

# Understanding your organisation

**Kate Parker** and **Lakshan Saldin** talk about social network analysis and its potential role in understanding organisations in the corporate environment

Since the Cambridge Analytica and Facebook story broke back in March, individuals and organisations have been re-evaluating their relationships with online social networks. What has become apparent is both the degree to which our digital footprints are interconnected, and the high value placed on the information that this interconnectivity can yield. Knowledge and insights gleaned from understanding the online relationships between people and information flows can be used to influence behaviours to support given objectives.

For most people the term 'social network' is firmly anchored in the digital age of smart phones and social media. However, the concept of a social network significantly predates the world-wide-web and has its roots in the emerging discipline of sociology at the end of the 19th Century. The social network in this broader context describes a social structure defined by the interactions between individuals or organisations.

In the last twenty years these interactions have been transformed by new communication technologies so that social networks now span the physical and online worlds. The huge increase in opportunities for peer-to-peer communication, including within and between companies and industries, means that informal social networks are now often more influential than imposed formal hierarchies. Connectivity is critical to success.

All organisations, whether SMEs or multi-nationals, are made up of multiple social networks that cut across disciplines, hierarchies and company boundaries. These informal networks provide the communication and knowledge transfer pathways (both digital and real-world) which define the way the organisation will function, operate and collaborate.

Relationship networks may include:

- advice networks – prominent players in an organization on whom others depend on to solve problems and provide technical information
- trust networks – identifies employees who share delicate information with each other and back one another in a crisis

- communication networks – employees who talk about work-related matters on a regular basis.

Formal organisation charts set out how an organisation is expected to operate. However, individuals not visible in the formal 'org chart' structure may be highly valued by colleagues for their ability to provide knowledge and information, serve as critical conduits in information transfer or be important sources of institutional memory. Social networks diagrams can show this information visually.

Figure 1 is an example of a simple network diagram showing technical communication links within a single engineering discipline, in this case larger nodes represent more senior individuals.



Figure 1

Social networks are especially important in knowledge intensive industries, such as those associated with engineering and technology.

Research has shown that engineers are five times more likely to turn to friends or colleagues for information than to impersonal sources such as formal hierarchical structures and systems. Research also shows that the companies that make full use of extensive informal social networks benefit from increased innovation and better access to knowledge and collaborators.

Social networks that cross organisational boundaries can promote entrepreneurship and collective learning, resulting in greater chances of initial business success and an increased ability to weather uncertainty and change. The benefits of peer-to-peer social networks in terms of innovation, even across commercial boundaries, can be preferable to expending energy on attempting to maintain secrecy.

## Social network analysis

Social network analysis uncovers the informal links and relationships between individuals in an organisation. It also provides a visual model of the way an organisation is actually operating. It allows organisations to understand their communication and knowledge transfer pathways and establish whether their organisation chart is a true representation of how they are functioning.

Using social network analysis to map an organisation can reveal structural problems that will impact day to day operation and identify individuals that play key roles in the network (who may not appear in formal organisation charts). It can also provide insights into political and priority conflicts, non-routine problems and gaps in information flow.

Applications of social network analysis include:

- general management: identification of candidates for promotion and managing flight risk, merging teams/organisations with different cultures or based across different geographical locations, and assessing organisational vulnerabilities
- knowledge management: improving communication and collaboration between specialists and specialist departments and understanding inter-organisation peer-to-peer networks to make better use of them
- innovation management: discovering conduits for promoting innovation and the uptake of management change initiatives and providing managers with a baseline measurement against which the impact of implementing organisational changes can be measured

Social network analysis provides managers with high value information that can provide insights on current situations and advance warning of future issues. Rather than providing absolute answers, it often raises further questions to explore, specific to the project or organisational context.

The resulting knowledge can be used strategically to influence behaviours, for example using nudge techniques, towards achieving given objectives. We expanded on this in our presentation 'Using 'Nudge'

Techniques to Influence Behaviour in an Engineering Office' at the SPE Intelligent Energy Conference in September 2016.

### Case study – how is it done?

Asking individuals 'Who do you turn to for information to do your work?' is often the most important first question to ask in developing an understanding a company's informal networks. Software-based quantitative analysis can be used to model and analyse larger networks.

In the example provided in Figure 2 the communication and advice network in a project organisation was analysed. The organisation consisted of five company groups: the project owner, a consultancy responsible for the provision of the owners engineering and project services, and three specialist contractors. The organisation was a mix of full and part time resources and was geographically dispersed in clusters across a number of locations.

The social network diagram clearly shows the transfer of knowledge, and the sources of that knowledge. In this case the questions to explore further might include:

- does the clustering of the 2 main companies indicate a lack of integration?
- what impact does the geographical location of personnel have on the network? Why?

- do the dominant roles of Project Director or Deputy Director make the organisation vulnerable if one leaves?
- should the Technical Advisor, an important source of information, be more central in the social network? Why are they on the margins?
- should the three external contractors have relationships with more than the Project Director and Project Managers? Are they clear on how their scope integrates with the full project scope? Is their position at the very edge of the social network resulting in lost value opportunities that might arise from the chance to share knowledge and explore ideas with other technical disciplines?

### New information for Managers

Through focussing on the relationships between people rather than their individual attributes social network analysis moves beyond individual perceptions and recognises the importance of communication as well as individual technical competences.

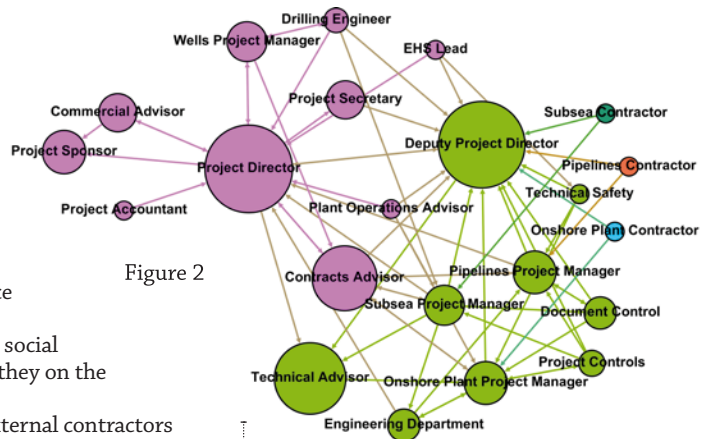


Figure 2

The ability to visualise this interconnectivity enables organisations to understand the informal social networks that are in operation, and to identify opportunities to make more effective use of them.

Social networks cross the digital world and real worlds, and new communication technologies can play a role in supporting communication and collaboration. Building and maintaining well networked teams can improve organisational innovation, collaboration and agility.

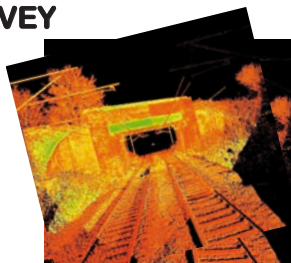
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