to focus rigorously on the results due to time constraints. Nevertheless, as Ms Townley said, “The most important outcome of the project was that it began these conversations with senior people in the firm in our Australian offices. It is up to other initiatives, processes, groups and individuals to build on this beginning”.

Valdis Krebs is founder of orgnet.com. There are many white papers on SNA that can be found at [www.orgnet.com](http://www.orgnet.com) and he may be contacted by email: [valdis@orgnet.com](mailto:valdis@orgnet.com)

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