

Learning Networks and Service-Oriented Architectures

George Tsekouras

University of Brighton, UK

George Roussos

University of London, UK

INTRODUCTION

The value of knowledge assets in creating competitive advantage and subsequently wealth through innovation has never been greater (Teece, 1998). It is increasingly being acknowledged that the resources and the competencies developed within the organisation as well as the mechanisms for building up and reconfiguring these competencies is the only defence against a fierce competition (Penrose, 1959; Prahalad & Hamel, 1990; Teece, Pisano & Shuen, 1997). However, the nature of knowledge production has changed dramatically over the last years. According to Gibbons et al. (1994), the knowledge production has moved from mode 1 to mode 2. The new mode:

- requires transdisciplinary approaches
- is characterised by heterogeneity of skills
- is context-sensitive involving an intense interaction between producers and users of knowledge

The highly complex and rapidly changing character of contemporary knowledge production makes it almost impossible for single organisations to acquire the full set of required skills. Even large corporations with abundant resources need to turn to other organisations in order to cope with new knowledge requirements. Learning through networking with other firms gives the opportunity not only to share expenses and resources, but more significantly, to listen to new ideas, challenge one's own inherent assumptions, and embrace new perspectives.

The challenge associated with this is to set up an infrastructure to support shared learning and reflection on a regular and sustainable basis. To answer this problem, the mechanism of the so-called learning networks (LN) has been introduced. Learning networks do not refer to networks of organisations where learning simply happens—as is the case with every network—but to interorganisational networks where structures have been established with the primary purpose of increasing the participants' knowledge. These networks:

- involve representatives of different organisations, mainly but not exclusively, private firms
- are formally established with clear and defined boundaries for participation
- have an explicit structure for operation with regular processes that can be mapped to the learning cycle
- have a primary learning target—some specific learning/knowledge which the network is going to enable
- can assess the learning outcomes which feed back to the operation of the network.

The formal character of the network provides an institutionalised organisational platform which represents a permanent structure for identifying knowledge gaps and satisfying knowledge needs, allows evaluation, and accumulates experience regarding the support required by learners. More significantly, the lasting character of membership in learning networks facilitates the development of trust relationships among learners.

Information technology can play a critical role in supporting LNs. Yet, the majority of current KM systems have been designed under the assumption that they will be used within a single organisation or that a single organisation will be responsible for their operation. KM systems appropriate for interorganisational use dictates that several challenges are met. For example, interorganisational information systems must not only provide reliable infrastructures for the organisation itself but also must be capable of sharing resources seamlessly within their network of learning partnerships. These operating conditions demand that such systems are both flexible and operate transparently. Over the past few years, service-oriented architectures have emerged as a framework that addresses this requirement both effectively and efficiently. In this article, we discuss the current use of Web-based service architectures to support LNs and then outline future trends.

BACKGROUND

The new rules of competition (Teece, 1998) have demanded from organisations to build a concrete strategy for learning and continuous change (Argyris & Schon, 1996). Initially, loads of competent tutors and specialised trainers stormed the companies and apparently their resources, delivering high-quality training courses and material. It was only when Orr (1990a, 1990b) observed technicians in Xerox that it was realized that real value learning is intrinsically blended with communities which:

- make their own decisions
- practice the acquired knowledge
- improvise their approaches

In a similar vein, Lave and Wenger (1991) have talked of situated learning—learning that is intrinsically linked to the environment where it is situated—while Cook and Brown (1999) regard organisational learning governed by *epistemology of practice* rather than *epistemology of possession* (i.e., knowledge is fundamentally associated with practice and cannot be transferred as a commodity). These contributions have made Stamps (2000) wonder whether “learning is social [and] training is irrelevant” and Wenger (1998, 2000) suggest that real value learning can only happen in “communities of practice.” Behind all these approaches, there is the notion that knowledge management cannot be separated from the tacit knowledge (Polanyi, 1966), that is, the knowledge we possess but we cannot tell. Nonaka and Takeuchi (1995) observed the process of knowledge creation within an organisation to conclude that knowledge is generated by regular exchanges between tacit and explicit knowledge. Tsoukas (2002) argues that tacit knowledge cannot be translated or converted into explicit knowledge:

We cannot operationalise tacit knowledge but we can find new ways of talking, fresh forms of interacting and novel ways of distinguishing and connecting...New knowledge comes about...when our skilled performance is punctuated in new ways through social interaction.

Meanwhile, a variety of scholars and policymakers have noticed the phenomenal success of *clusters of different companies*. Becattini (1989, 1990) described the Italian experience where networks of small firms and other institutions have helped certain regions to achieve one of the highest rates of economic development and one of the lowest rates of unemployment in Europe. Several case studies point to the same conclu-

sion: Southern Germany, South-West Belgium, Northern Denmark, M4 corridor in UK, Silicon Valley in California (Sengenberger & Pyke, 1990; Saxenian, 1991). Even in less developed economies like Brazil and Pakistan, the collective efficiency developed within clusters has phenomenal results (Bessant & Tsekouras, 2001). It is becoming clear that simple factors such as proximity do not, of themselves, explain the success of clustering. Humphrey and Schmitz identify the importance of developing trust relations, whilst Sengenberger and Pyke (1992) point out the readiness amongst firms for cooperation which help the firms to build shared learning mechanisms.

Building on the understanding developed in the two areas, a new approach has been developed to combine the virtues of both. More specifically, it was realised that significant knowledge benefits can be captured *when communities of practice develop across firms boundaries*, sharing experiences from their organisations. Using the mechanism of learning networks, practitioners groups are set up to reflect collectively and learn from each other, following a number of principles:

- Firms¹, represented by managers, are allocated in small groups with up to 20 members
- All necessary decisions for learning are made by the learners themselves rather than experts and tutors
- Learning is practical and derives from the discussion of the concrete experience of the group members rather than the introduction of abstract concepts
- Part of the participants duties is to go to their own organisations, try out the learned approaches, come back to the group, and report their experience
- The group becomes a forum for sharing concerns, get psychological support, but also receive feedback on their own ideas from other practitioners.
- Experts and tutors may be invited occasionally, only when needed
- Knowledge resources are used but only in conjunction with their practical learning

Of course, knowledge interactions between different firms is not a new phenomenon (Nonaka & Takeuchi, 1995; Von Hippel, 1988). The challenge presented to learning networks was to develop the managerial capabilities required for sustaining and improvising these activities on a long-term basis². In other words, the challenge for learning networks is to develop the organisational processes and the managerial capabilities which allow the systematic emergence and development of communities of practice between different firms. A critical enabler of this strategy is the appointment

7 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/learning-networks-service-oriented-architectures/16999

Related Content

Information Management and Enterprise Resource Planning: An Analysis of the Medical Products Distribution Chain

Gleison Lopes Fonseca, Ildeberto Aparecido Rodelloand Pedro Fernandes da Anunciação (2017). *Handbook of Research on Information Management for Effective Logistics and Supply Chains* (pp. 334-349).

www.irma-international.org/chapter/information-management-and-enterprise-resource-planning/166817

Why do People Share?: A Study of Intrinsic and Extrinsic Motivation to Share Knowledge in Organisations

Nelly Todorovaand Annette M. Mills (2018). *International Journal of Knowledge Management* (pp. 1-20).

www.irma-international.org/article/why-do-people-share/210683

A Revised Knowledge Pyramid

Murray E. Jennexand Summer E. Bartczak (2013). *International Journal of Knowledge Management* (pp. 19-30).

www.irma-international.org/article/a-revised-knowledge-pyramid/99641

Knowledge Management Model Building for Business Resilience, Continuity, and Sustainability

Enis Eleziand Christopher Bamber (2021). *Enhancing Academic Research and Higher Education With Knowledge Management Principles* (pp. 60-78).

www.irma-international.org/chapter/knowledge-management-model-building-for-business-resilience-continuity-and-sustainability/271010

Knowledge Retention in the Service Industry

Rodrigo Valio Dominguez Gonzalez (2016). *International Journal of Knowledge Management* (pp. 45-59).

www.irma-international.org/article/knowledge-retention-in-the-service-industry/160190