

Skills for Knowledge Working: A Guide to Good Practice

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Skills for Knowledge Working: A Guide to Good Practice

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Centrica	Oracle
Christian Aid	Orange Group
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Department for Education and Skills (DfES)	Quality Curriculum Authority
Essex County Council	Rolls Royce Engineering
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Foreword

The British Standards Institution (BSI) has developed a series of publications that aim to bring 'informed clarity' to the emerging management science commonly known as Knowledge Management (KM). The objective of these publications is to help managers to assess developments in KM and to identify the potential benefits of KM practices to their organizations. Organizations in both the private and public sector have developed and implemented aspects of KM. The BSI Guides are based on the experience of these organizations.

Following the first publication, *Knowledge Management: a Guide to Good Practice — PAS 2001*, the committee of experts (KMS/1) formed by BSI to steer and review KM publications continued to work on publications which provide in-depth coverage of different the aspects of KM covered in PAS 2001. This Guide is one of the in-depth publications.

For those with limited familiarity with KM we would recommend the first publication

PAS 2001 *Knowledge Management: a Guide to Good Practice*.

For those seeking more depth to specific aspects of KM the following publications are now available:

PD 7500 *Knowledge Management Vocabulary*

PD 7501 *Managing culture and knowledge. Guide to good practice*

PD 7502 *Measurements in knowledge management*

PD 7503 *Introduction to knowledge management in construction*

PD 7504 *Knowledge Management in the Public Sector*

PD 7505 *Skills for knowledge working*

PD 7506 *Making KM relevant — a guide to linking KM to other organizational functions and management processes*

BSI KM publications are available at www.bsi-km.com

Summary of pages

This document comprises a front cover, an inside front cover, pages i to viii, pages 1 to 100, an inside back cover and a back cover.

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Executive Summary

In 2001 the British Standards Institution published 'Knowledge Management: a guide to good practice' which provided a practical introduction to mainstream thinking in the field of Knowledge Management (KM). 'Skills for knowledge working' is one in a series of Guides which expand the themes covered by the 2001 publication. It focuses on the skills and competencies required in knowledge intensive, networked organizations, and in preparing the Guide we consulted KM leaders in seventy organizations, leading KM consultants and thinkers, and reviewed current literature in a wide range of disciplines. We defined KM as 'the approaches that organizations adopt to mobilize and maximize their ideas, expertise and information in order to meet their business goals'.

Networked organizations — the context

Many organizations are using the connectivity made possible by information and communications technology (ICT) to build their operations and business relationships around networks and teams. These networks provide flexibility in the way internal resources are used; nurture a creative and innovative environment; and facilitate knowledge sharing between customers, suppliers, and regulators. Management styles and the skills, attitudes and competencies of all staff are critical success factors in successful networked organizations and in knowledge management.

Roles in knowledge enabled organizations

Many roles contribute to the success of knowledge working, and the diverse job titles and descriptions of these roles reflect the different natures of organizations and their environments. However, five generic role groups are present in organizations with active KM approaches.

- The Knowledge Worker
- Knowledge conscious leaders
- Knowledge strategists
- Knowledge facilitators
- Knowledge specialists

These roles may be filled by different individuals, comprising KM teams or job families, or one person may take on a number of the roles.

Knowledge workers

Knowledge workers are the people whose functions and activities facilitate the main business of the organization and it is proposed that all staff are knowledge workers. Their productivity and contribution to corporate capability is affected by the way they are managed and led. Successful knowledge working requires a combination of skills, attitudes and behaviours in addition to professional, technical or administrative expertise. These include:

- an ability and willingness to learn;
- business awareness and understanding;
- collaboration;
- communication;
- information literacy;
- interpersonal skills;
- leadership;
- networking; and
- team working.

Informal networks exist in all organizations and reflect the social characteristics of people working together. They can enable or hinder knowledge flow and KM. Managers need to understand how these networks operate in their particular environment and the different roles people play in sustaining the networks. Many organizations encourage and support formal networks and communities to realize their knowledge working benefits.

Knowledge conscious leaders

A diverse range of roles (including line and project managers, supervisors, executive and senior managers) carry the responsibility of ensuring that teams, groups, departments and organizations meet their targets and achieve their objectives. In modern organizations the competencies required of people in these roles include facilitation, leadership and coaching rather than traditional control and command techniques. They should ensure that individuals have access to the resources they need to do their job, that work processes enable them to work to their full potential, and that individuals continue to develop appropriate skills and experience. They have a direct influence on how people behave at work and therefore on how well knowledge is created, shared and used.

Knowledge conscious leaders are critical to ensuring that the organization uses the talents of all staff and that the benefits of KM interventions are realized.

Their key skills are:

change management; communication; customer orientation;	facilitation; interpersonal skills; knowledge sharing; leadership;	self awareness; staff development; team building.
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Knowledge strategists and leaders

KM strategy and direction may be developed and led by a full time 'Chief Knowledge Officer' (CKO), with or without the CKO title, or by a senior executive who takes on the CKO role as part of a broader remit. It may also be developed by a small group of individuals from different functions and business lines, who collectively design the strategy and appoint someone as a visible 'KM leader'. Whatever the approach, senior, visible KM leaders are critical to the success of KM strategies.

Their critical competencies include an outstanding knowledge of the organization and its business, leadership and influencing skills. It is essential that they are respected by their peers and have a high level of credibility amongst the people whose working practices they wish to influence.

Knowledge facilitators

Dispersed throughout the organization are people who have the explicit remit to help their colleagues find, organize, create, use and share knowledge. Their roles may be full- or part-time and designated as KM related (such as community and network facilitators, knowledge navigators, knowledge managers, knowledge stewards, etc.). Or they may be roles not explicitly aligned to KM but which contribute to the knowledge based environment (such as competitive intelligence, market research, or library and information centres).

Sample competencies for knowledge facilitators include:

self awareness and control; personal effectiveness; self development;	analysis and judgement; interpersonal skills; organizational awareness; joined-up thinking;	partnership working; developing people; leadership.
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Knowledge specialists

Small core teams of knowledge specialists support and promote knowledge working through the development of appropriate tools, processes and techniques. They may be made up of people in full-time roles and be a designated KM team. Equally they could be people in roles within a number of support functions who form a virtual team. These roles typically cover the main parameters of KM:

- information architecture;
- people development;
- process design and organizational development; and
- technology.

Their key skills are an understanding of the KM tools and processes available and an ability to match them to specific business problems. Other skills in these teams include:

the ability to learn; business understanding; communication; creativity;	credibility; facilitation; ICT skills; information management; knowledge architecture;	negotiating/influencing skills; networking; interpersonal skills; project management; team working.
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Developing skills for knowledge working

The culture and leadership of the organization affects its knowledge working capability. KM training and development cannot be effective if senior management is not convinced by, and ready to endorse, KM approaches and processes.

Most organizations do not have specific ‘KM’ or ‘knowledge working’ training programmes, but many target the development of related KM enabling competencies, such as leadership, facilitation and communication. Workplace learning is a key feature in the development of knowledge working. Competencies and role models, coaching and mentoring, performance management, and a clear articulation of the expectation of ‘knowledge working’, are all used to develop appropriate behaviors. Performance management systems, which link roles to organizational objectives, enable individuals and teams to understand their contribution to corporate goals. Competency descriptions, providing a consistent and neutral language in which to discuss performance, are emerging as a basis for developing knowledge working capability.

Selection and retention policies contribute to the development of a knowledge working capability. Competency based selection, appraisals and reviews are increasingly used to aid the recruitment of people suited to a KM environment; and to ensure that people continue to develop and understand the knowledge working criteria expected of them.

The Learning Organization

KM and the Learning Organization (OL) are natural collaborators. Their approaches may differ at the strategic level but tactics, processes and actions are often similar. In some organizations the OL Director is also the CKO, or has a CKO role within their department; in others the two functions co-exist. Knowledge working is essential to enable an organization to learn, develop and adapt at the speed required by their market. The development of skills and competencies for knowledge working is, therefore, a critical success factor for today’s networked, knowledge intensive organizations.

1 Scope

“The Knowledge Proposition is that significant additional stakeholder value and competitive advantage will be derived if the expertise, information and ideas of employees, partners and customers are continually developed and used in all business and decision-making processes”. (*Knowledge Leaders 2003*) [1]

In 2001 the British Standards Institution published “*Knowledge Management: a guide to good practice*” [2] which provided a practical introduction to mainstream thinking in the field of Knowledge Management (KM), gave an indication of some emerging thinking, and stimulated discussion. Since the publication of PAS 2001 the practice of KM has continued to grow in both the private and public sectors. It is still a relatively new and evolving discipline and is developing under a number of labels, but the experience of senior management in ‘KM organizations’ and of KM practitioners provides a valuable knowledge and learning base.

During the past decade information and communications technology (ICT) has enabled organizations and supply chains to establish networks of diverse participants, often widely dispersed, causing management radically to re-assess ways of working. This Guide looks at the effect that KM and networked working has had on the skills and competencies required in organizations. It illustrates how organizations develop knowledge working through the development of appropriate roles, skills and competencies.

Expertise, information and ideas make up the corporate knowledge base, and people, processes and technology enable knowledge creation, flow and use. The Guide summarizes some of the experience and learning of KM and networked organizations in developing their knowledge base and knowledge flow through people.

Researching the Guide

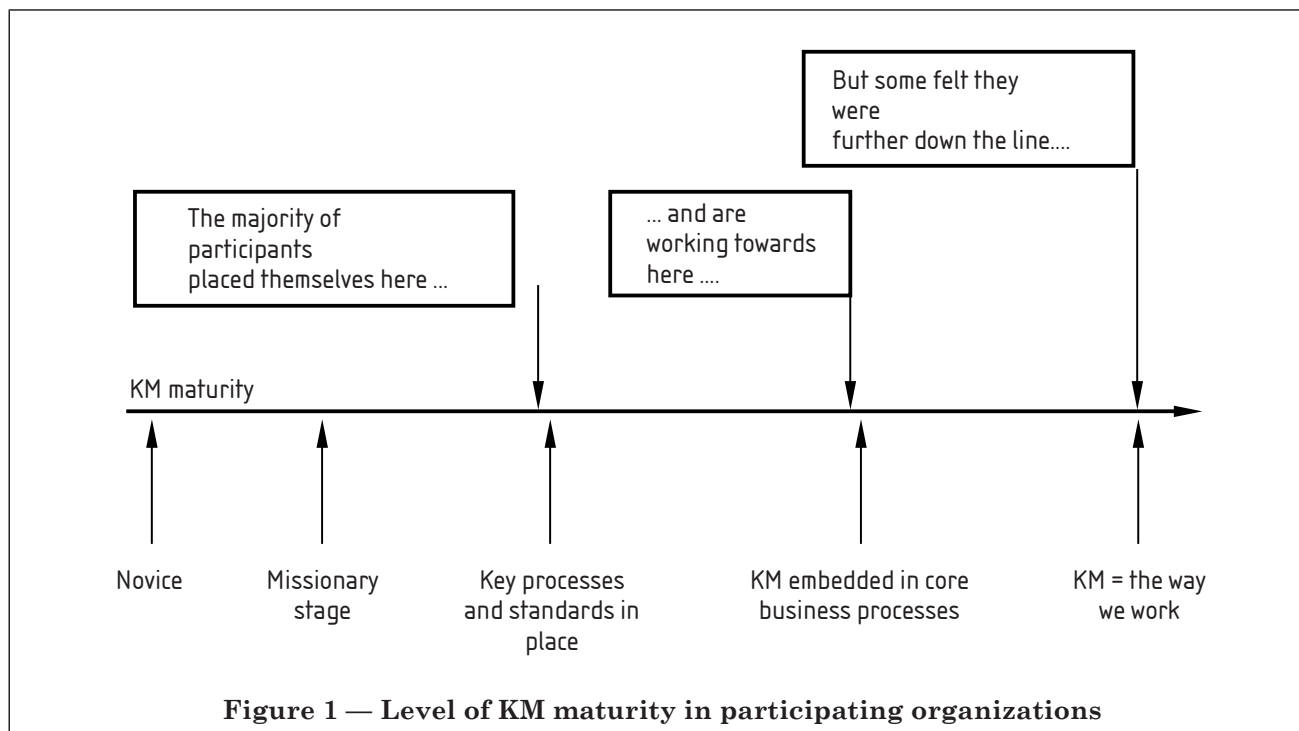
In preparing this Guide we:

- consulted the KM leaders in seventy organizations using interviews, focus groups and workshops;
- reviewed current literature in a wide range of disciplines;
- consulted KM consultants and thinkers; and
- developed a number of short case studies.

In undertaking the research we focused on the roles, skills and competencies that ‘made KM happen’, but as KM is context specific we explored their development against the background of the organization, its corporate objectives and its vision for KM.

The Guide is based on empirical research. It is about people and their skills and, as this is an evolving area, we felt that a statistical research approach was not appropriate. The outcomes of the interviews and workshops are incorporated in the Guide and may help identify the questions that may need to be asked in a future quantitative study.

We noted that a key factor determining the approach organizations take to developing ‘skills for knowledge working’ is their level of KM maturity. So that the Guide would reflect experience rather than theory the organizations selected had all achieved some level of KM maturity (Figure 1).



It is worth noting that those organizations which felt that KM was effectively embedded in the way they worked had reached a position where every 'project' was a 'KM project'. All the criteria for effective knowledge creation, sharing, and management was part of the planning process and was in place from the outset.

The conclusions of the study are contained in the following clauses:

- Clause 5 identifies the roles, skills and competencies of knowledge workers;
- Clause 6 discusses knowledge conscious leadership;
- Clause 7 identifies roles throughout the organization that support effective knowledge working;
- Clause 8 outlines roles undertaken by knowledge specialists;
- Clause 9 looks at the ways organizations are developing skills for knowledge working;
- Annex A provides case studies.

2 Definitions

2.1 General definitions

Definitions for many knowledge management terms are given in PD 7500 'Knowledge management — vocabulary' published by the BSI in 2003. The following definitions apply to terms used in this Guide.

Competencies

combination of skills, experience and behaviours that enable an individual (or a group of individuals) to perform well in their role.

"Competencies are general descriptions of the abilities necessary to perform successfully in areas specified. Competency profiles synthesize skills, knowledge, attributes and values, and express performance requirements" (Public Service Commission of Canada, 1998)

Skills

a special ability in a particular field, acquired by learning and practice (*The Penguin English Dictionary*, 2001)

Informatics

“the use of science, computer science, information and other technologies to provide data, information and knowledge to the individual and the organization” [3]

Informative architecture

“a coherent set of strategies and plans for information access and delivery inside the organization” Gilchrist and Mahon [4]

Information governance

the process by which an organization ensures that it has in place and operates by policies, standards and strategies (with the necessary supporting roles and skills) that determine its ethical use of information, adherence to relevant legislation and information security

Information literacy

is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner. Chartered Institute of Library and Information Professionals (CILIP) web site

Knowledge architecture

strategies, processes, organizational structures (including roles and skills and infrastructure), tools, and procedures that enable and support a collaborative environment and effective knowledge working

Knowledge management

the creation and subsequent management of an environment which encourages the creation, sharing, learning, enhancing, organization and utilization of knowledge for the benefit of the organization and its customers.

(PD 7500 *Knowledge management — vocabulary* BSI, 2003)

2.2 Role related definitions**2.2.1 Roles in informal social networks** [5] (See 5.6.2)

Central connectors, who link most people in an informal network with one another. (See 5.6.3)

Boundary spanners, who connect an informal network with other parts of the company or with similar networks in other organizations. (See 5.6.4)

Information brokers keep the different sub-groups in an informal network together. (See 5.6.5)

Peripheral specialists, to whom anyone in an informal network can turn to for specialized expertise. (See 5.6.6)

2.2.2 Knowledge workers

a generic term that is sometimes used to describe any worker who uses knowledge within their work and sometimes refers to highly skilled professionals. The work of knowledge workers consists largely of converting information into knowledge, using their own competencies for the most part, sometimes with the assistance of suppliers of information or specialized knowledge

(PD 7500 *Knowledge management — vocabulary* BSI, 2003). See clause 5.

Professionals

People whose discipline is based on a recognized body of knowledge and whose skills and expertise in that discipline are generally endorsed by professional body. (See 5.4.1)

Professional knowledge workers

a description of people who are “distinguished by the nature of their work, which requires high levels of knowledge input in a non-routinized manner where the subsequent output results in a product or service within which their knowledge is embedded”. [6] (See 5.4.2)

Knowledge intensive roles: functions whose remit is to collect information and knowledge, make sense of it, draw conclusions, and make recommendations. (See 5.4.3)

Front line staff: those who interact directly with customers or the public. (See 5.4.4)

Support staff: various functions in any organization that support the business. (See 5.4.5)

2.2.3 *Knowledge conscious leader*

people who have the responsibility of ensuring that teams, groups and the organization achieve their objectives and who influence how well knowledge and information is identified, shared and used. (See clause 6)

2.2.4 *Roles supporting a knowledge enabled workforce* (See clause 7)

Knowledge strategists/leaders: people who develop KM strategies for the organization and ensure that KM activities are focused on core business need. (See 7.2)

Knowledge facilitators: are people in roles that have an explicit remit to help their colleagues find, organize, create, use and share knowledge. (See 7.3)

- **Roles supporting communities and networks:** a number of diverse roles recognized as essential to the success of formal communities and networks. (See 7.3.2)
- **Dispersed knowledge facilitation roles:** roles that exist throughout the organization to support knowledge working. (See 7.3.3)
- **Knowledge champions:** people elected to lead the development of knowledge working in their business line, division, function or group. (See 7.3.3.a)
- **Knowledge Managers:** roles whose remit is to ensure that internal and external information and knowledge is accessible, reliable and usable. (See 7.3.3.b)
- **Knowledge navigators and brokers:** roles with the remit of helping people find the knowledge and information they need. (See 7.3.3.c)
- **Knowledge stewards and validators:** roles that take the responsibility for the quality, currency, reliability and security of knowledge created and distributed by the section / business line / department or function. (See 7.3.3.d)

Contributing roles: roles not necessarily identified as part of the knowledge facilitation team but which play a crucial role in knowledge flow and management. (See 7.3.4)

2.2.5 *Knowledge specialists*

people who are specifically tasked with developing and implementing tools and processes to support knowledge working. (See clause 8)

3 Networked organizations

3.1 General

Today's organizations operate in an increasing networked world. Information and communications technology (ICT) has enabled people to connect across distance, time and cultures. A workforce has emerged that has grown up with this connectivity and the exchange of ideas and information with peer groups. Industry sectors are developing networked supply chains where the boundaries between customer and supplier are becoming blurred. Citizens expect rapid, quality services from an efficient and effective public sector. In all sectors networked organizations are become the norm, driven by strategic and operational imperatives.

3.2 Strategic drivers

The strategic drivers for increased networking are essentially innovation and creativity.

"Innovation — the successful exploitation of new ideas — incorporating new technologies, design and best practice is the key business process that enables UK businesses to compete effectively in the global environment" DTI Innovation web site [7].

"The creativity and inventiveness of our people is our country's greatest asset and has always underpinned the UK's economic success. But in an increasingly global world, our ability to invent, design and manufacture the goods and services that people want is more vital to our future prosperity than ever.

Innovation, the exploitation of new ideas, is absolutely essential to safeguard and deliver high-quality jobs, successful businesses, better products and services for our consumers, and new, more environmentally friendly processes". Tony Blair. Foreword to the *DTI Innovation Report*. [8]

The DTI's innovation report suggests seven critical success factors for innovation performance:

- sources of new technological knowledge;
- capacity to absorb and exploit new knowledge;
- access to finance;
- competition and entrepreneurship;
- customers and suppliers;
- the regulatory environment; and
- networks and collaboration.

The DTI report naturally focuses on the need for innovation in the private sector but the American Productivity and Quality Centre (APQC) makes the point in its report "Using knowledge to drive innovation" that "Innovation is important to all organizations in all sectors, whether for-profit, government, or non-profit. In an economy powered by knowledge workers, better use of knowledge can lead to faster, less risky and more vibrant innovation." [9]

All successful organizations recognize that innovative and creative approaches to all aspects of their business — whether it is the development of new products and services, different ways of managing organizations, situations or projects, or fulfilling every day tasks are crucial to their success. Networking fosters the sharing of information and ideas, the raw materials of innovation. Creativity tends to happen 'at the edges' — where people meet (physically or electronically) to exchange ideas and information with those they may not work with on a day to day basis — or when work teams are in situations which stretch their experience. A truly networked organization creates the environment that enables these exchanges as a matter of course, and has the structures in place to enable creative ideas to be developed into innovative actions.

The APQC report [9] identified fifteen detailed over-arching patterns and insights about innovative organizations. These emphasized:

Efficient innovation

Access to information ideas and experience enables individuals and teams to devote their time to build on good ideas and incorporate them into innovative products and processes. Knowledge management can lead to efficient innovation by putting knowledge and information in the hands of people when they need it, enabling the re-use of designs, knowledge and lessons learned thus avoiding mistakes.

Centrality of information technology and repositories

IT and databases play a strategic role, with a focus on tools and content that support virtual and distributed teams and provide access to information by partners and other external stakeholders.

Building social capital and spanning boundaries

Enabling people to contact others, developing a culture that encourages collaboration, helping people to connect, expertise to be located and knowledge to flow across boundaries, through communities of practice, learning networks, etc.

Human resources practices

The people in an organization build the environment for knowledge sharing and innovation so hiring and selection processes and reward and recognition systems are key.

External collaboration

Information and knowledge sharing with partners, suppliers and customers is vital — so external networks play a key role in innovation.

3.3 Operational drivers

The operational drivers include:

- a) Speed in communication, market response and delivery.
- b) Quality, reliability and accountability — meeting the expectations customers, financial stakeholders, regulators and suppliers.
- c) Effective partnerships and alliances; mergers and spin-offs — enabled by connectivity afforded by ICT, required by new ways of working across the supply chain and by government ambitions for ‘joined up government’.
- d) The support of a mobile workforce as ICT enables employees to work from client sites, from different office locations or from home, and within a 24/7 timeframe; and as individuals frequently move between roles and between employers.
- e) The death of distance. Globalization, undoubtedly facilitated by ICT, has enabled organizations to develop divisions and teams that span different geographical boundaries and a number of organizations. Whilst ‘globalization’ implies connections across national boundaries connectivity, and the speed at which decisions can be made and information exchanged, enables national, regional and local organizations to operate effectively across distances. People in remote locations can work on the same document or design; participate in collective discussions; and share ideas with people they may never meet.

4 Developing networked organizations

4.1 The characteristics

A recent article by Lindenfield [10] identifies the features of organizations with good internal networks . Firstly subject matter experts are identified and accountable. These are individuals who have the responsibility for certain information/topics. They are not necessarily senior — but they are people to whom anyone can turn to for support in their area of responsibility. Secondly, there will be a good internal communication network providing a platform for sharing and developing ideas and providing access to subject matter experts. Thirdly, questioning will be positively encouraged. Fourthly, networks will include a broad cross section of locations and individuals.

He cites Harley-Davidson's experience of the benefits of networks.

Harley-Davidson Inc

Harley-Davidson Inc, which this year celebrated its 100th anniversary, was recently granted the 2004 Catalyst Award for developing a culture of empowerment through diversity and collaboration. In the same quarter it also announced record revenue and earnings, posting a 4.7 % revenue increase and an 11.5 % increase in diluted earnings per share (EPS) over the previous year's performance.

According to Jeffery Bleustein, chairman and CEO, they are “on track to deliver both the short and long term performance objectives of the company”. Experts attribute much of Harley-Davidson's recent success to the flattening by Bleustein of the company's organizational structure and the implementation of ‘Business Circles’.

These ‘Business Circles’ are mini-networks which employ a consensus based decision-making model in which key accountabilities are held by subject matter experts. The purpose of ‘Business Circles’ is to:

‘Encourage consultation, collaboration and a highly inter-dependent culture across functional boundaries, giving employees opportunities to demonstrate and gain recognition for their talents and contributions.’

The ‘Business Circles’ deployed by Harley-Davidson to achieve these impressive results are a great testament to the impact of a now embedded networked organizational structure and philosophy that is reinforced by the commitment of its leaders.

4.2 Development

The development of network organizations is not without its challenges.

- Their development requires a long term view and employees need to feel some degree of stability and top level commitment if they are to commit their time and energy to building and participating in networks. But the dynamics of the market place requires that the organization reacts and changes swiftly to meet performance targets.
- The perception of risk is increasing. Corporate governance has been strengthened to protect stakeholders, and regulation is increasing the risk of litigation. Reputation and brand have become the most valued assets.
- The formation of alliances and partnerships bring challenges of interaction between different cultures and ways of working.
- Within this environment information flows continuously and relentlessly. Many individuals already feel overwhelmed by the volume of information they need to deal with and feel that active networking will add to information overload and time pressures.

These issues mitigate against the development of truly networked organizations. The participants in the survey supporting the preparation of this Guide belong to 'networked organizations' but they differentiated between working via networked technology and working in an environment that supported working with networks of people. All felt that their organizations had well developed technical networks but only some felt that they were truly networked organizations. Where true networks are effective

- the structures have been built to accommodate cross boundary working and formal and informal networks; they had been developed over time and plans were in place to continue development;
- support for networking came from the top and was reflected in recruitment policies;
- networking was, in effect, a way of working.

4.3 Building a corporate capability for knowledge working

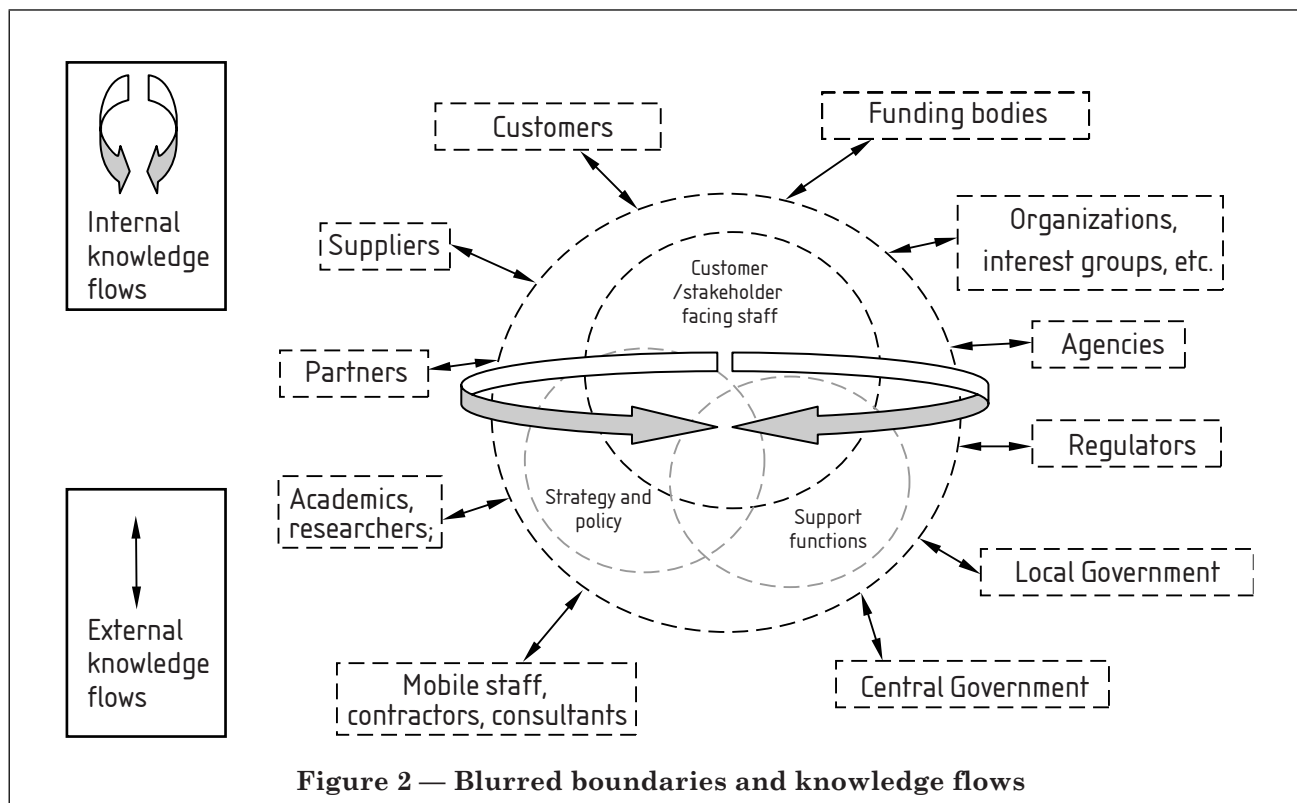
Business imperatives such as survival, corporate governance, globalization, new business models, employee mobility and customer expectations are demanding the attention of all senior management. Hubert Saint Onge, one of the early champions of KM, argues that KM is about the development of corporate capability — the ability of the organization to develop and lead its market, to provide its customers with quality service and products, to innovate, adapt and change. Corporate capability is the integration of:

- Strategy: the goals of the organization and ways it seeks to serve them;
- Structure: the grouping of accountabilities; structures that define the position of the relationship between members of the organization;
- Systems: the way in which processes (information, communication, decision making) and flows (products/services and capital) proceed; and
- Culture: the combined sum of the individual opinions, shared mindsets, values and norms.

Successful development of this capability is dependent on:

- the organization's understanding of the way these elements interact;
- the tools available to enable their integration;
- the roles, skills and competencies that make up the core competence; and
- the ways in which this competence is developed.

The key resource in this capability is the people who make up the organization. Their world is complex. Many internal groups, teams and networks need to interact and work together in a way that looks seamless to the outside world and feels seamless to the participants. These staff are the corporate interface with the external world, regularly engaging with customers, partner organizations, suppliers, central government and its agencies, local authorities and interest groups, regulators and the suppliers of finance, etc. All staff, whether explicitly customer facing or in development or support functions, contribute to the flow of knowledge and information between the organization and the external world (Figure 2).



The report 'People and performance in knowledge-intensive firms' published by the Chartered Institute of Personnel and Development (CIPD)[11] suggests "there are three knowledge-intensive situations that are critical to the success of an organization. These are:

- Developing individual knowledge and skill
- Sharing this knowledge within the organization
- Sharing this knowledge with other parties, including clients, partners and suppliers."

4.4 Knowledge and information flows

4.4.1 General

In all organizations, at all levels, and in all functions a flow of information and knowledge is vital. The ability to effectively share information and knowledge within the organization, and between the organization and the external world, is a critical to achieving business objectives. Most organizations have developed, or are developing, ways of improving internal and external knowledge exchange, increasingly using the Web and other ICT platforms to publish, collect and exchange information.

4.4.2 Knowledge and information flow with customers

Government targets for electronic government have influenced this drive in the public sector. Central and local government aim to communicate more effectively with citizens, provide easier access to their services, and to enable their communities to more easily influence decisions taken and future policy. In the private sector organizations are developing processes for tracking, collating and using intelligence about their market place by improving the feedback loops from customer facing staff. An objective for all organizations is to maximize the flow of knowledge between themselves and the customer, and many use technologies to achieve this objective and to provide additional 'value added' services for their customers.

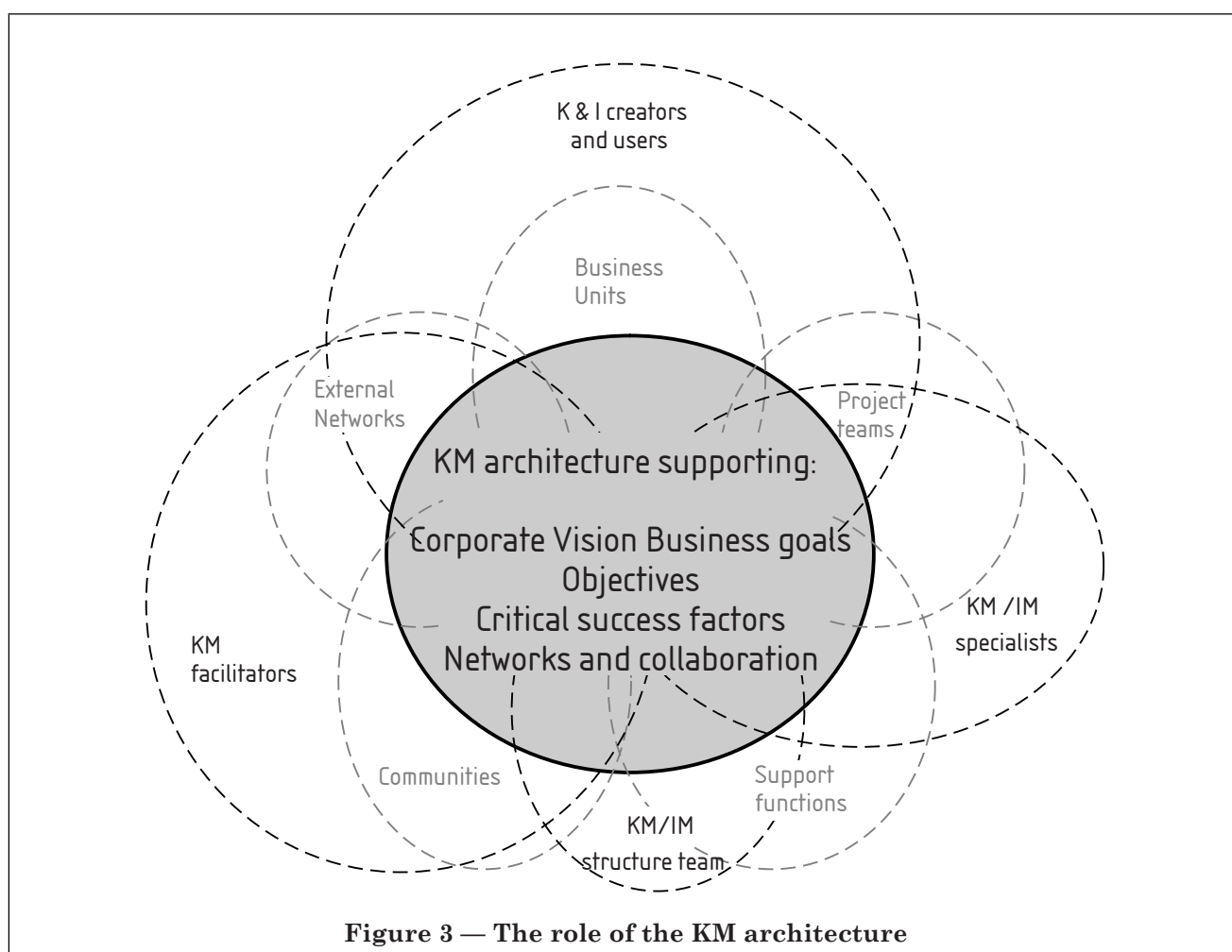
4.4.3 Knowledge and information flow between organizations

Information flow between organizations is at the core of the networked economy. In the public sector a complex mix of institutions provide inter-related services to support learning and development, health and social welfare, the economic infrastructure and the legal system. All need to exchange information. The private sector exchanges information with partners in the supply chain, financial backers and customers, and with the public sector organizations that regulate and support it. But it is not a simple process.

Regulation to protect the rights and privacy of individuals; the implications of corporate governance and corporate responsibility; commercial confidentiality; and the ability of people to select and interpret information all contribute to making information exchange a complex and challenging task. Orchestrating knowledge flows brings additional challenges. Close working relationships between different organizations and groups means that the ownership of knowledge — intellectual property — becomes an issue, and the closer the relationships the more difficult it becomes to understand who ‘owns’ the knowledge.

4.5 Knowledge architecture

Creating and sustaining corporate capability requires a knowledge based environment and a climate of continuous learning. Clearly structures and processes are required that enable individuals to work productively, feel confident about the knowledge and information they exchange, and which help them to build good working relationships. The organization needs a ‘knowledge architecture’ that develops the culture, tools, rules and processes that support a collaborative and sharing environment. It is an architecture that underpins the key goals of the organization (Figure 3).



Organizations have approached the development of this architecture in a number of ways. Large global companies tend to develop top-level global KM policies within which local areas and business lines develop their own strategies and KM activities. This approach is one of orchestrated co-ordination underpinned by core principles and infrastructure. It may be initiated from the centre but often it has evolved from a critical mass of local initiatives that are consolidated and developed. In some cases the organization may mandate a KM approach but leave individual businesses, functions or geographies to determine their own strategies. For example, the National Health Service has KM strategies and leaders within the Department of Health and within its different service delivery, development and support functions (such as the National Knowledge Service, Primary Care Trusts etc). Similarly, Oracle Senior Management recognizes KM as essential but does not attempt to control the KM organization.

The organizational structure affects Oracle's approach to KM. The Divisions all have KM directors although these are not identical roles. Some have dual responsibility; some divide the responsibility between a number of people and some large centres, such as EMEA, have full time KM leads. The KM Directors work as a corporate committee, forming both a group of KM thoughts leaders and a joint decision making body. All the major Divisions have KM projects in place and major Divisions have some linked and coordinated projects. But each Division has its own priorities and will initiate projects to meet its requirements.

Smaller organizations tend to favour the appointment of a KM leader, or group of leaders, who determine who should be involved in the development of a collaborative KM approach across different parts of the organization. In many cases the direction of KM is undertaken by a senior executive with a role particular relevant to the KM approach being followed. For example in the Higher Education Funding Council for England (HEFCE) the Head of Organisational Development is now directly responsible for the promotion of KM in HEFCE.

4.6 Supporting knowledge working

Knowledge workers need support from different disciplines and functions and there are many approaches to providing this support. Some organizations, for example, pull together a number of related functions — such as information management, information services, learning and communications — to form a central KM department. Essentially there is a need for a multidisciplinary support group. This may be provided by people with explicit KM roles or by people whose primary activities are not labelled KM but which are aligned to knowledge working. Some people providing this support will have explicit KM roles, some will not. Table 1 illustrates where KM responsibilities lie.

Table 1 — KM responsibilities

Activity	Responsibility
Vision, championship, leadership	Board/top management
Strategy and leadership	Knowledge strategists/leaders — senior management
Planning and implementation	K strategists/leaders — K specialists — core team
Facilitation of knowledge work	K facilitators
Day-to-day knowledge activities	Everyone — organization wide
Communities of Practice/networks	Knowledge facilitators/everyone
Knowledge architecture	Core team/knowledge facilitators
Content management	Core team/knowledge facilitators
Knowledge resources/hubs	Core team/knowledge facilitators

To build this multidisciplinary support it is necessary to understand the different roles and competencies that contribute to the KM architecture. The challenge for senior management is to:

- understand the nature and value of 'knowledge' — expertise, information and ideas;
- stimulate its creation and use so that the organization learns from, and builds on, experience;
- protect intellectual capital without stifling creativity;
- ensure that the organization meets its regulatory, ethical and social responsibilities.

For these reasons, despite healthy scepticism, 'knowledge management' — in various guises and with many labels — has influenced organizational development. Building a healthy and accountable knowledge based organization requires a critical look through a 'knowledge lens' to understand the knowledge capabilities required. The organization has to ask itself:

- What does the organization need to know to succeed in its aims?
- What information does it need to support the knowledge?
- How do people need to interact to use information and knowledge?

Many organizations have started a KM journey, and many more are actively considering how to start. The KM arena is now made up of early adopters, followers, consolidators, re-entrants, embedded KM organizations and toe-in-the-water organizations.

David Snowden, one of the leading exponents of complexity theory and ‘organic’ knowledge management, argues for “a ‘third generation’ or ‘third way’” for KM. This ‘third way’ focuses on employing and exploiting traditional human knowledge building instincts and behaviours, rather than concentrating on knowledge capture and containment. He argues that “‘knowledge’ is a flow, rather than a confinable commodity, in need of channelling and divining rather than control” [12].

4.7 Skills for networked, knowledge intensive organizations

Behavioural challenges are the current focus of KM as organizations seek to create knowledge friendly environments. David Snowden summarizes this challenge as follows:

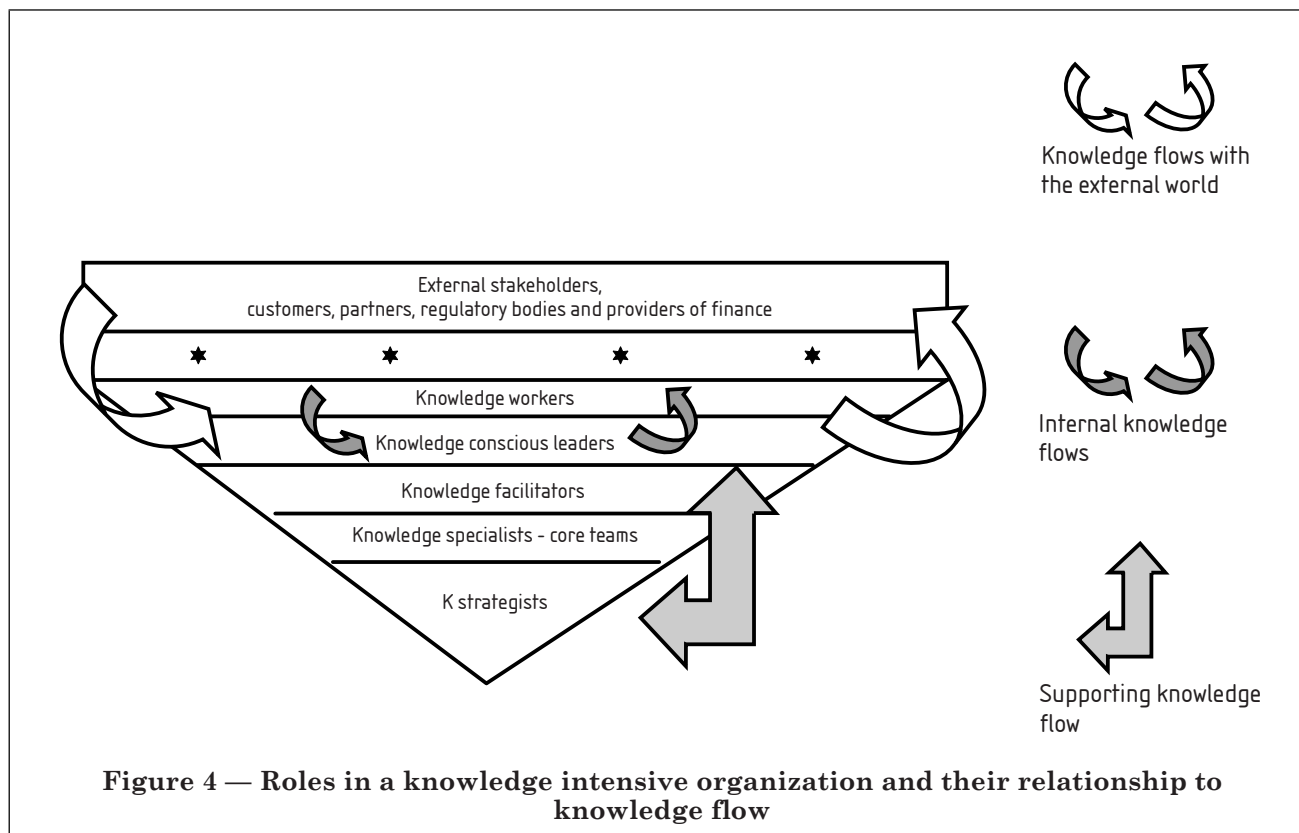
- a) *Knowledge can only be volunteered; it cannot be conscripted* — Unless the conditions are right people will only let slip what they wish to disclose, and will often only provide the minimum amount or inferior grade ‘knowledge’ required for compliance when forced to ‘share knowledge’ as the KM mantra often exhorts.
- b) *We can always know more than we can tell, and we will always tell more than we can write down* — The amount of knowledge that can be codified into abstractions (e.g. a textbook or written procedure, a ‘know how’ database or best practice) is restricted by time and the ability to express complex instincts in a common language understandable to an audience.
- c) *We only know what we know when we need to know it* — Knowledge is contextual, i.e. it only rises to the surface or can be captured when required or in reaction to an appropriate stimulus or set of conditions, which may relate to a shared history, environment, or situation.

The critical success factors (CSFs) for today’s organizations include excellent networking capabilities and the ability to create, apply and manage of knowledge. Clauses 5 to Annex A explore the roles and skills that make up those CSFs in more detail.

5 Knowledge workers — roles, skills and competencies

5.1 General

“While specialists are clearly critical to the success of knowledge management, even more important are the activities and attitudes of those who are paid to do something other than management knowledge. Planning managers, business analysts, design and manufacturing engineers, marketing professionals, and even secretaries and clerks are the most important managers of knowledge. They all need to create, share, search out, and use knowledge in their daily routines. In this sense knowledge management is part of everyone’s job” *Davenport and Prusak, Working Knowledge* [13]

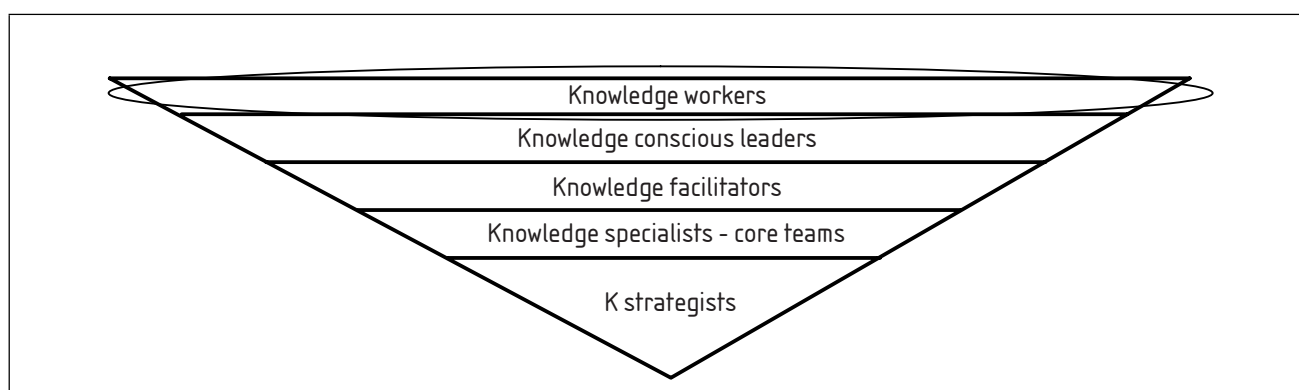


As noted at the beginning of the Guide it is the development and use of the expertise, information and ideas of all employees, partners and customers that provides stakeholder value and competitive advantage. In this scenario all employees are knowledge workers. Networked organizations require everyone to recognize their role in the creation, sharing and use of knowledge. The respondents to the survey underpinning the Guide agreed with this assertion:

- “There is a knowledge responsibility in all roles”
- “KM activities are main stream to everyone’s role”
- “Customer Relationship Management (CRM) depends on everyone”
- “All staff have knowledge transfer responsibilities”
- “KM is a key part of everyone’s role”

The structure of the roles and their relationship to knowledge flow and utilization within and between organizations is shown in Figure 4.

5.2 Knowledge workers



Knowledge workers are all those people whose functions facilitate the main business or activity of the organization. Their roles are explicitly aligned to the business processes that enable the organization to provide products and services to their clients and many will have regular interaction with clients and partners. In knowledge intensive firms the majority, if not all employees can be considered knowledge workers

Newell et al. in their book 'Managing knowledge work' [14], say that:

"All work requires the application and use of some knowledge, however simple the task, and we have argued that the rise of knowledge work cuts across occupational groupings." And (in knowledge intensive organizations), "the majority or even the whole of the workforce consists of knowledge workers."

The interaction between people and teams, between dispersed locations and partners requires appropriate knowledge sharing behaviours and attitudes. It also needs an understanding of the means of finding, creating and managing knowledge within structures and constraints appropriate to their organization.

"In most cases one can observe only the products of knowledge work — reports, designs, decisions made — not the process of creating them. Much of the work of finding, interrelating and connecting relevant pieces of information, negotiating meanings and eliciting knowledge in conversations with others, creating new ideas and using them to come up with the final product, happens in the head of a knowledge worker or as part of communication or working." [15]

5.3 Characteristics of knowledge workers

"Professional knowledge workers have the following specific characteristics:

They need to apply highly structured technical knowledge to ambiguous client demands.

They work in an autonomous fashion within fluid leadership structures.

They are normally ambitious and upwardly mobile, and their key focus is the development of their careers" (Swart and Kinnie, 2004) [6]

".... Knowledge work is understood to comprise the creation of knowledge, the transmission of knowledge, and the acquisition of knowledge. Each of the activities is seen as discretionary behaviour. Employees are likely to engage in knowledge work to the extent that they have the (a) ability (b) motivation (c) opportunity to do so. The task of managing knowledge work is focused on establishing these conditions." (MacNeil) [16]

However they are described, the employees of networked, knowledge-based organizations need a range of abilities to enable them to operate effectively. Technology has exponentially increased the amount of information they handle and exchange, the speed at which they need to work, the opportunities for networking and the ability to work across boundaries — whether geographies, organizations or teams. Technical developments such as Electronic Document and Records Management Systems, Customer Relationship Management and Web publishing, require employees to continually learn new skills and ways of working. Compliance with corporate and information governance requires everyone to understand and comply with the processes and tools developed to protect the organization and its clients.

Successful organizations have/employ people who are creative and flexible, with the ability to work with different cultures, and who contribute to continually improving the customer's experience. Today's knowledge workers need to be able to handle complex information, be able to develop networks and networked relationships, develop continuous learning capabilities, and contribute to knowledge creation, use and sharing. They should also operate within the regulatory, ethical and operational rules and standards that make up their corporate environment. The concept of "bricolage" illustrates the type of thinking and approach required. "Bricolage in the modern sense can be defined as a kind of inventiveness, an ability to improvise a solution to a problem without proper or obvious tools or materials. *Bricoleurs* are always tinkering — building radios from household effects of fixing their own cars. They make the most of what they have, putting objects to unfamiliar uses." [17] Resilient organizations are able to improvise and provide the structure in which this can happen as the USP example demonstrates. When Hurricane Andrew devastated southeast Florida in 1992, UPS drivers still found a way to deliver packages — even to victims living in their cars. Resilient people know how to make do with what's at hand when turbulence arrives.

UPS

UPS empowers its drivers to do whatever it takes to deliver packages on time. Says CEO Eskew: 'We tell our employees to get the job done. If that means they need to improvise, they improvise. Otherwise we just couldn't do what we do every day. Just think what can go wrong: a busted traffic light, a flat tire, a bridge washed out. If a snowstorm hits Louisville tonight, a group of people will sit together and discuss how to handle the problem. Nobody tells them to do that. They come together because it's our tradition to do so.'

That tradition meant that the company was delivering parcels in southeast Florida just one day after Hurricane Andrew devastated the region in 1992, causing billions of dollars in damage. Many people were living in their cars because their homes had been destroyed, yet UPS drivers and managers sorted packages at a diversion site and made deliveries even to those who were stranded in their cars. It was largely UPS's improvisational skills that enabled it to keep functioning after the catastrophic hit. And the fact that the company continued on gave others a sense of purpose or meaning amid the chaos.

Improvisation of the sort practiced by UPS, however, is a far cry from unbridled creativity. Indeed, much like the military, UPS lives on rules and regulations. As Eskew says: 'Drivers always put their keys in the same place. They close the doors the same way. They wear their uniforms the same way. We are a company of precision.' He believes that although they may seem stifling, UPS's rules were what allowed the company to bounce back immediately after Hurricane Andrew, for they enabled people to focus on the one or two fixes they needed to make to keep going.

The rules and regulations that make some companies appear less creative may actually make them more resilient in times of real turbulence.

(Excerpted with permission from "*How resilience works*" Harvard Business Review, May 2002.

5.4 Examples of knowledge workers

5.4.1 Professionals

People whose discipline is based on a recognized body of knowledge and whose skills and expertise in that discipline are generally endorsed by a professional body. The professional body will generally set standards of achievement, accredited academic courses, outline requirements for continual professional development (CPD) and uphold a code of ethics. Examples are accountants, medical practitioners, engineers, lawyers, etc.

5.4.2 Professional knowledge workers

These roles include fee earners, research and development staff, software developers, public relations and communication.

Examples

Fee earners. No matter what the discipline, people earning fees from clients are valued for their ability to apply the collective knowledge of their organization, and their personal knowledge and expertise, to a client's problem. Their abilities build the corporate reputation and supply the revenues. Law and consulting firms are a prime example of those organizations. The processes or methodology they use may range from the very proscribed and controlled to an innovative approach to each problem. But whatever the case they are applying what they know in the most effective way they can, and while they are doing so they are learning. Probably one of the main motivators for people in this type of role is the opportunity for continuous learning and updating of expertise. It is the continual integration of that learning into the corporate knowledge base that makes a fee earning organization or department successful. However, there are potential barriers to building this knowledge base:

Fee earner reward systems are generally based around fees earned;

Their status is based on how much they are in demand by clients or project teams;

Time is always the essence there is always the next project to win.

There is a tension between the corporate need to share knowledge and learning and the individual's need to demonstrate personal effectiveness and to meet targets. Many KM activities focus on building knowledge sharing into the life cycle of projects to overcome this problem.

Research and development staff. Staff working in development areas, typically research and development departments, product development, innovation centres, etc, are often perceived as the true knowledge workers. Their function is to explore and gain knowledge and to apply this for the benefit of the organization. They and their environments are very varied, but as individuals they are likely to be those who enjoy ‘finding out’ and developing solutions. The challenge for many organizations is to provide an environment where different disciplines can meet and exchange ideas — whether virtually or physically. These staff are happy to exchange and build on knowledge but they also have to prove themselves as individuals or teams, inevitably have targets to meet, and are generally short of time. Reward and recognition systems need to reflect the time needed for exploring and sharing ideas.

5.4.3 Knowledge intensive roles can be seen as knowledge intermediaries

Their primary role is to mix information and intelligence with their own expertise to make recommendations, plan campaigns and advise on strategies. These include market analysts, competitive intelligence specialists and strategic planners.

Examples

Strategy and policy: Staff working in strategy and policy are prime examples of knowledge workers. Their role is to assess intelligence and recommendations and make decisions. They process and monitor knowledge and mix it with their own expertise, judgment and knowledge to develop policy and strategy.

Marketing, Planning, Communications, Competitive Intelligence: These are all functions whose remit is to collect information and knowledge, make sense of it, draw conclusions, and make recommendations. They can be seen as knowledge intermediaries and their primary role is to mix information and intelligence with their own expertise to make recommendations, plan campaigns and advise on strategies.

5.4.4 Front line staff

As customer focus becomes the critical success factor for all organizations front line staff play a crucial role. These roles are wide-ranging, including front desk staff and call centres, sales and field staff, and cover all levels of seniority and experience, from novice to senior managers.

One of the early KM objectives of Buckman Laboratories was to ensure that 80% of their staff were client facing.

The roles of front line staff are often closely defined with strong time and resource constraints. Their performance is often closely monitored with an emphasis on consistency and revenues rather than innovation. Liability is an issue for all organizations and to minimize this risk the training of front line staff is often highly structured and their processes controlled. But effective front line staff need a constant flow of information and knowledge. They need, for example, access to product or service information, a detailed knowledge of the organization, the latest updates and news, and legal and compliance information. The challenges for management then are how to ensure that current and relevant knowledge is available to front line staff and how to ensure that it is used consistently.

Front line staff are also well placed to gather market intelligence. They are the bridge between the organization and the market place and often have good knowledge of customer needs and complaints. They can spot trends in demand and ways in which customer service can be improved.

One of the objectives of the British Council’s KM programme is to create a bridge between the organization and the customers.

The challenge is to ensure that the knowledge they acquire on a daily basis is effectively fed into the organization and shared. Knowledge management initiatives for these staff aim to deliver benefits that include:

- improving customer service and satisfaction through consistency of advice and information and efficiency;
- improving staff satisfaction, reducing staff turnover and preventing loss of knowledge when staff leave;

- increasing sales and improving marketplace intelligence;
- reducing legal exposure and risk and developing greater consistency of processes;
- reducing customer support costs.

Xerox focused on knowledge and expertise of service engineers around the globe and built a process and tool that enabled them to share tips and experience gained through day to day work. The Eureka project was designed round the way that service engineers worked as informal communities in their localities and scaled this to form a global community supported by a practical IT tool.

5.4.5 Support functions

Support functions often have continuous contact with clients, suppliers and partners and handle a steady flow of information. Although they are often task orientated, they frequently make decisions based on their judgement and develop a particular knowledge of the business and its market.

5.5 Skills and competencies for networked knowledge workers

5.5.1 General

Current literature identifies the strategic impact of the skills and competencies of staff in networked organizations, a theme that was endorsed by the Survey. In an article on creating high performance, the authors suggest that a high performance environment (HPE) needs 'real' high performers: "those people delivering the performance that the organization is ultimately judged against". HPEs require performers to possess the following:

"High performance capacity — which includes not only the necessary job-related skills and knowledge, but also skills that enable them to thrive on pressure. Mental toughness and emotional intelligence are particularly important in this respect.

High performance belief and attitudes — involving high levels of commitment to the organization and also beliefs and values that are closely aligned with those of the organization.

High performance behaviours — the key ones being the ownership, responsibility, intra- and inter-teamwork and voluntarily assuming extra-role contributions that serve to support their fellow performers".[18]

Lindenfield, in an article on the networked organization, suggests that there are five critical qualities of good networkers [10]:

- Sound self awareness
- Genuine concern for other people
- Unashamed (or assertive) humility
- Persuasive energy; and
- Calculated courage.

Networking has emerged as a core competence in today's organizations and participants in the survey identified a number of skills required for successful networking (Table 2).

Table 2 — Networking skills required identified by interviewees

Ability and willingness to learn	Leadership
Ability to see the big picture	Listening skills
Able to accept change	Networking
Accountability	Openness
Business awareness and understanding	Ownership
Coaching	Partnership
Collaborates with others	Personal effectiveness
Communication	Problem solving
Courage	Responsibility
Customer orientation	Self awareness
Flexibility	Sharing — information, knowledge, ideas
Humility	Team working
Information literacy	Uses knowledge effectively
Interpersonal skills	

The participants also believe that the mix of skills required for knowledge working closely resemble those networking skills. All staff need to keep their job related skills (professional, technical or administrative) refreshed and up-to-date, and be prepared to develop new skills. The climate of life long learning is very real. Added to this they need a mix of business skills (some organization specific), attitudes and behaviours that enable them to participate fully in, and contribute to, the corporate knowledge capability.

The key competency sitting above these skills is an overall understanding of the value of knowledge and information to the organization, the work group and the individual. It is this understanding that makes the difference between an individual paying lip service to knowledge processes — doing what can be monitored and measured — and making a real contribution to the organization's knowledge base. Individuals who understand how knowledge and information impacts on the success of their own activities, and those of colleagues and the organization, are half way to taking responsibility for their own contributions to corporate knowledge. But this understanding has to be complemented by a sympathy with corporate values and a belief that the organization really does believe in the values it preaches.

A consolidation of the key skills and competencies identified by the survey participants as required for successful networking and for knowledge working suggests fifteen top skills for networked knowledge workers (Table 3).

Table 3 — The top fifteen Skills for Knowledge Working

The top 15 skills and competencies for networked knowledge working	
Ability and willingness to learn	Leadership
Accountability, ownership, responsibility	Networking
Business awareness and understanding	Openness and Trust
Collaborates with others	Organizational awareness
Communication	Self awareness
Flexibility	Sharing — information, knowledge, ideas
Information literacy	Team working
Interpersonal skills	

These skills are finding their way into competency frameworks, dictionaries and enablers that are beginning to underpin the development of roles in all organizations. The Higher Education Funding Council for England (HEFCE) has developed a set of key enablers that set out what is expected from all staff (see Table 4, Table 5, Table 6 and Table 7).

Table 4 — HEFCE key enablers — Knowledge and Learning

Knowledge and Learning		
Gains, develops and effectively shares skills, knowledge and information for the benefit of the Council's mission, others and self		
1. Makes time for personal development and learning.	5. Seeks opportunities to coach others and support them in their learning.	8. Contributes time, knowledge and expertise to corporate activities responsibly, willingly and actively.
2. Actively takes responsibility for finding out information.	6. Values others' contributions and builds their confidence	9. Takes responsibility to obtain develop, organize and share knowledge and information that may be of use to others, ensuring that it is accurate and up to date.
3. Applies what has been learnt, and obtains feedback where appropriate.	7. Staff responsible for enabling others to promote their learning and development. This includes supporting them in the application of learning in the workplace and the evaluation of outcomes.	
4. Evaluates work undertaken and learns from the experience.		

NOTE Elements 1, 2, 3 and 4 primarily impact on 'self'; Elements 5, 6 and 7 primarily impact on 'others' (internal and external); Elements 8 and 9 primarily impact 'corporately' (internal and external).

Table 5 — HEFCE key enablers — Planning

Planning		
To plan activities making optimum use of resources (e.g. time, money, people and the environment) in achieving desired results and in managing risks. To monitor, adapt and evaluate the process and result, sharing the lessons learnt as appropriate.		
1. Plans and prioritizes tasks successfully, (taking account of others' needs, as well as own).	4. Resolves competing priorities within the resources available, and in the light of others' priorities and work life balance.	7. Contributes positively to thinking and discussions concerning longer term issues affecting one's area of work and the Council
2. Takes account of foreseeable risks.	5. Where appropriate, effectively uses project management tools and approaches (as described on the project management network Councilnet site).	
3. Evaluates outcomes and adapts future plans in the light of the learning.	6. Staff responsible for enabling others effectively plan and delegate work, taking account of the needs of the business, overall workloads and colleagues' development needs.	

NOTE Elements 1, 2, and 3 primarily impact on 'self'; Elements 4, 5, and 6 primarily impact on 'others' (internal and external); Element 7 primarily impact 'corporately' (internal and external).

Table 6 — HEFCE key enablers — Communication

Communication		
To provide and receive information in an effective manner. Communications are fit for purpose (e.g. timely, the right method for the occasion and contribute constructively to debate)		
1 Is aware of the way you communicate and its impact on others, and adapts style, as necessary, resulting in effective communication.	4. Speech is clear, concise, of appropriate complexity and tailored to the audience(s). Content of speech is accurate	7. Staff responsible for enabling others foster effective two way communication channels, characterized by two way feedback and openness.
2. Manages own time to allow opportunities for effective communication with others.	5. Writing is clear, concise, of appropriate complexity and tailored to the audience(s). It follows house style and uses correct grammar. The content of writing is accurate.	8. Communicates to all parties in a way which creates a positive impression of the Council.
3. Actively listens, showing sensitivity to the needs of others and the context.	6 Is approachable to others.	

NOTE Elements 1 and 2 primarily impact on 'self'; Elements 3, 4, 5, 6, and 7 primarily impact on 'others' (internal and external); Element 8 primarily impacts 'corporately' (internal and external).

Table 7 — HEFCE key enablers — Relationships

Relationships		
To treat everyone with respect. To be as open and honest as we can, and sensitive to others' goals and needs. To engender trust and respect from others, balancing others' needs with our own.		
1 Is aware of how one prefers to relate to others and, where necessary, adapts personal style to achieve the best results	4. Pro-actively seeks to build relationships, enabling others to work well	6. Contributes to relationships in ways which create a positive impression of the Council.
2. Takes into account others' perspectives.	5. Staff responsible for enabling others take steps to develop effective relationships with them, taking account of their different needs and personalities.	7. Uses a partnership approach where appropriate.
3. Negotiates optimum outcomes and secures understanding from those with whom one may not agree		

NOTE Element 1 primarily impacts on 'self'; Elements 2, 3, 4 and 5 primarily impact on 'others' (internal and external); Elements 6 and 7 primarily impact 'corporately' (internal and external)

5.5.2 Information literacy

Although many of the skills identified are finding their way into competency frameworks, a key skill missing from most of them is information literacy.

The Chartered Institute of Library and Information Professionals (CILIP) definition implies that to be information literate the skills required include an understanding of:

- a need for information
- the resources available
- how to find information
- the need to evaluate results
- how to work with or exploit results
- ethics and responsibility of use
- how to communicate or share your findings
- how to manage your findings.[19]

It is the ability to:

- understand the information required and frame appropriate questions,
- find, evaluate and analyse information from a number of sources,
- create information in such a way that others can use it,
- analyse and use information effectively, and
- distribute and share information appropriately.

The majority of participants felt that information literacy is often poorly developed in the workplace but organizations are beginning to address the problem. The Improvement and Development Agency (IDeA), for example, developed a Working Smarter programme, the Inland Revenue has introduced an analytical thinking module into their induction programme for trainee tax inspectors, Unilever R&D have an established information literacy training programme, and various parts of the National Health Service are targeting the development of information literacy skills among staff and patients.

These training programmes all target some or all of the skills shown in Table 8

Table 8 — Information Literacy Skills [20]

<i>Value</i> Understanding the organization and its context Understanding how decisions are made Understanding key business processes and supporting processes Understanding how your work relates to others, what information you need and what you create Understanding who uses the information you create and the information needs of others Understanding information and knowledge flows that support the business	<i>Create</i> Commissioning: understanding the potential audience; identifying the most appropriate people to create information Capturing, identifying and summarizing key points from a variety of sources Writing and editing: making information easy to absorb by writing with the audience in mind; knowing when to use editing and proof reading expertise Designing the information product: selecting appropriate formats for audience and content Updating: keeping published information relevant and reliable; understanding updating mechanisms Able to use the tools for creating information
<i>Find</i> Analysing and defining the information required and evaluation criteria Understanding the range of internal sources, including expertise, available and being able to use them Understanding the range of external sources, including expertise, available and how best to use them Selecting and evaluating information: assessing quality, reliability and relevance Keeping up to date Able to use the tools or identify the routes to finding information	<i>Use</i> Critical appraisal: evaluating, prioritizing and identifying the significance of information Analysing: making inferences and deductions from various types of information Interpreting: understanding the significance of information Synthesizing: translating, rationalizing drawing implications, making recommendations Identifying when information could be re-used in future or a similar context; using processes to enable re-use Understanding and being able to use the tools that enable the use of information
<i>Organize</i> Email management: applying corporate guidelines and policies, email etiquette, email functions; File management: applying corporate guidelines Coding: understanding and using corporate codes e.g. indexes, taxonomies etc; assigning creation and ownership details Storing and discarding: understanding and using corporate policies and retention schedules; selecting appropriate storage methods Protecting and regulating: understanding corporate and personal information security issues, applicable regulation, e.g. data protection, copyright, Freedom of Information etc. Able to use the tools for organizing information	<i>Share</i> Understanding when it is appropriate to 'share' and the conditions for sharing Understanding the value of what you know Understanding the information needs of others Using effective sharing techniques: how to share; use of templates, appropriate electronic and hardcopy formats; communication skills — oral, written and presentation Acknowledging ownership and intellectual property; understanding official and unofficial ownership issues. Understanding and being able to use tools for sharing information

Although everyone needs a basic level of skill in all these areas, some roles will require more depth. The use of a simple diagnostic tool will help assess where the levels should be. For example, an administrator is likely to need a profile similar to that outlined by the broken line in Figure 5 while a project manager could need a profile similar to that shown by the solid line.

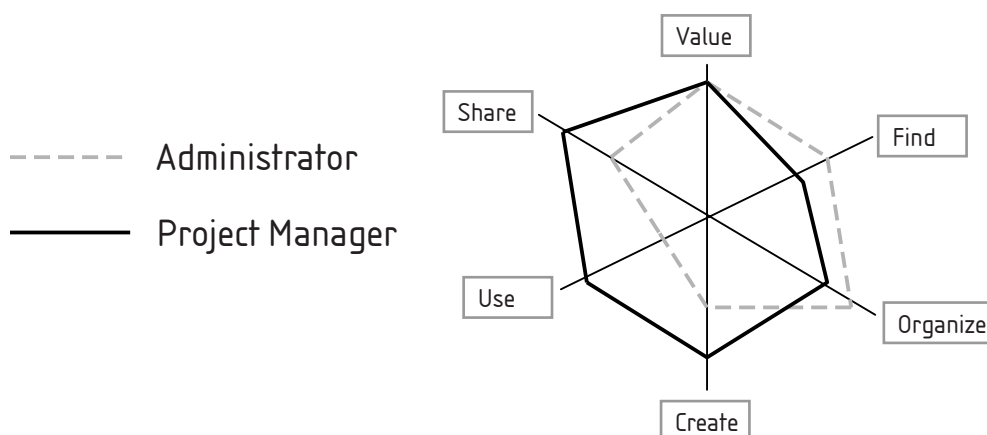


Figure 5 — Information literacy profiles for different staff types

In the above model it is the lack of understanding about the value of information and knowledge that is a contributory factor to poor knowledge sharing behaviours discussed below.

5.6 Knowledge sharing behaviours

5.6.1 General

“Many knowledge management experts point to the events of Sept. 11, 2001, as the ultimate reason that information-sharing systems are necessary. The FBI has drawn criticism for ignoring intelligence that could have thwarted the terrorist attacks and for an apparent lack of communication with the CIA. According to congressional hearings, government agencies ignored many other signs — some going back as far as 1994.

It is a dramatic example of the failure of knowledge management. In an agency such as the FBI, where the sharing of information can save lives, such lapses can mean tragedy.” [22]

In the business world, the same failures can lead to substantial financial losses. According to the International Data Corporation (IDC), Fortune 500 companies lose at least \$31.5 billion a year by failing to adequately share knowledge.

“The reasons for failure are many and varied, but two factors seem common: Technology is too complicated, and, perhaps most important, organizations don’t give enough consideration to the barriers human nature poses to information sharing.” [21]

Our definition of competence is the combination of skills, experience and behaviour that enables individuals to carry out their role. The BSI Guide to KM Culture (PD 7501 *Managing Culture and Knowledge*) deals with the development of cultures that are knowledge friendly and explores the issues of reward and recognition. One of the key concerns of the organizations interviewed was the development of environments that encourage and reward knowledge sharing.

In their book ‘If we only knew what we know’ Grayson and O’Dell point out four reasons why knowledge is not shared:

- **Ignorance:** Many people who have knowledge don’t realize that others may find it useful. At the same time, someone who could benefit from the knowledge may not realize that another person in the company has it. (see information Literacy in sub-clause 5.5.2)
- **No absorptive capacity:** Often an employee lacks the time, money or management resources to seek out the information they require.
- **Lack of pre-existing relationship:** People often absorb knowledge from other people they know, respect and like. If two managers don’t know each other they are less likely to incorporate each other’s experience in their work.
- **Lack of motivation:** People do not see a clear business reason for pursuing the transfer of knowledge [22]

Other evidence suggests that many staff feel overwhelmed by the amount of information they need to handle so they resist activities which they feel will lead to yet more information flowing over their desk, or an increase in demands on their time to help others.

Many of the behaviours required can be learned providing that the motivation is there. Virtual collaboration, for example, is a learned behaviour, but the individual needs to perceive the benefit of working in a virtual community to want to learn the behaviour.

Developing behaviours appropriate to knowledge working requires a corporate approach. The values of the organization should underpin the requirement and leaders support and demonstrate these behaviours. Knowledge sharing has to become embedded in the corporate hierarchy and in the way it works.

Professor Harry Scarbrough at Warwick University argues that organizations need to understand why employees share or hoard information and that understanding the prevalent behaviours in an organization will help to develop knowledge sharing approaches that are likely to work. He suggests a model of four knowledge behaviours (Table 9).

Table 9 — Scarbrough's four knowledge behaviours

<i>Web:</i> Knowledge connects people with others The Web occurs when knowledge is valued because it connects people. Communities of Practice and social networks are examples and their success depends on building networks of trust. For example a pharmaceutical company used social network analysis to identify existing successful networks and strengthened them by building and supporting Communities of Practice.	<i>Torch:</i> Knowledge is shared by following the leader in the organization The Torch symbolizes the organization which explicitly makes knowledge sharing a key value of the organization. In this scenario, the lead for knowledge sharing comes firmly from top management who provide the leadership and create practical value for employees. An example is Buckman Laboratories whose CEO leads development of knowledge sharing behaviours and processes and backs it up with rewards and sanctions.
<i>Ladder:</i> Knowledge is shared in pursuit of status The Ladder is driven by competition and contains the risk that people will view knowledge as personal possession. However, in some environments internal competition can be utilized. Competition to be assigned to the best projects can stimulate knowledge sharing as a criteria for selection	<i>Fortress:</i> Knowledge is a source of protection against external threats The Fortress is driven by a perceived need to defend the status quo and results in a refusal to share defended territory. In this scenario there is a reluctance to adopt new practices from outside and reluctance to break down boundaries — such as those between different professional groups.

“Getting people to work together in cross-functional project teams or task forces is a behavioural tool, not a technical fix. But it is much more likely to create the kind of trust and social networks we need to bring together knowledge from different groups.” (Scarbrough, 2003) [23]

5.6.2 Social Networks

Informal networks play a crucial role in knowledge flow in organizations. An article by Cross and Prusack [5] analyses the informal networks of fifty large organizations and identifies four key roles whose performance is critical to the performance of an organization — paraphrased below.

5.6.3 Central connectors

These are the persons that most people go to for information although they may not be the most senior persons in the department. In most cases, the central connectors are not the formally designated as ‘connectors’ in the organization. For instance, the information flow at one practice of a large technology consulting company in the study depended almost entirely on five mid-level managers. They would give their colleagues background information about key clients or offer ideas on new technologies that could be employed in a given project. These managers handled most technical questions themselves, and when they couldn’t, they guided their colleagues to someone else in the informal network — regardless of functional area — who had the relevant expertise.

While most central connectors serve the company in a positive way, linking colleagues and increasing productivity, some end up creating bottlenecks that can hold back the informal network. Sometimes the connectors use their roles for political or financial gain; in other cases, they are just struggling to keep up with their own work while also fulfilling their roles in the network. Whatever the reason, it is crucial to understand who the central connectors are and how their personalities and workloads may be affecting organizational performance and to take steps to release their potential. For example, if people are central to an informal network because of their depth of knowledge in consulting or banking or software development, it may be a good idea to reassign some of their other work so that they can continue to focus on their area of expertise. Alternatively, if people are central only because they monitor information that many people need, it may be possible to make those data more widely available in other ways — for instance, using e-mail or a corporate intranet to disseminate information to everyone in the company.

5.6.4 *Boundary spanners*

Boundary spanners serve as the group's eyes and ears in the wider world. They nurture connections mainly with people outside the informal network — with people in other departments within a company, at different satellite offices, and other organizations. A boundary spanner builds relationships with central connectors in other informal networks and becomes an efficient conduit of information; putting most people in all the networks at less than four removes from one another.

Boundary spanners play an important role in those situations where people need to share different kinds of expertise — for instance, in establishing strategic alliances or developing new products. For example the R&D department at a leading consumer-products company, found that just four of the 36 researchers in the group maintained links with academics in their fields. These four boundary spanners were the sole sources of crucial knowledge for the entire team, and if any of them were to leave or be promoted out of R&D, the productivity of the entire group would have been hit hard.

Boundary spanners are a rare breed. Most people don't have the breadth of intellectual expertise, the wealth of social contacts, and the personality traits necessary to be accepted by vastly different groups. For instance, few marketing managers are welcomed into the heart of an R&D network, largely because the two groups value different aspects of their work. The boundary spanner has to spend a lot of time developing an external network. To do so, the spanner may take up projects and tasks that cut across formal boundaries in the company, spending less time in the immediate network. If that kind of work is not welcomed by the organization corporate life can be difficult for a boundary spanner.

An organization can reap substantial benefits by recognizing its boundary spanners. For example, a consumer goods practice of a global consulting firm was distributed across different offices in North America, Europe, and Australia. Few consultants knew their counterparts in other countries, so coordination among the offices was poor. The firm saw a dramatic improvement, however, once it recognized the few people who were informally in touch with colleagues in other offices and gave them incentives to do more of this and increasingly assigning them to projects that would require them to travel to offices on all three continents. As a result, the spanners developed larger and more reliable personal networks all over the world. Since the firm was making additional demands on them, the senior partners awarded the boundary spanners generous salary increases as well as quicker promotions. A follow-up network analysis conducted a year later showed that many of the groups in the firm were much more integrated. New projects were won and old contracts were extended, partly because people were able to get the knowledge or expertise they needed from their far-flung colleagues more easily.

5.6.5 *Information brokers*

In large informal networks, you may find people who connect the various sub-networks in the organization. Without these information brokers the network as a whole wouldn't exist. Information brokers play a role similar to that of boundary spanners; only they do it within the social network. Through their links between small tightly knit groups, which could be quite isolated from one another, they facilitate the larger informal network.

Information brokers are disproportionately important to the informal network's effectiveness because they wield the power of a central connector without necessarily possessing the number of direct links that connectors have. In fact, they are characterized by a wealth of indirect connections. Information brokers play such a critical role that organizations often try to manage large informal networks through them.

At one electronics company there were eight information brokers in a community practice of 120 people. Senior managers were so impressed by the brokers' efforts that they decided to reinforce their work by making them, their expertise and the role they played explicit to the whole group. The information brokers were allowed to spend 20% of their time supporting the network and were officially designated as