هُوَالْحَقُّ

Knowledge management

Chapter 10

- Many managers are unaware of the quality of information they use and often mistakenly assume that because it is 'on the computer' that it is accurate.
- At an operational level, poor information leads directly to customer dissatisfaction and increased cost. Costs are increased as time and other resources are spent detecting and correcting errors.
- Poor information quality can result in subtle and indirect effects. For example, significant mistrust can ensue when the information from one part of the business, say order entry, that is used by another, perhaps customer billing, is unreliable.
- Inaccurate information makes just-in-time manufacturing and self-managed work teams infeasible. The right information needs to be at the right place at the right time. To illustrate the severity of this problem, one manufacturer was still allowing customers to purchase particular products that it was no longer making via its website.
- Poor information in financial and other management systems mean that managers cannot effectively implement business strategies. Decisions are no better than the information on which they are based.

AN INFORMATION CULTURE

Essential for the success of any information management strategy is the existence of an appropriate 'information culture'.[5] An information culture can be defined as the values, attitudes and behaviours that influence the way employees at all levels in the organization sense, collect, organize, process, communicate and use information. Marchand[6] has identified four common information cultures that exist in organizations today. They are:

- *functional culture*—managers use information as a means of exercising influence or power over others;
- *sharing culture*—managers and employees trust each other to use information (especially about problems and failures) to improve their performance;
- *enquiring culture*—managers and employees search for better information to understand the future and ways of changing what they do to align themselves with future trends/directions;
- *discovery culture*—managers and employees are open to new insights about crisis and radical changes and seek ways to create competitive opportunities.

IMPLEMENTING BUSINESS-WIDE INFORMATION MANAGEMENT

A well-managed information resource is arguably as essential as an effective IT infrastructure. Back in the late 1980s, Drucker,[11] in an article titled 'The coming of the new organisation', predicted that the typical organisation of the 21st century would be information based. He claimed it would be flatter, having drastically slimmed down its management size and levels, and would be populated mainly by knowledge specialists, working in fluid interdisciplinary teams. Everyone would be responsible for meeting their own information needs, and the organization as a whole would be required to have a unified vision and an information architecture, and to have abandoned former parochial views on information and its role. His predictions can now be seen to be happening.

Box 10.2 Information orientation

In their research, Marchand and colleagues* identified 15 specific competencies associated with effective information management and use. They were categorized under three headings:

- *information technology practices*—a company's capability effectively to manage information technology (IT) applications and infrastructure to support operations, business processes, innovation and managerial decision making (four competencies);
- *information management practices*—a company's capability to manage information effectively over the life cycle of information use, including sensing, collecting, organizing, processing and maintaining information (five competencies);
- *information behaviours and values*—a company's capability to instil and promote behaviours and values in its people for effective use of information (six competencies).

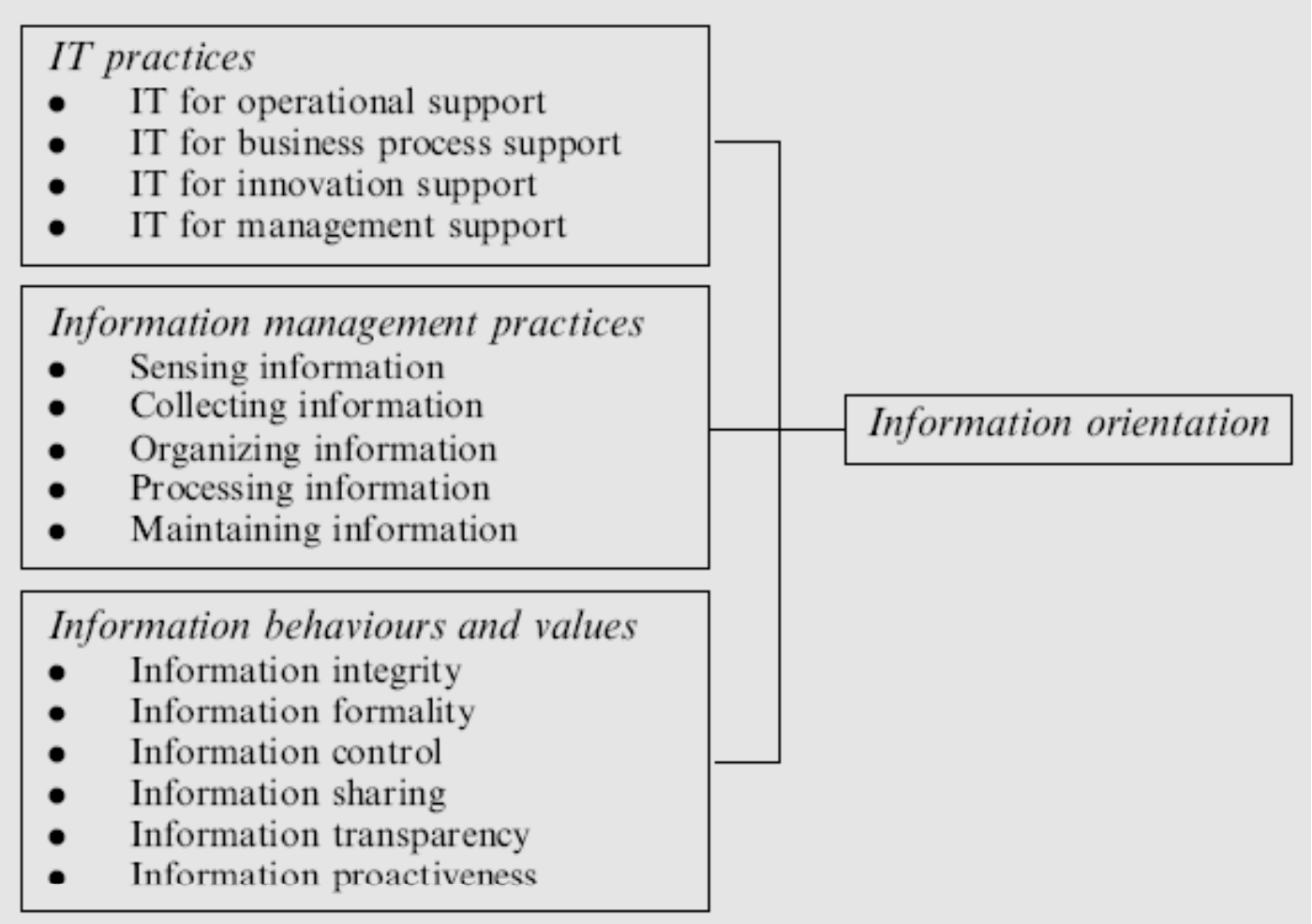
IT practices
IT for operational support
IT for business process support
IT for innovation support
IT for management support
Information management practices
Sensing information
Collecting information
Organizing information
Processing information
Maintaining information
Information behaviours and values
Information integrity
Information formality
Information control
Information sharing
Information transparency
Information proactiveness
Information orientation

Table 10.1 *Establishing the scope and purpose of information management: sample set of questions*

- What is the extent of information that the business is interested in?
- Why does it need the information, and what beneficial impact can be ensured?
- How much of it resides in centrally managed computer systems, dispersed departmental or individual PCs, in paper-based forms or in people's heads?
- How much of it is new or external information, currently not collected?
- Which information is used by a broad cross-section of the business and needs consistent, coherent policies to avoid ambiguity and conflict?
- What information is strategic and linked to strategic applications?
- What high potential information is likely to become strategic?
- When and how can it be delivered, or made accessible, where it will be most useful?
- How can it be verified, and what other information is required to turn it into useful knowledge?
- Which information needs to be integrated across applications, and what technical challenges does this pose?

Objectives of Information Management

The main objective of information management is to satisfy the demand for information, and thus deliver value to the business. This demand is expressed in the information requirements of applications, and the information access and delivery services required by users. Value is delivered through:

- enabling the business to make the right decisions;
- improving the effectiveness of processes and their outcomes;
- providing timely and focused performance information;
- the preservation of organizational memory;
- improving the productivity and effectiveness of managers and staff.

Types of information asset	Value/Importance defined by		
	Price paid or potentially paid (IPR) less costs	Impact of theft, damage or loss, major errors	Potential to increase revenue or reduce costs
Market and customer information			
Product information			
Specialist knowledge			
Business process information			
Management information and plans			
Human resource information			
Supplier information			
Accountable information			

Figure 10.1 *Mapping the value of information assets* (source: Information as an Asset: The Board Agenda, *KPMG/IMPACT, London, 1994*)

Figure 10.2 *Value of information to the business*

Table 10.2 *Typical strategic information requirements*

- Access to new information about markets, customers, competitors, suppliers or other external bodies to improve competitiveness
- Establishment of electronic links with external bodies, to speed up and improve communications and, in some cases, to lock in trading partners
- Access to external information such as market research databases or database marketing facilities to gain external intelligence
- Restructured existing information in order to meet the critical success factors of the business or its external partners
- Capability to integrate and utilize multimedia data
- Very fast access to integrated information so that visibility is provided from end to end of the key processes and information-based services can be delivered effectively throughout the processes
- Access and filtering mechanisms for unstructured information to satisfy executive information needs relating to critical business issues
- Performance measures to monitor progress on strategic factors
- Modelling data to perform 'what if' analysis on crucial business issues
- Better information about staff to enable more effective use of the human resource

Evaluation process

- Documentation of the information structure and processes, and system linkages, which helps in plotting the migration path to the desired systems and information architecture, and also in any initiative that may be put in place to enable information sharing and systems integration.
- Recognition of whether current systems are able to provide information to satisfy business needs, either directly or after enhancement.
- Identification of information that can be usefully transferred to an intermediate base of consolidated information for subsequent accessing, perhaps to satisfy composite needs or unstructured enquiries.

Table 10.3 *IAM and its constituents*

- *IAM* is a holistic approach to the management of the information assets of an organization. The emphasis is on integral, efficient and economic management of all the organization's information. It means getting the right information to the right people at the right time
- *Data (information) administration* is the identification and classification of business information and associated requirements, development of a corporate architecture, development of procedures and guidelines for identifying and defining business data (information)
- *Data dictionary administration* entails describing and cataloguing the information available
- *Database administration* involves design and development of a database environment for recording and maintaining data (especially machine-readable data), development of procedures and controls to ensure correct usage and privacy of data, operational timing, monitoring and housekeeping
- *Information-access services* ensure provision of support services and hardware and software to enable end-users to locate, access, correctly interpret and, where appropriate, manipulate the information available

Principles and guidelines for IAM

Principles and guidelines for IAM should be given careful consideration, both when IAM is first introduced and when it is reassessed and updated to meet changing business needs. Aspects to consider include criteria for:

- determining the cost versus value of providing information;
- defining standards of information quality, accuracy, security and timeliness;
- responsibilities and allocation of ownership;
- satisfying the individual's need for information;
- sources and types of information to be catered for;
- what levels and forms of information should be provided (e.g. raw, unit, summary, etc.);
- how to determine the scope and methods for key practices (e.g. enterprise modelling, information sharing);
- principles relating to making the user community aware of the scope of IAM, and how to optimize their use of information;
- what constitutes an issue that needs to be resolved, and the means to do so.

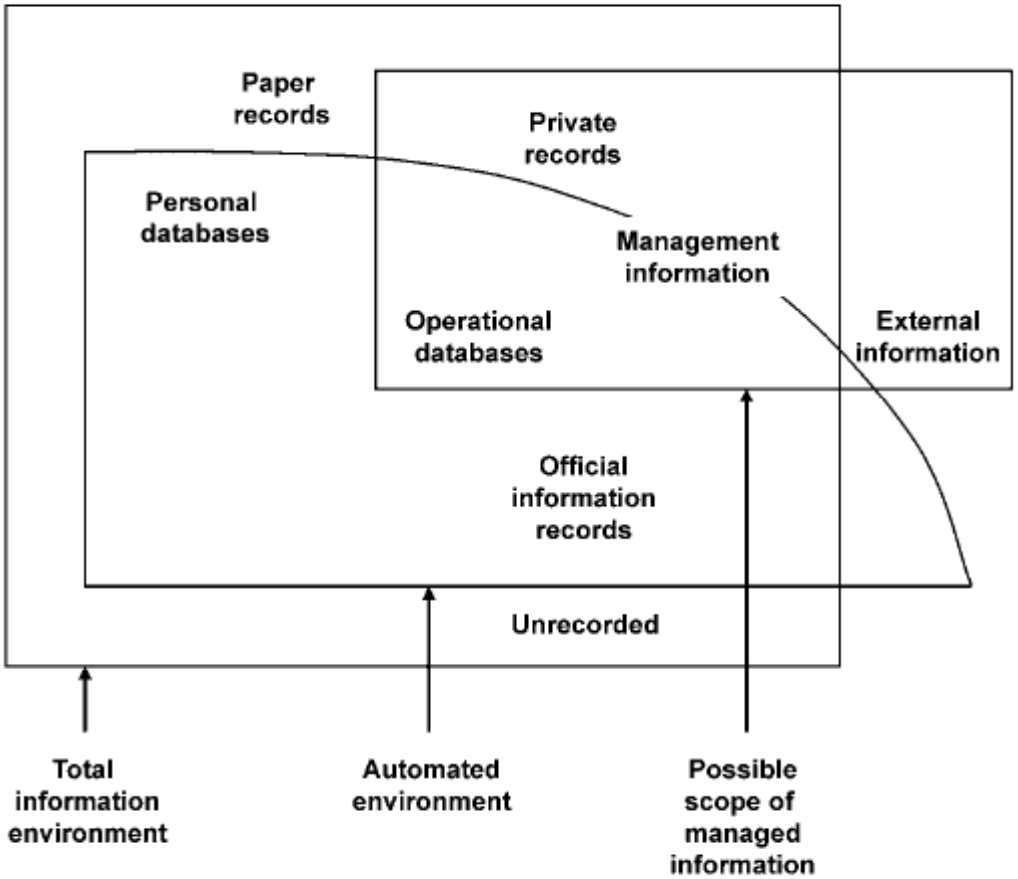

Figure 10.3 *Information environments*

The enterprise or business model is the highest level model that is produced during the IS strategy process or within IAM. A business model is illustrated in Figure 4.3. It may have several components, which are described in more detail in Chapter 4:

- *A global hierarchical process and activity model* that mirrors the current structure of the business. It is used to identify business activities, by decomposition from the highest level functions of the business. It can be used to confirm the content and boundaries of the primary and support business processes.
- *A global process model* that shows the primary and supporting business processes, their relationship and the principal information and material flows. It is usually possible to map this onto the value chain model.
- *A global entity model* that includes all the high-level business entities that are of crucial interest to the business.
- *The activities and entities* linked together in a matrix, which represents a conceptual information architecture, indicating the relationships between the constituents and possible application areas.

Box 10.4 Tasks performed within IAM

Section 1: Data (Information) Administration Tasks

Section 2: Data Dictionary Administration Tasks

Section 3: Database Administration Tasks

Section 4: Information Access Tasks

A number of other organizational factors should be considered:

- Skilled specialists may be needed to set up and implement IAM and to train the in-house staff in the skills required.
- Other specialists may be needed to create the distributed and integrated environment.
- Because it may be a continuous process, sufficient resources must be allocated.
- There is no one organizational structure that is universally appropriate. It is possible to have a structure with all IAM activities encompassed within the IS function, and managed at the same level as IS/IT development, etc. This could represent either a corporate or SBU structure. An alternative is for information management residing outside the IS function, which retains only database administration. In this case, the structure contains corporate information management as well as information management at SBU level. This would be repeated for each SBU.

Areas of risk	Level of risk defined by:			
	Impact on organizational performance	Likelihood to happen	Context: who, where, when, how	Comments on protection
Accidental damage/ loss (e.g. corruption/ deletion from computer)				Technical procedures Back-up Education
Deliberate acts of theft, or abuse/misuse				Security procedures Infringement penalties
Loss of people				Contractual terms Registration
Inaccurate and untimely information				Validation procedures Education
External relations (e.g. customer/ supplier)				Trading security Contractual terms
IPR protection, sale and acquisition				Contractual terms Registration
Destruction of facilities				Physical security Contingency planning
Legal and accountability				Education Protection of assets

Figure 10.4 *Information assets: common areas of risk and protection* (source: Information as an Asset: The Board Agenda, *KPMG/ IMPACT, London, 1994)*

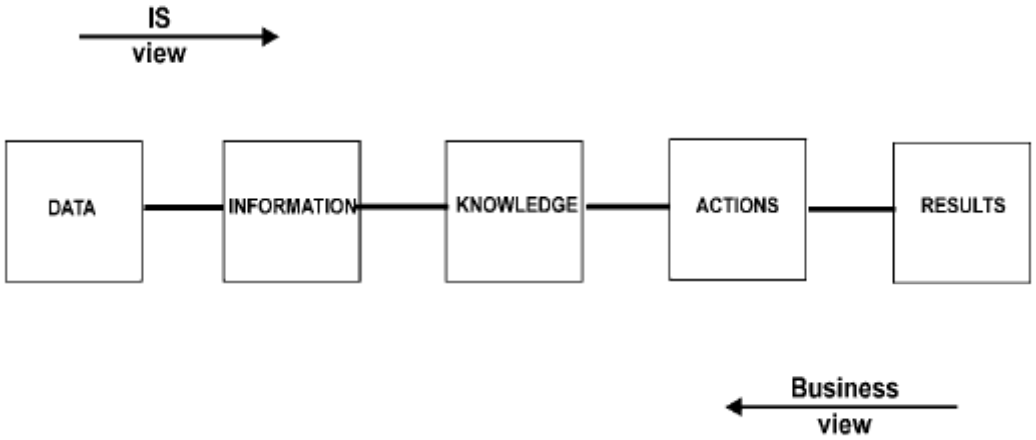

Figure 10.5 *The DIKAR model* (source: *after Venkatraman*)

Table 10.5 *Types of knowledge and associated KM issues*

	Knowledge as body of information	*Knowledge as know-how: The Individual*	*Knowledge as know-how: The Team*
Nature of knowledge	• Explicit • Codifiable • IS/IT can play a part • Packaged	• Tacit • Personal • Diffuse	• Tacit • Fluid • Dependent on team dynamics • Diffuse
KM issues	• Finding it • Validation • Value assessment • Obtaining it at reasonable cost • Integration with own system • Making available to the right population in the right form • Sensible use of technology • Ensuring subsequent beneficial use	• Establishing suitable processes for extraction • Tight ownership • Reluctanct to impart • Motivation and reward • Experiential, thus hard to encode • Trust • Finding suitable way of passing on learning • Limited role for technology	• Formal management of essentially free-form activity • Establishing suitable frameworks and processes • Members' own perception of their role • Mutual trust—need 100% buy-in • Formal learning mechanisms • Dissemination • Creating and using knowledge repositories • Technology has a background role
Common KM issues	Knowledge about knowledge (knowing it exists and where: its context and hence its importance) Understanding the relevant business context Ownership and buy-in to KM processes Updating and reuse of knowledge Demonstrating causal link between KM activity and business benefit		

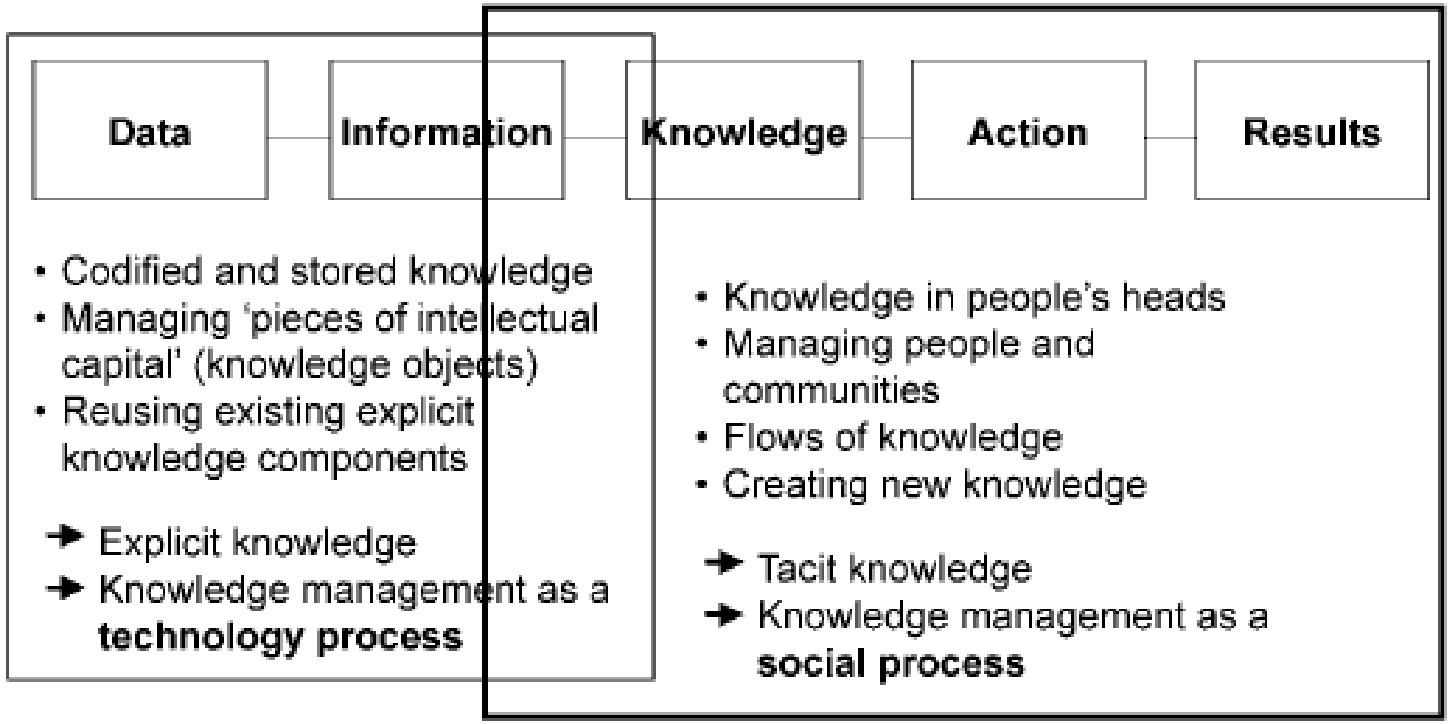

Figure 10.6 *Mapping knowledge perspectives on DIKAR model* (source: *draws on the work of K. Breu at Cranfield School of Management*)

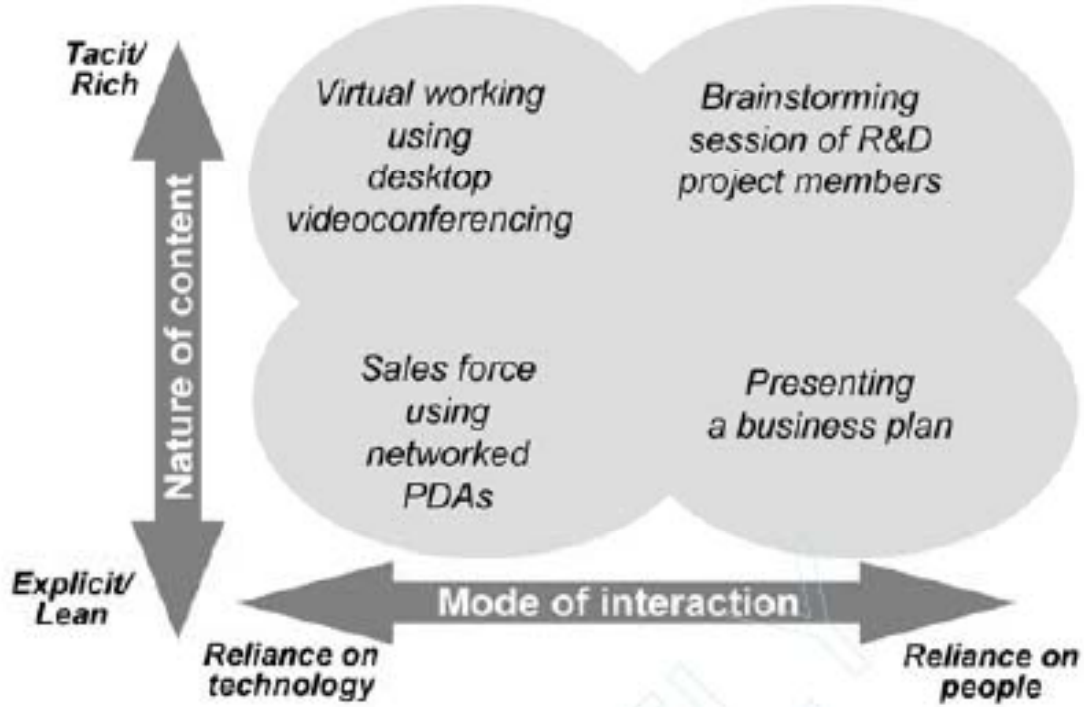

Figure 10.7 *Content and interaction in knowledge management* (source: *K. Breu, Cranfield School of Management)*

Table 10.6 *Barriers to successful knowledge management*

People	*Management*	*Structure*	*Knowledge*
Inertia to change	The fear of giving up power	Inflexible company structures	Extracting knowledge
Too busy—no time to learn	The difficulties of passing on power	Fragmented organizations	Categorizing knowledge
No discipline to act	Challenging traditional company style	Functional silos	Rewarding knowledge
Lack of motivation	Imposed constraints	Failure to invest in past systems	Understanding knowledge management
Constant staff turnover	Lack of understanding about formal approaches		Sharing between key knowledge groups
Transferring knowledge to new people			Making knowledge widely available
Teaching older employees new ideas			

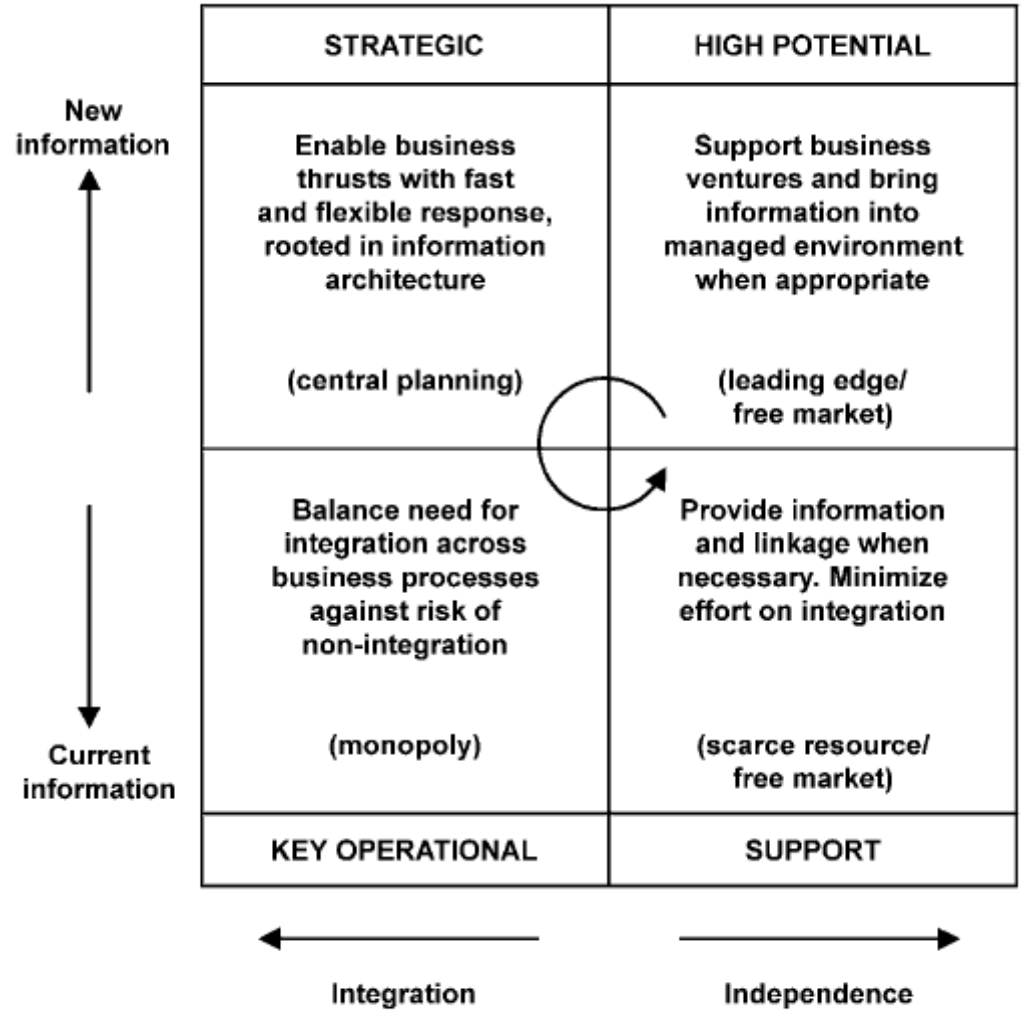

Figure 10.8 *The information portfolio*