

The Significance of Knowledge Management in the Business Sector

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Introduction

Knowledge management – how organisations track, measure, share and make use of intangible assets such as an employee's ability to think fast in a crisis – is increasingly important in a fast-changing knowledge society. Organisations have always managed knowledge, even if they did not use the term knowledge management. For example, a person experienced in operating or repairing a particular machine could pass their knowledge on to newcomers.

Evidence shows that organisations are increasingly paying attention to their systems of knowledge management to ensure that they are capturing, sharing and using productive knowledge within their organisations to enhance learning and improve performance. Indeed, the adoption and implementation of knowledge management practices, whether formal mentoring, rewards for knowledge sharing or systems to capture external knowledge, may be seen as a critical stage for corporations wishing to integrate into an increasingly knowledge-based economy.

Knowledge management practices seem to have a far from negligible effect on innovation and other aspects of corporate performance. But there is little systematic evidence of just how great an effect knowledge management has. Among the various categories of knowledge-related investments made by companies, such as education, training, software or research and development (R&D), knowledge management is one of the areas about which least is known in terms of quality, quantity, costs and economic returns.

We need to be able to understand knowledge management better, and to find ways to measure it and identify best practices in this area so that companies can operate better and governments can develop policies to help them to do so. This Policy Brief looks at the current state of knowledge management as an organisational process within various kinds of companies and sectors; the variety of methods and tools that are being developed; and the economic effects of knowledge management practices. ■

Knowledge management: what is new?

Companies have always managed knowledge, even if they have not talked about it in those terms. But the need for knowledge management as a systematic corporate strategy is becoming far more urgent for a number of reasons.

Firstly, some of the traditional practices within employment and human resources systems that helped diffuse and manage corporate knowledge no longer work. For example, the memorisation and transmission of tacit knowledge has always been ensured by internal institutions (the craft guild, the internal labour market) and external organisations (professional networks), in which this was an essential function. However, these institutions have largely disappeared or find themselves in crisis. The principle of lifelong careers within a single company also led to a kind of common bond between the employee and the company, where the individual's knowledge was an almost integral part of the company's intellectual heritage. Here again, recent developments in terms of turnover, mobility and flexibility make it necessary to invent new forms of knowledge retention, through codification or the implementation of strong legal mechanisms to protect the company's intellectual heritage, or through human resources policies that are better suited to maintaining skills.

Secondly, as innovation has become a condition of business survival, this has forced the introduction of explicit forms of knowledge management. In an innovation-driven competitive environment, the cost of missing the boat on a single possible innovation – in other words, ignoring a “good idea” – becomes enormous. So it becomes essential to introduce planned strategies for collecting and documenting ideas and suggestions by employees. In addition to this type of knowledge management, processes for stimulating creativity become essential.

Thirdly, the organisational challenges created by the dissemination of information technologies and the need for new methods for evaluating intangible assets make it essential for companies to introduce explicit knowledge management methods.

Information and communications technology (ICT) can only increase productivity if the appearance of new knowledge tools and instruments is matched by new forms of organisation. So to reap the benefits of the potential productivity increases offered by ICT,

companies need to develop new ways of incorporating changes in organisational skills and procedures into their systems. The management of knowledge, particularly in terms of the codification of procedures, is central to these changes.

It is also becoming more important for companies to be able to measure their intellectual capital, as the stock market valuation of a company appears to be increasingly dependent on the value of its intangibles. This is also true when companies are trying to attract venture capital or build a partnership. But if a company is to be able to place an appropriate value on its intellectual capital it needs systems to identify and measure it. ■

How to measure knowledge management?

To answer some of the questions about knowledge management and its impact, the OECD, in collaboration with Statistics Canada, launched a series of pilot studies, to be carried out in seven countries – Canada, Denmark, France, Germany, Ireland, Italy and Japan – by their national statistics offices. The studies are based on a survey of the use of 23 knowledge management practices, such as rewarding people for preparing a written record of lessons learned from a project, or producing training manuals, or for good work practices. This is complemented with questions on incentives used in different countries to encourage knowledge management practices such as improving integration and sharing of knowledge, avoiding information overload, or making it easier for teams that are physically far apart to work collaboratively, in order to accommodate how micro-firms are managing knowledge.

This activity provides a unique opportunity offered by “official surveys” carried out at the national level to link the knowledge management databases acquired from the OECD survey with data coming from other sources covering areas such as R&D or innovation.

For countries willing to carry out their own national surveys, two kinds of strategy are possible: to implement the whole survey as a pilot study or to add a few questions on knowledge management to an existing regular questionnaire, such as the Community Innovation Survey – a survey on the procedures, conditions and effects of innovation at firm

level which is carried out in most European countries and in a few other OECD countries. While the first option gives the opportunity to really test the knowledge management questionnaire and to collect information related to a large range of issues and problems, the second option has proven to be very useful for countries where starting a new survey is a difficult task for administrative, political or technical reasons.

To date, five pilot studies have been carried out, in Canada, Denmark, France, Germany and Japan. The Canadian study, carried out by Statistics Canada, covered 348 respondent firms of varying size but with at least 10 employees, belonging to five different sectors. The German study, carried out by Fraunhofer ISI, covered 497 firms of varying size with at least one employee, belonging to 7 different sectors. The Danish study, carried out by CFL, covered 61 firms of varying size with at least one employee, belonging to all sectors of the economy. The French study was carried out by SESSI using the second strategy, which was to merge four questions on knowledge management in the Community Innovation Survey. This allowed a very large number of firms to be covered – a total of 5 500 with a response rate of 85%. Japan adopted the same strategy and lodged four questions on knowledge management in the Japanese National Innovation Survey 2003. Ireland and Italy are completing the survey in 2004 using the full questionnaire. ■

How widespread is its use?

Some of the most interesting findings to emerge from these pilot studies in Canada, Denmark, France, Germany and Japan are the following.

Massive adoption: Knowledge management (KM) practices, like new technology, have spread massively across the whole economy. The French survey covering 5 500 firms shows that nearly one firm in two has adopted at least one KM practice.

Company size matters: Firms manage their knowledge resources differently depending on their size, rather than industrial classification. Large companies on average used more knowledge management practices than small ones, and in a different way. In Canada for example, 53% of firms with 250 employees or more said they promoted collaborative work in

Figure 1. Average number of KM practices in use by firm size

Scope: firms of 5 activity sectors, any size



Source: *Measuring Knowledge Management in the Business Sector: First Steps*, OECD, 2003.

virtual teams, while only 8% of those with 20 to 49 employees said they supported this practice. Micro-practitioners with 1-19 workers showed less interest in developing corporate memory or documenting their experiences than their larger counterparts. The surveys also found that some knowledge management topics are more relevant for the largest firms. This is true for the objective “to make the best use of existing knowledge” (corporate memory, identifying best practices, not re-inventing the wheel) (see Figure 1).

These results were not surprising. As firms grow in size, management becomes more complex and the need for efficient knowledge management also increases. Without that capacity, the ability to bring new products to the market and develop new processes for producing and delivering them is reduced, and any such reduction in opportunities to innovate has far-reaching economic and social implications, particularly since it is big firms that are responsible for mass production in the industrialised economies.

Hi-tech industries use KM more: Knowledge management policies are also particularly widespread in the high and medium-high tech industries, such as the pharmaceutical industry, aeronautic and space construction or electronic component manufacturing. In these industries, 40% to 45% of the firms have implemented policies to foster knowledge sharing, to

retain employees or to establish partnerships to acquire knowledge, and about 25% have adopted a written knowledge management policy. The diffusion of knowledge management policies is far less advanced in the low tech industries such as clothing and leather, publishing, printing and reproduction, or home equipment (see Figure 2).

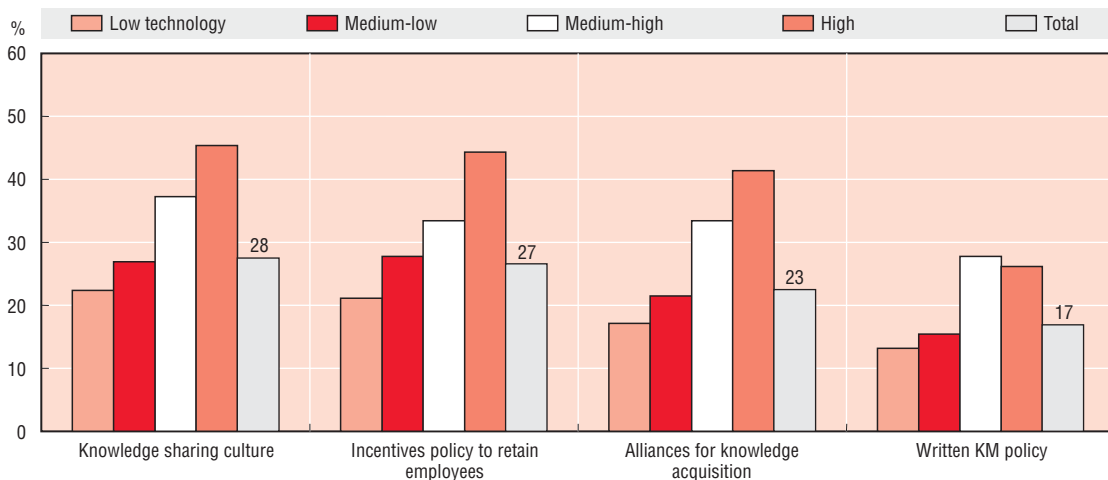
New management methods: Knowledge management practices are more widespread in firms that have adopted new methods of management, known as project-based organisations – companies that are using Internet intensively as a search tool and that are intensive in R&D. Such complementarities reflect clusters of knowledge-driven practices, which are a clear signal of the advance of those companies towards the knowledge economy.

Tensions in KM strategy: The main motives for implementing knowledge management practices are internal – transfer of knowledge within a company, protection from loss of knowledge and capturing knowledge from outside – while the inclination to share internal knowledge with appropriate external

elements, such as customers, suppliers or partners, is weak. There is thus an inherent tension in knowledge management strategies because managing knowledge, which implies making its existence known and sharing it, increases a firm’s risk of losing control over its intellectual capital. One of the benefits of a situation in which knowledge is not managed is that it remains shielded, invisible to others and, therefore, very difficult to imitate or reproduce. Defining knowledge, codifying it, providing incentives to encourage employees to describe and disseminate their skills are all high-risk activities from the point of view of the control that a business would like to exercise over its intellectual capital. Therefore, knowledge management involves accepting compromises and negotiating control of the knowledge produced within the company.

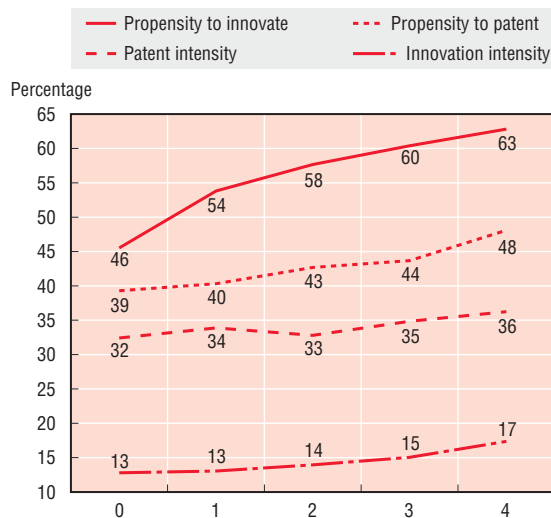
Knowledge management practices matter for innovation and productivity performance: This last result is particularly important. It comes from the French study, which covered a very large number of firms (5 500 firms with a response rate of 85%) and shows that whatever the company’s size,

Figure 2. Diffusion of KM practices according to technology intensity
Manufacturing firms with 20 employees or more (excluding the food industry)



Source: *Measuring Knowledge Management in the Business Sector: First Steps*, OECD, 2003.

Figure 3. Knowledge management intensity and innovation performance



Key: all things being equal, the companies without any KM policy have a 46% propensity to innovate compared to the companies rolling out the four policies that have a 63% propensity to innovate.

Source: *Measuring Knowledge Management in the Business Sector: First Steps*, OECD, 2003.

industry or R&D effort, firms innovate more extensively and file more patents if they set up knowledge management policies. Knowledge management also has a positive effect on labour productivity: all things being equal, firms stating that they have a culture to promote knowledge sharing have higher labour productivity levels than firms that did not adopt any. ■

What should governments do?

The correlation between the intensity of knowledge management, innovation and productivity has triggered considerable debate among innovation policy experts. For nearly five years now, discussion has been focusing on the famous “R&D gap” between the United States and Japan on the one hand and Europe on the other, which has prompted the

European Community to set a target for raising domestic R&D expenditure to 3% of gross domestic product by 2010. Without challenging the relevance of the target – confirmed by all the empirical and theoretical studies showing the scale of the positive effects generated by R&D –, it is nevertheless reasonable to think that the initial findings concerning the correlation between knowledge management, innovation and productivity ought to fuel the debate and prompt people to think about the possible existence of a “knowledge management gap” as an explanation for some of the differences in innovation and productivity performance between the major OECD regions. What is more, this fundamental finding is itself informed by a whole series of other findings – on the conditions surrounding the setting up of knowledge management policies, size and sector effects, and the necessary compatibility between the different practices themselves – which provide a solid and detailed basis for implementing coherent knowledge management support policies.

It is also important to bring to the attention of the public sector an initial overview of the rapid changes that the private sector is bringing about in the area of knowledge management. It is now quite clear that the renewal and regeneration of the various components of the public sector essentially involve adopting and introducing new methods of knowledge management, combined with efficient use of information and communications technology. Circulating these findings to public sector experts and practitioners is thus of particular importance.

The difference between current knowledge management requirements and the knowledge and competences required in previous times lies largely in the changes brought about by the rapid spread of information and communications technology (ICT), combined with the introduction of a systemic approach to management.

ICTs are certainly making it easier for big firms to acquire information and share it among knowledge workers. Never before have there been such opportunities to collect information on a large number of operational areas such as inputs, staff, energy, raw materials and information, processing and manufacturing techniques, background information on customer purchases and preferences. That information, combined with the experience of managers throughout the firm –

from the mail sorting department to the boardroom – has to be managed if it is to generate value. This means adopting a strategic approach to knowledge management, based on an efficient infrastructure. In small businesses, on the other hand, all the staff can share the firm's knowledge more easily, without any need for a complex technological infrastructure.

Knowledge management covers not only such areas as inputs, processing, outputs and customers, but extends to the commercial environment in which the firm exists. This environment nowadays includes tax laws, consumer protection in the countries in which the firm operates or exports, environmental regulations, energy costs, the supply of skilled employees, labour market legislation and changes in consumer preferences – linked in part to population changes. As a result of the collapse of Enron, there are now also issues such as risk management and

confidence vis-à-vis employees, customers, shareholders and governments. Internal and external factors such as these are prompting firms to evolve all the time and adjust, or even fundamentally change their views. If policy-makers want to learn more on the basis of identifying “best practices”, then work on measuring and understanding knowledge management has to continue. ■

For further information

For more information on the OECD's work on knowledge management, please contact Tom Schuller, Head of CERI, e-mail: tom.schuller@oecd.org, tel.: 01 45 24 79 01. ■

Box 1. Implications for education, learning and skills

The fact that this survey originated within the OECD's Centre for Educational Research and Innovation (CERI) in collaboration with Statistics Canada is not without significance. Researchers and decision-makers in education have to contend with an enigma: is it possible to identify any real discontinuities in terms of the competences and skills that people need in order to live and prosper in the knowledge-based economy? There is something of a paradox here. Despite all the fractures and shocks that can be observed at the economic and technological level, competences remain remarkably stable. The competences required in the knowledge economy are not necessarily new. With the exception of ICT skills, they are hardly cutting edge. The famous “soft skills” which are much spoken of as vital in a knowledge economy – leadership, the ability to work in a team, learning to learn, the ability to communicate and analytical skills – are hardly new. Craftsmen in the Middle Ages must have possessed much the same skills.

What has changed is that knowing how to manage such knowledge is part of the new competences required for the knowledge economy. Knowledge management should make it possible to deduce a considerable number of skills that everyone needs to develop: sharing, sorting and memorising, communicating, codifying, retrieving documents, etc. This general concept – knowing how to manage knowledge – is a procedure for identifying and classifying the new skills required and establishing what education programmes are best suited to the knowledge economy.

For further reading

- **Measuring Knowledge Management in the Business Sector: First Steps**, OECD (2003)
ISBN 92-64-10026-1, \$40, € 40
- **Innovation in the Knowledge Economy: Implications for Education and Learning**, OECD (2004)
ISBN 92-64-10560-3, \$24, € 21
- **New Challenges for Educational Research**, OECD (2003)
ISBN 92-64-10030-X, \$21, € 21

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