Chapter 6
Social Network Analysis as a Tool for Knowledge Management for Innovation

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ABSTRACT
In today’s changing environment, the competitiveness and sustainability of a modern organisation, be they global large scale enterprises (LSEs) or local small to medium scale enterprises (SMEs), depends on its ability to innovate. Innovation can be viewed as the combined activity of generating creative ideas and the subsequent successful exploitation of these concepts for benefit. Access to relevant and up to date information provides a critical competitive edge for organisations innovation efforts. Given that social relationships are key to enhancing the ability to gather knowledge and that creation of knowledge is primarily a social process among individuals, organisations’ need to optimise the supporting mechanisms by which its people and processes accumulate, structure, and transfer knowledge effectively. Mechanisms such as social networks promote both organisational and collective learning and participation in these social networks are a significant source of knowledge, which subsequently leads to innovation. Consequently, this chapter will outline the innovation process with its knowledge management phases and extrapolate the role of social networks in this process. It will then outline the steps of the social network analysis tool and illustrate how it can be used to enhance knowledge management for innovation efforts.

INTRODUCTION
Innovation can be viewed as the effort to create purposeful change that has economic or social potential (Drucker, 1988). This potential can realise itself in a number of ways, for example: new products, better service quality, reduced lead times, cost reduction and increased turnover. Innovation delivers economic growth and competitive advantage. The performance of an economy improves as a consequence of innovations that enhance design and manufacturing capabilities of organizations,
nurture the development of new markets and business models and produce innovative products and services for global markets. Innovation not only increases the revenue streams into the economy but also provides employment and up-skilling opportunities to allow further movement up the value chain. Innovation contributes to economic growth by providing cost competitiveness within the industrial base and providing stimulus for entrepreneurial activity that will result in the creation of new ventures.

Today’s organisations operate in an environment that is fast paced and uncertain, requiring them to continuously change and adapt. It is generally accepted that the driving forces behind such change are global competition, growth in mergers, acquisitions and alliances, organisational restructuring and advances in technology and telecommunication (Dowling & Welch, 2004). In such a changing environment, the competitiveness and sustainability of a modern organisation depends on its ability to meet these challenges through innovation. Organisations that have developed strong innovative capability have been able to grow in scale and market share, some developing from fledgling ‘garage-based’ operations to dominant global players in a matter of decades e.g. Microsoft, Apple and Dell. Innovation can be viewed as occurring within four dimensions of the organisation: product innovation; process innovation; market innovation and business model innovation. These types of organisational innovations transform the products the organisation offers to their customers, the way by which the products and services are produced and delivered, the markets to which they are focused on and even the structure of the business models by which the organisations generate profits and growth from the products and services they provide to the customer. Examples of the impact of organisational innovation types include the transformation of the Apple Corporation (and its share price) following development of the iPod product innovation; the financial success and enhanced global reputation of Toyota due to their process innovations including equipment control and defect elimination; the reversal in fortunes (and market share) of the Lucozade drinks company following the market repositioning of their offering as a ‘sports’ drink and the growth and continued sustainability of Ryanair as a consequence of innovations in their business model. Also, as an example of innovation in an SME, following a strategic review by its management team, Creganna, an Irish based SME supplying to the electronics industry, undertook a significant market innovation. By applying its existing process capability in the areas of metal-forming and coatings, it was able to fulfil pressing needs of the medical devices industry. This innovation allowed the company move up the value chain in terms of market offering, which resulted in the organisation growing in terms of scale and profitability and ultimately establish Creganna as a leading player in the Irish medical device cluster.

Organisations (whether they are a LSE or SME) utilise their internal competencies and capabilities (including the creative capability of employees) to generate and develop suitable and appropriate innovative actions. The more effective an organisation is in controlling and influencing the outcome of this process (e.g. the organisations ability to manage its innovation process) then the greater the chance that it will be successful in developing innovative actions for the global marketplace. A well managed innovation process improves the organisations profitability and ultimately ensures its continued survival through constant renewal and adaptation.

Innovation can be viewed as the combined activity of generating creative ideas and the subsequent successful exploitation of these concepts for benefit (Roberts, 1988; von Stamm, 2003; O’Sullivan and Dooley, 2008). All innovations have creativity at their core; whether this creativity is in the originality of the initial idea or the way
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