



Organizational Capital as a Strategic Field of Corporate Action

Panagiotis Damaskopoulos, MA, PhD
INSEAD
Boulevard de Constance
77305 Fontainebleau Cedex
France
Tel: +33 (0)1 60 72 41 39
e-mail: panagiotis.damaskopoulos@insead.fr

Claudia Roda, PhD
INSEAD
Boulevard de Constance
77305 Fontainebleau Cedex
France
Tel: +33 (0)1 60 72 43 12
e-mail: claudia.roda@insead.fr

Katerina Nicolopoulou MSC
INSEAD
Boulevard de Constance
77305 Fontainebleau Cedex
France
Tel: +33 (0)1 60 72 45 80
e-mail: katerina.nicolopoulou@insead.fr

Abstract.

This paper develops a framework of analysis of the dialectical relationship between the structure and capabilities of the firm and the competitive environment within which it operates in order to identify the key factors of corporate competitiveness. The nodal concept of this framework is “organizational capital” which denotes synergistic processes between 1) technological and financial corporate strategies, 2) knowledge management, and 3) their deployment for organizational learning and continuous adaptation of business models to a dynamically changing competitive environment. The framework is structured around three dimensions. The first advances an analysis of the pattern of economic change associated with the transition to the new economy with specific attention to the interaction between technology and finance. The second dimension concentrates on the changing patterns of economic valuation with specific emphasis on the growing strategic importance of intangible assets of organizations, in particular organizational knowledge capabilities. The third dimension develops an analysis of the dynamics of organizational design with particular attention to learning process within knowledge-intensive organizations.

Keywords: organizational capital, finance, technology, organizational knowledge, communities of practice

Introduction

Information and communication technologies (ICTs) are today generally acknowledged as the epicentre of a profound economic dislocation associated with what has come to be known as a transition to the new economy. One of the defining characteristics of this is the scale and scope of change in the structure of risk and

opportunity within which companies operate. It is often asserted that change has become ubiquitous while at the same time its pace has considerably accelerated. While these are central features of the current economic environment one additional element that is often de-emphasized by much business and academic commentary on the new economy is that the pattern of change exhibits high degrees of discontinuity and hence unpredictability.

These qualities of change affect not only the internal organizational dynamics of corporations but also the dynamics of the economic ecosystem within which they operate. A crucial factor of competitive success, in this context, is organizational “reading” of the patterns of change and continuous adjustment to shifts in the structure of profitability. To put it differently, the pattern of change associated with the transition to the new economy has resulted in an alteration of the economic parameters of value creation. This involves a shift in the valorization process that prioritizes the value of the intangible assets of corporations. One such key asset is “organizational capital”. Relatively under-explored but seemingly highly valued in global capital markets, “organizational capital” involves a process of knowledge management and knowledge creation and its deployment for organizational change and continuous adaptation to a dynamically changing and intensely competitive environment. The correlation between knowledge and change management is a function of the fact that in the new economy though investment in technology is important, it is business model innovation that is the key determinant of market capitalization (Brynjolfsson, E, Hitt, L, Yang, S., 2001). Realisation of this fact is largely what accounts for the drive toward innovation and the creation of organizational structures that would enable corporations to take advantage of the opportunities of the new economy.

At the Interface of Information Technology and Global Finance

Much recent analysis of the new economy has tended to focus on the “dot.com” phenomenon and the unrealistic valuations of Internet-based firms. The implosion of high-tech stocks has divided academic and business opinion as to what extent the new economy was an ephemeral phase of the current world economic restructuring. After all, during the year that ended in March 2001 \$10 trillion was wiped off global share values – equivalent to the annual output of the US economy (*The Economist*, 2001). However, exclusive association of the new economy with the movement of the world stock markets is not only misleading but can also be risky for corporate performance. For it fails to take into account the fact that the new economy involves a passage to a set of structural conditions that are of fundamental importance in shaping the competitive environment within which companies operate. Beyond the “irrational exuberance” of stock markets the new economy involves the formation of an economic system that is *informational, global, and networked*. It is *informational* because the productivity and competitiveness of economic units depend upon their ability to generate, process and apply efficiently knowledge-based information. It is *global* because the core activities of production, consumption, and circulation are organized on a global scale through functional linkages among economic agents. It is *networked* because productivity is generated through and competition is organized through a global network of interaction between business networks (Castells, 2000, Vol. I).

The origins of the new economy lie in the last quarter of the twentieth century. More specifically, the new economy is closely linked to two key industries that not only introduced process and product/service innovations, but also applied such innovations to their own structures and processes, which resulted in higher growth and productivity, and through competition, to the diffusion of new business models throughout the economy. These industries are *information technology* and *finance*. At the core of the new ICT industries are the Internet-centered firms and Internet-related components of other types of organizations. The centrality of Internet-related economic activities is not related primarily to the until-recently exponential revenue growth and market capitalization value of Internet-related firms but with their potentially dramatic impact of Internet-related technologies on the way business, especially old economy business, is conducted (Castells, 2000). Financial dynamism, on the other hand, is the product of successive rounds of innovation that have resulted in a profound transformation of financial markets both organizationally and technologically. Financial markets are increasingly globalized while, at the same time, they are one of the leading domains of application of new information technologies (Canals, 1997, Soros, 1998, Orléan, 1999, Castells, 2000).

The dialectical interplay between technology and finance is in many ways the central axis, the flywheel, that accounts for the dynamism and innovation potential of the new economy. On the one hand, the technological infrastructure of financial markets allows for processes of financial innovation and the development of new financial products that create value out of trade in securities. On the other hand, ICT-enabled financial innovation encompasses an increasingly larger sphere of social life where almost any potential source of value can be converted into a security and traded in financial markets through information technology-enabled transaction systems. Indeed, securitization is the driving force of the financial industry. Financial markets, in this respect, constitute the strategic network of the new economy. For it is there that value is assigned to economic activity as represented by its stocks, bonds, or any kind of security. The valuation of companies, and thus their capacity to attract capital, depends on the judgment of the financial market (Castells, 2000).

The question of how this judgment is formed is the subject of considerable debate, especially after the implosion of the high technology shares. Nevertheless, current research suggests that *expectations* about future growth projections of sectors of economic activity have become one of the central determinants of investment in the new economy. More specifically, in the new economy real-world economic calculations are made not on the basis of the actual profitability of corporations but in terms of expected growth of financial value. However, the creation of value is neither straightforward nor a quick-fix solution. Value creation involves management decisions that affect the strategic, financial and operational running of a company. Existing research indicates that there is no “right” way to value creation. The creation of value depends on the company, the industry, the country and the timing of decisions. Moreover, creating value is becoming an increasingly complex process for management of companies operating in a market marked by heightened competition and where innovation, especially technological innovation, is constantly changing the rules of the game (Dore, 1999).

But to reach the financial market, and to compete for higher value in it, firms have to go through processes of innovation in processes, product/services, management quality, and branding. Indeed, the ability to innovate in these domains becomes a key competitive weapon (Tuomi, 1994). But the key to innovation lies in creative thinking and the generation of value-creating opportunities. It is leveraging these opportunities that leads to improved shareholder value. Indeed, today the connection between knowledge management and innovation has become so critical that many companies consider knowledge management – combined with continuously improving information and communication channels – as risk management. The reason is that sharing and transferring knowledge enables companies to create transparency, which in turn helps to reduce risk. In other words, knowledge management is about access to information, open channels of communication and attitude, which combine to provide good judgment on the performance of a firm (Dore 2001).¹

However, paths toward innovation are conditioned by three structural transformations associated with the new economy that have significant implications for the organizational structure of corporations operating in it. First, ICTs centered around the Internet, in combination with globally integrated financial markets, tend to overcome one of the historic impediments to market transparency: geographical distance (Harvey, 1990). Transparency is a highly transformative reality that acts on two dimensions of the business process. Information technologies increase transparency in the operation of financial markets. Openness of corporations to financial markets is a function of the financial disclosure regulations that govern public trading, i.e., access to capital markets. Information technologies increase transparency in that they enhance the ability of shareholders to track more intensely the performance of managers and align it more closely toward maximising “shareholder value”. Within corporations this is reflected in a shift in the structure of accountability that is particularly visible in the development of e-business strategies. Historically, decision-making regarding technology has been the domain of chief information officers (CIOs) and operation managers. Recent research suggests that, by contrast, it is chief financial officers (CFOs) and controllers of corporations that are increasingly driving key Internet-related decisions such as the development of e-business strategies. The reason for this has to do with “value at risk” analysis that stresses that e-business is a critical component of competitiveness. Since the fiduciary obligation to enhance value lies with CFOs it is they that have are driving key Internet-related decisions (Goldman Sachs, 1999).

On the other hand, information technologies, and more specifically the Internet, increases price and process transparency. Pricing becomes more transparent as more transactions can be put to the test of auction. Customers can track the progress of their orders while suppliers can get information electronically out of their customers’ databases. This kind of transparency affects every aspect of business. Small changes in things such as price, product quality, service, responsiveness, and even partnerships could, in theory, be rapidly registered in market share shifts. Putting a business process online has effects throughout a company, since it introduces more information and volatility into strategy. As a result, partnerships and customer relations that underpin existing business models are being reconfigured. In reality, excepting financial markets where they are negligible, switching costs for most industries still represent a significant element of friction. Nonetheless, the Internet contains the potential to move most industries closer to textbook transparency. As a recent

authoritative report notes, “the Internet is the mother of all looking glasses” (Morgan Stanley Dean Witter, 2000).

The second implication of the new economy acts on the level of the spatial organisation of firms. As information technology and the Internet become entrenched into corporate life, the economic foundation of the company changes. Business theory on the spatial configuration of the firm has argued that the boundaries of firms are determined by the cost of transactions (Coase, 1937). The impact of the Internet is to reduce this cost and thus unleash a process of reconfiguration of the internal and external boundaries of firms. The reduction of information costs attached to transactions enhances the capacity to link different operations within and between firms and outsource critical business process components. An important implication of this is the acceleration of the cycle from conception to rollout. At the same time, new ideas and competition can spring up anywhere on the Internet which reinforces the need for companies to develop mechanisms for “reading” and adjusting to the shifting conditions of competition. Within companies, the implication is a greater need for collaboration in order to maximize synergies and increase efficiencies across all lines of the business process.

The third implication of the new economy is that it introduces a dialectic of centralisation/decentralisation in companies. This is largely a function of software standards required in order to enable the transfer of information within and between companies with different software systems, naming conventions, procedural methodologies etc. At the same time, standardisation increases the capacity of all parties involved (management, employees, external partners) to “see through” the entire process. Transparency, in other words, though it significantly enhances the influence of shareholders it also increases the potential of other corporate stakeholders or partners to “see through” a company’s activities. More specifically, it enables management to contribute to the activities at the frontlines of the company’s operations. On the other hand, in the context of the pattern of economic change and heightened competition companies need information at the frontlines of their operations. The implication is the growing importance of decentralized organizational forms that allow employees operating at the frontlines (i.e. it market touch-points with capital markets, customers, suppliers etc.) not only to detect changes that might affect corporate performance and profitability but also to respond rapidly to them. Hence the need for decentralised organizational forms that enhance the autonomy of employees not only in the generation of knowledge but also in terms of decision-making and action, in order to acquire knowledge of developments at the frontlines of their operations and to constantly adjust to shifts in the competitive environment within which a company operates.

The Strategic Significance of Intangible Assets

It is this set of structural conditions that largely accounts for the ascending importance of intangible corporate assets in the process of value creation. This can be understood as a shift that places increasingly higher value to the information assets, or more correctly, knowledge assets of corporations. The differentiation of *information* from *knowledge*, in this context, acquires strategic significance. The value of information generated by computer systems depends on human interpretation. Knowledge, by

contrast, resides in a social inter-subjective context and the human capacity for action based on that information. Thus, knowledge in a corporate organizational context can be distinguished from information since it is more directly linked to action and organizational performance. Organizations, of course, cannot manage knowledge *per se*. They can, however, create an environment that fosters the continuity, creation, collection, and sustained use and of knowledge and its application within the organization. In a nutshell, successful knowledge management must start with people, address their work and culture and use technology to enhance collaboration (Nonaka and Takeuchi, 1994, Malhotra 2000, Dore 2001).

In light of the strategic significance of the distinction between information and knowledge one of the most pressing requirements placed upon information systems is the association of meta-level context information with classical information sources. Context information, in other words, must support human interpretation and knowledge generation by enabling multiple viewpoints, varied evaluation criteria, and possible applications. Support of human interpretation of information and action is what is driving the increasing integration of services offered by Information and Communication Technology (ICT) companies. This drive partly explains the success of software such as the Microsoft Office suite: users need to be able to interpret the information found into a spreadsheet and directly use it to create a presentation. It also underlies the horizontal integration of technology services that has motivated some of the merges and take-overs between ISPs, content providers, and telecommunication companies (Fractalacci, Willcocks, and Kern 2001).

The strategic importance of the distinction between information and knowledge can be appreciated in the context of the differences of patterns of change in the old and the new economies. The old-economy business environment was marked by a relatively slow and predictable pattern of change that could be anticipated and managed through formal information systems. Information systems based on programmed guidelines of past corporate performance were able to deliver efficiencies based on optimization for given business contexts. The new economy, by contrast, is marked not only by an accelerated pattern of change but also by one that is discontinuous and hence unpredictable. In this environment, competitive success depends not on reliance on received principles that have contributed to success hitherto, but on understanding and adaptability to the constantly shifting rules that define competitive success. At premium is the ability of corporations to constantly interrogate their business models and adjust to increasingly discontinuous environmental change (Arthur, 1994).

Previous information systems integrated business models that were seldom modified and they were used to deliver performance on the basis of a set of well-defined variables. Systems required for competitive success in the new economy, instead, must enable frequent modification of business models, and more importantly, must be capable of integrating frequently changing variables often unknown at the time of the creation of the system. These requirements often clash with classic system-design methodologies where requirements analysis takes place at the beginning of the software life-cycle and is considered as finished, at the latest, after the first prototyping phase. New IT systems should not only be open, adaptive and adaptable but they should also be seen, from both the commissioners and the developers as continuously evolving systems working in a continuously changing environment. Adaptiveness, flexibility and adaptability should not only apply to the

business/financial/organizational requirements but also to the users. This is to say that systems should be flexible enough to respond to the needs of new, unforeseen users, as well as to the changing needs of long-term users.

Flexibility on the side of IT system design is a necessary but not sufficient condition for knowledge management. Information technology solutions must be integrated into organizational mechanisms that foster employee participation in the interpretation of information and the capacity to act upon it. One approach to knowledge management has proposed a model of “the knowledge-creating company” which is based on the organizational interaction between “explicit knowledge” and “tacit knowledge” at the source of innovation. This perspective argues that much of corporate knowledge is tacit and cannot be communicated under formalised management procedures. Yet a corporation’s potential for innovation is significantly enhanced when it is able to build bridges that allow the conversion of tacit into explicit knowledge, explicit into tacit knowledge, tacit into tacit, and explicit into explicit (Nonaka and Takeuchi, 1994, Nonaka and Nishiguchi 2001). This conversion can be facilitated through the use of information technology tools that may help capture non-formalized knowledge. These may include tools capable of formalizing, managing and transferring information expressed in natural language, through gaze and facial expression, body movement etc. Although these tools would provide further support to knowledge management, they do not currently constitute a complete information technology support to the management of tacit knowledge.

The implication is that there are major limitations in addressing knowledge management through the optic of information management in the new economy. With increasing computerization, organisational routines and standard operating procedures become embedded in the firm’s dominant logic, programs and databases in the form of “best practices”. Such formalized information systems tend to be inflexible and are often based upon the designers’ assumption that they have already identified the organizational and environmental elements that need to be addressed. Such assumptions were valid during an earlier era when change was linear and predictable. However, the accelerated and discontinuous pattern of change in the new economy renders such assumptions vulnerable (Malhotra, 2000, Castells, 2000).

There are mainly three reasons for this. First, information systems developed in the context of the old economy have been designed on the assumption that business processes change incrementally in a relatively stable market structure, and executives can anticipate change by examining past experience. The economic environment of the new economy, however, is marked by not by incremental but rather fundamental and discontinuous change. This environment prioritizes not long-term planning but rather flexible “anticipation-of-surprise” types of adaptive processes. These types of processes need to be addressed by future technologies that could be based, for instance, on system learning, emergent behaviors, uncertainty management, etc.

Second, the pattern of dynamic discontinuity of change associated with the new economy makes it problematic to confound the storage of information with knowledge management. The reason is that the interpretation of information is spatially and temporally contingent. The same compilations of data can evoke a variety of responses from different people in different contexts across space and time. Hence, storing static representations of a person’s knowledge is not the same thing as

storing human intelligence and experience. The implication of this is that the main issues in knowledge management in the new economy have to do with the creation of organizational environments that encourage participation in the interpretation of information along with the representation of meta-level information in information technology systems as described above.

Third, the fact that information is archived in a database does not ensure that people will necessarily see or use it. Most of information management technology concentrates on efficiency and creating a consensus-oriented view. The data archived in technological knowledge “repositories” is rational, static and largely context-free. Thus, though such systems might be efficient in terms of information accumulation they do not amount to systems facilitating the renewal of existing knowledge and creation of new knowledge. In order to support such renewal and creation of knowledge, designers and commissioners of future IT systems should explicitly recognize that new technologies can be successfully integrated in an existing environment only if they are adopted by their users. Adoption must be pursued at two levels. First both parties must carefully study the foreseen changes in the organization due to the introduction of the new technologies (a simple example being that if an email system for customer to order goods is put into place then somebody must be in charge with the management of such emails, the time to allocate to the process must be estimated as well as the impact on production). Second, users must be guided through the adoption process by carefully managing the change from their previous work habits to the new ones. This process involves informing the user about the system and its consequences, and demonstrating its effectiveness by enabling users to contribute to its design or evolution. Current trends in system design, such as design for usability and participatory design address exactly the problem of adoption and they should be encouraged and supported (Malhotra, 2000).

Organizational Design Implications: Sustaining Learning Communities in Knowledge-Intensive Organizations

Building a knowledge-intensive organization is not simply a matter of digitizing existing business processes. It is a question of organizational culture and how communities within organizations collaborate and learn. In the competitive environment of the new economy each individual member of an organization carries valuable information that can be turned into economic value through the creation of an organizational environment that allows that information to be brought into synergistic relations with other the experience of other members within the organization. For this reason it is important that organizations place greater emphasis on building “communities of practice”, both within and between organizations. It is often when people have the opportunity to “think beyond the box” that some real breakthroughs in corporate performance occur.

Effectively designing knowledge-intensive organizations in the 21st century is all about managing the ways in which people learn and create knowledge. Transferring this knowledge and leveraging it accordingly through the use of new ICT environments holds great promise for organizations in the new economy. Individual employees are often seen as one of the main organizational assets; for this reason, a number of company training and development programs have been geared towards

enhancing the skills of participating employees. Learning for individuals involves the acquisition of new knowledge that will consequently lead to new actions and behavior. Organizational learning, however, being a systemic phenomenon, is “larger than the sum of its parts” as it transcends the individuals who originally acquire the insights and skills and later becomes embedded in organizational routines. One of the main organizational concerns in terms of organizational learning practices and design is to develop an organizational cognitive system or memory which preserves knowledge, behaviors, norms and values once the individuals leave (Pettigrew and Whipp, 1991; Jones and Hendry, 1994; Pedlar, Burgoyne, Boydell, 1988; MacDonald, 1995; Levitt and March, 1988). On the other hand, sharing knowledge would involve processes of collection, organization, dissemination, accessing and utilization of this knowledge (Skyrme, 1999). Therefore, it would become imperative for organizations to find ways in which to best implement and manage these processes. Managers could look into the priorities of the “learning organization” as they have been defined by Pedlar, Burgoyne and Boydell (1988): a focus on change, worker participation and development, adaptation, management systems and structures as well as processes of delegation, power and control.

More specifically, communities existing in organizations, such as communities of practice, have a greater capacity to share not only explicit, but also tacit knowledge. Communities of practice are formed by people coming together by shared experience and a passion for shared enterprise (Wenger, 2000; Lave and Wenger, 1991). These communities are usually not “managed” in the traditional sense, but can and indeed should be sustained infrastructurally by management in organizations; they share their knowledge and experience in free-flowing, creative ways that foster new approaches to problems and can drive strategy, generate new lines of business, solve problems and promote the spread of best practices effectively (Wenger, 2000). Stacey (1996) argues that such emergent formations could best be sustained by organizations fostering a creative ‘edge of chaos’ where organizational members are free to engage in inquiry and learning, even without necessarily working from within a predetermined plan or strategy.

Participation is a central process for knowledge creation in such communities, whereby knowledge creation itself basically becomes a social process. In the original theory of learning communities (Lave and Wenger, 1991), this is achieved through peripheral participation: newcomers interact with old timers in organizations in such a way that gradually a shared identity is created. Opening up virtual spaces for organizational communities could, for example, make for more effective spaces for learning. Research has shown that more interactions take place in virtual rather than physical communities of practice, as people do not have to necessarily wait to be hierarchically legitimized in the community (Olson, 1999). Therefore, managing the relationships developed becomes important and building and sustaining trust in the operations of virtual learning communities can be seen as one of their most important success factors.

Organizations should be aware of the fact that social capital supports the main processes of knowledge management. According to a Gartner report (Harris and De Azevedo, 2001), organizational communities are characterized as groups of people with similar interests gathering around in a determined place (physical or virtual) to share knowledge, in the context of social or business interactions. Such communities

produce value-creating entities (knowledge assets) such as for example reports or tools. In fact, they can contribute to innovation processes by making incremental improvements, rather than achieving radical innovation (Lesser et al, 2000); therefore, management should be making provisions for sustaining these incremental interactions. Moreover, this innovation would lie also across the boundaries of the organization, in the channels of an organization's customers and suppliers. In terms of innovation creation, therefore, it could become a managerial priority that organizational boundaries could be opened to include participants from outside (Duffy, 1999; Cothrel and Williams, 2000; Cothrel, 2001).

However, putting into place such organizational features presents significant challenges. Most knowledge managers consider knowledge sharing as a quasi-autonomous process that takes place more or less automatically once technological systems are in place. However, a body of accumulating evidence suggests that knowledge management, especially the transfer of tacit to explicit knowledge and its translation into value, becomes possible only through the development of credible "incentive systems" that sustain and enhance "communities of practice". Implementing a knowledge management and organizational redesign strategy in a transparent competitive environment of considerable pressure for short-term financial performance is fraught with difficulties. These are located on several levels. The first concerns *the relationship of individual employees to the organization*. In a context of continuous organizational restructuring, the relationship between individuals and organizations is increasingly less based on trust and confidence. Organizations, as a result, need to develop environments which lead to a strong and convincing "equity feeling" among their employees. This is a fundamental requirement because it is the foundation of employee commitment that is necessary for the formation of sustainable "communities of practice". For a sense of equity and commitment to organizational objectives is a prerequisite to building the bridges that allow the transfer of tacit to explicit knowledge. The development of such a feeling requires recognition of individual effort over a long-term period. Second, building organizational capital necessitates *the creation of strong intra-organizational relationships*, which also take time to build. The current process of restructuring that affects most corporations undermines established ties, without necessarily encouraging the development of new ones. Third, if transparency in corporate performance is a major constraint, then *an overemphasis on it might lead to perverse impacts*. One of the most important of these concerns a possible reduction in risk-taking and innovation, i.e., the corporate qualities of fundamental importance for competitive success in the new economy.

Conclusion and Future Research Directions

The economic dislocation associated with the transition to the new economy brings in its path a set of transformations that amount to a shift in the parameters of the process of value creation. This involves a shift that prioritizes the intangible assets of corporations and specifically their "organizational capital". Managing "organizational capital" involves learning, that is the generation of knowledge and the combination of an ability to manage knowledge and change continuously. In other words, managing "organizational capital" involves more than knowledge. It involves the capacity to translate knowledge into new ways of doing business – a process of business model

innovation. It also involves change in management philosophies, organizational structures and culture.

Information technology in this context has become a central strategic component of competitive success. Yet, the successful implementation of systems geared to the efficient management of the intangible assets of corporations, above all organizational knowledge, depends on effective and sustained communication between information technology systems designers and business people concerned with the implementation of business strategy. Such communication is critical to the development of synergies between technological systems and business objectives. Information systems developed in the old economy integrated business models that were seldom modified and they were used to deliver performance on the basis of a set of well-defined variables. Systems required in the new economy must enable frequent modification of business models, and more importantly, must be capable of integrating frequently changing variables often unknown at the time of the creation of the system. New information technology systems should not only be open, adaptive and adaptable but they should also be seen, from both the commissioners and the developers as continuously evolving systems working in a continuously changing environment. The flexibility and adaptability of business models required by the discontinuous and unpredictable pattern of change that drives business model innovation, in other words, must increasingly be reflected in the development of technological system design in ways that contrite to the competitive performance of organizations.

[¹] The connection between knowledge management and value creation and the correlation of knowledge management to risk management are borne out in recent research in the financial services sector conducted by the Institute of Financial Services. See Dore, 2001.

References

- Alavi M. Leidner D., 1999, Knowledge Management Systems: Emerging Views and Practices from the Field, Proceedings of the 32nd Hawaii International Conference on System Sciences – 1999
- Arthur, Brian (1994), *Increasing Returns and Path Dependence in the Economy*. Ann Arbor.
- Brown, J.S. and Duguid, P. 'Organisational learning and communities of practice: towards a unified view of working, learning and organisation', *Organisational Science*, 2, 1, pp 40-57, 1991.
- Brynjolfsson, Erik, Loin M. Hitt and Shinkyu Yang, (2000), "Intangib;e Assets: How the Interaction of Companies and Organizational Structure affects Stock Market Valuations", MIT Working Paper, July at <http://ebusiness.mitedu/erik/>
- Canals, Jordi (1997), *Universal Banking: International Comparisons and Theoretical Perspectives*. Oxford.
- Castells, Manuel (2000), *The Information Age: Economy, society and Culture*. Volume I: *The Rise of the Network Society*, Volume II: *The Power of Identity*, Volume III: *End of Millennium*, Oxford.
- Coase, H. Ronald, "The nature of the firm", *Economica*, 1937.

-
- Cothrel, J., (2001), 'Virtual Communities today', participate.com website, published works <http://www.participate.com/research/art-virtualcommunities.asp>
- Cothrell, J., and Williams, R (2000)., 'Four smart ways to run online communities', *Sloan Management Review*, Cambridge, Summer issue, pp81-91
- Divitini Monica, Giuseppe Omodei Salè, Alberto Pozzoli, Carla Simone, 1993, Supporting the dynamics of knowledge sharing within organizations, Proceedings of COOCS93 (Conference on Organizational Computing Systems) Milpitas, CA 1993, p.178-183
- Dore, Lucia (1999), *How financial institutions can maximize shareholder value*, Special Report by the *Financial World*, The Chartered Institute of Bankers in Association with Xerox. London: November.
- Dore, Lucia (2001), *Winning Through Knowledge: How to Succeed in the Knowledge Economy*, Special Report by the *Financial World*, The Chartered Institute of Bankers in Association with Xerox. London: March.
- Duffy, D. (1999), 'It takes an e-village', *CIO*, Oct 15
- Dyer Jeffrey H., Nobeoka Kentaro 2000 "Creating and managing a high-performance knowledge-sharing network: the Toyota case". *Strategic Management Journal*, 21:345-367 (2000) John Wiley & Sons, Ltd.
- Eason, K.D., (1988), *Information Technology and Organisational Change.*: Taylor & Francis.
- Francalacci, Chiara, Leslie Willcocks (2001), Thomas Kern, *Internet and the horizontal integration of the IT business*, *European Management Journal* Vol. 19, No. 2, pp. 145 – 156, Elsevier Science.
- Goldman Sachs Investment Research (1999), *E-Commerce/Internet: B2B: 2B or Not 2B*, November.
- Harris, K, and De Azevedo, W., 'Communities: sociology meets technology', Gartner report, 2001
- Harvey, David, 1990, *The Condition of Postmodernity*, Oxford.
- Held, David, Anthony McGrew, David Goldblatt (1999), and Jonathan Peratton, *Global Transformations: Politics, Economics and Culture*, Stanford.
- Jones, A.M. and Hendry, C., 'The learning organisation: adult learning and organisational transformation', *British Journal of Management*, vol 5, pp 153-162, 1994.
- "Inside the Machine: A Survey of E-Management", *The Economist*, November 11th 2000.
- Lash, Scott and John Urry (1987), *The End of Organized Capitalism*, Cambridge.
- Lash, Scott, and John Urry (1994), *Economies of Sign and Space*, London 1994;
- Lave, J., and Wenger, E., *Situated learning*, Cambridge: Cambridge University Press, 1991
- Levitt, B and March, J, 'Organizational Learning', *Annual Review of Sociology*, 14, pp 319-340, 1988
- McDonald, S, 'Learning to change: an information perspective on learning in the organisation', *Organizational Science*, vol 6, no 5, 1995
- Malhotra, Yogesh (2000), "Knowledge Management for E-Business Performance: Advancing Information Strategy to 'Internet Time'", in *Information Strategy: The Executive's Journal*, Vol. 16 (4), Summer.
- Moran, Michael, *The Politics of the Financial Services Revolution. The USA, UK and Japan*, New York 1991.
- Morgan Stanley Dean Witter (2000), "The B2B Internet Report, Collaborative Research", April.

-
- Nonaka, Ikujiro and Takeuchi Hirotaka (1994) *The Knowledge-creating Company*. New York.
- Nonaka, Ikujiro, and Toshihiro Nishiguchi, eds., (2001), *Knowledge Emergence: Social, Technical, and Evolutionary Dimensions of Knowledge Creation*. Oxford.
- Olson Alexander, J. (1999) 'Collaborative design, constructivist learning, information technology immersion and electronic communities: a case study', *Interpersonal computing and technology: An electronic journal for the 21st century*, vol 7, number 1-2. <http://www2.nau.edu/~ipct-j/1999/n1-2/alexander.html>
- Orléan, André (1999), *Le Pouvoir de la Finance*, Paris.
- Pedler, M., Burgoyne, J, and Boydell, T., *Learning Company project; a report on work undertaken October 1987 to April, 1988*, The training Agency, Sheffield, 1988
- Prahalad, C, and Hamel, G., 'The core competence of the corporation', *Harvard Business review* (May-June): pp79-91, 1991
- Skyrme, D.J., (1999) *Knowledge Networking: creating the collaborative enterprise*, Butterworth-Heinemann, Oxford
- Soros, George (1998), *The Crisis of Global Capitalism: Open Society Endangered*, New York.
- Sumner, Tamara, John Domingue, Zdenek Zdrahal, Alan Millican, Jayne Murray, 1999, Moving from On-the-job Training towards Organisational Learning, KAW'99 Twelfth Workshop on Knowledge Acquisition, Modelling and Management, Alberta, Canada October, 1999.
- Stacey, R., Complexity and the group matrix: Reflexivity, self-organisation and emergence in the group matrix; bounded instability, group analysis and the matrix organisations under stress; papers 19, 19a, 20, Publications of the Centre for Management and Complexity, 1998
- Tuomi, Ilkka (1994), *Corporate Knowledge: Theory and Practice of Intelligent Organizations*, Helsinki 1994.
- "Untangling e-economics: A Survey of the New Economy", *The Economist*, September 3rd 2000.