Chapter 1

IDENTIFYING VALUABLE KNOWLEDGE

Snapshot

Valuable knowledge can be found in many places in organizations, from unique business models or solutions, key value-adding processes, core technology competencies, to business support systems that integrate knowledge across the organization. Identifying an organization's most valuable knowledge is the first step in deciding how to prioritize investments in projects designed to retain and develop that knowledge.

A systematic plan of action can be created by mapping key knowledge resources and then evaluating their importance and accessibility. There is a series of questions you can use to help you with this process. The approach works for different levels of detail. You can adapt it depending upon whether you are looking to create an overall strategy or to develop specific initiatives. Three case studies show how different types of organizations applied the approach and what they learnt from it.

Why this matters

Knowledge is widely recognized as a strategic resource. Current thinking goes further than simply acknowledging it as a source of competitive advantage: experts argue that turning knowledge into value is the main reason for firms to exist.[1] While there may be agreement that a knowledge perspective should underpin an effective business strategy in today's fast moving, global knowledge economy, many organizations have no process for identifying their most valuable knowledge and creating a plan to manage it. There is little evidence to suggest that organizations commonly adopt a systematic process to determine whether they are focusing effort and investment on their most valuable knowledge.

Valuable knowledge relates to an organization's competitive position, how it differentiates itself, and even how it manages itself and reinforces its culture and

"One of the reasons it's difficult to identify valuable knowledge is that value is in the eye of the beholder. That's why it's important to involve as many different stakeholders as possible in the process."

Dr Judy Payne, Henley Knowledge Management Forum

sense of purpose. In the public and not-for-profit sector, it relates to the identity of the organization and how it best achieves what it exists to do.

The Institute of Value Management makes the following observations about value:

> The concept of Value relies on the relationship between the satisfaction of many differing needs and the resources used in doing so. The fewer the resources used or the greater the satisfaction of needs, the greater the value. Stakeholders, internal and external customers may all hold differing views of what represents value.

When approaching the task of identifying valuable knowledge, this definition suggests two important dimensions. The first is concerned with the importance of the knowledge (how well it satisfies an organization's needs and therefore its potential benefit to the organization). The second is concerned with the accessibility of the knowledge (the ease and cost of capture, use, maintenance, and replacement).

What this means for your organization

In the field of strategy, various frameworks and tests have been created to assess the value of resources, including knowledge.[2] Despite the publication of such frameworks, anecdotal evidence suggests that they are not widely used.

The reasons for using a systematic process to identify and evaluate the knowledge resources of the organization are:

- To understand what knowledge the organization has;
- To understand what knowledge is needed – a gap analysis;
- To add structure to thinking and action;
- To create a view that is robust against organizational change and over time so that sustained initiatives can be justified.

At a practical level, there are three main activities involved in identifying valuable knowledge: identification and mapping of knowledge resources; relative valuation of knowledge resources; and using the results. The resulting process therefore has three stages:

1. Developing a knowledge map;
2. Valuing the knowledge in the map;
3. Using the output.

All these activities are best achieved by involving key stakeholders who have experience in critical areas of the business, although the exercise could be carried out by a single person.

Creating an action plan

Developing a knowledge map

The objective of this stage of the process is to map the domains of knowledge that are important to the business. Without this mapping exercise, critical knowledge resources for the business may be missed later when conducting the valuation exercise. The knowledge map is not an organizational chart or a process map. It is a representation of the key areas of knowledge that are core to the business over time and will be robust against organizational change.

> "People intuitively see that certain kinds of knowledge – such as the organization's R&D related knowledge – are valuable. But what they are usually much slower to see is that knowledge about how the organization manages its projects or even its facilities can be just as valuable."
>
> *Naina Visani, Head of Knowledge Management, Atomic Weapons Establishment*

To identify valuable knowledge resources, there are some trigger questions that can be asked about the organization:

- What differentiates us in the market place?
- What are our important markets?
- What are our key value-adding processes?
- What are our key competencies?
- What are our important products and services?
- What is important about our brand and identity?
- What are our key business support systems?

It can also be helpful to establish a hierarchy of value, namely:

Strategic – what differentiates us in the market place? Our unique *business models*.
Market – how do we present ourselves to our customers? Our *business themes/solutions*.
Business processes – how do we operate? Our key *value-adding processes*.
Core competencies – who are we? Our core *technology competencies*.
Basic – what are our business support systems? Our *corporate processes*.

A decision about the level at which you are carrying out the analysis needs to be made. This includes the part of the business/organization involved, whether you intend to stay at a high strategic level, or whether you intend to drill down

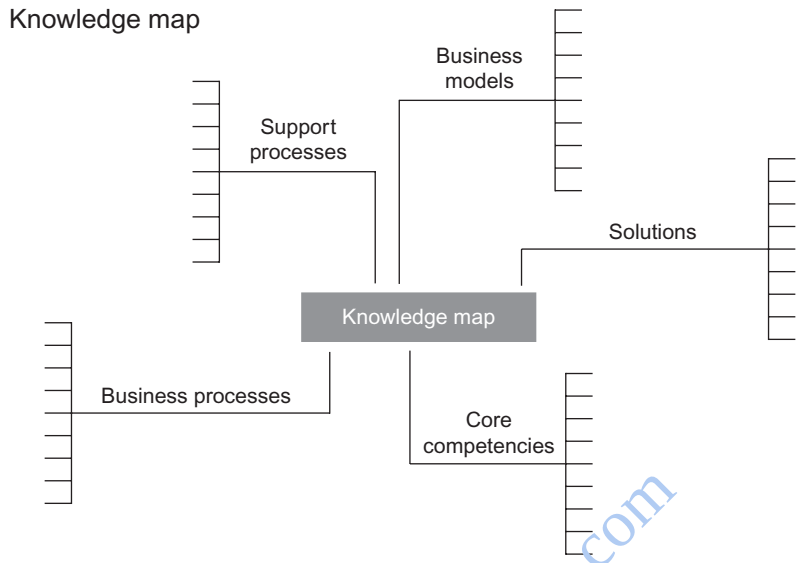

Figure 1.1: Possible structure for a knowledge map

below this to identify important categories of knowledge so that you can design projects in particular areas to retain or develop specific types of knowledge.

An example of the kind of knowledge map that might be created is shown in Figure 1.1.

We have already suggested that the value of knowledge is a function of its importance (its potential benefit to the organization) and its accessibility (the ease with which it can be applied, including the cost of capture, use, maintenance, and replacement). Table 1.1 includes some useful questions to determine importance and accessibility in relation to each type of knowledge identified in the map.

One of the challenges with knowledge mapping is making sense of a large amount of information and making the findings useful for everyone. Visualization of the results helps both to generate insights and communicate key points. Consequently, it is worth trying to organize the knowledge identified into a structured format that allows graphical representation. There are three basic kinds of scale that you can choose to use:

- Nominal scale – classify each body of knowledge as high importance/low importance and easy/difficult to access.
- Ordinal scale – rank the bodies of knowledge to indicate their importance and accessibility relative to each other.
- Rating scale – score the knowledge (e.g. on a scale of one to ten) to indicate its importance and accessibility.

You can then choose to represent the findings in an appropriate way. One approach is to represent them in a two-by-two matrix (using a nominal scale for both impor-

Table 1.1: Determining the importance and accessibility of knowledge

Importance	Accessibility
Is the knowledge critical to the business?	How easily can the knowledge be shared?
Does it impact on reliable and efficient operations?	How easily can the knowledge be applied?
Does it add value to the business?	Can it be used to make other knowledge more accessible?
Is it unique to this organization?	How accurate and reliable does it have to be?
Is it difficult to copy?	How quickly does it change with time?
Is it likely to be relevant for a long time?	What is the cost of maintaining it?
Could it be replaced by some other knowledge?	Can the right people access it?
Is it in demand?	Is the knowledge owned by the business?
Does it represent something we excel at?	
Can it be patented?	
Is the knowledge critical to the business?	

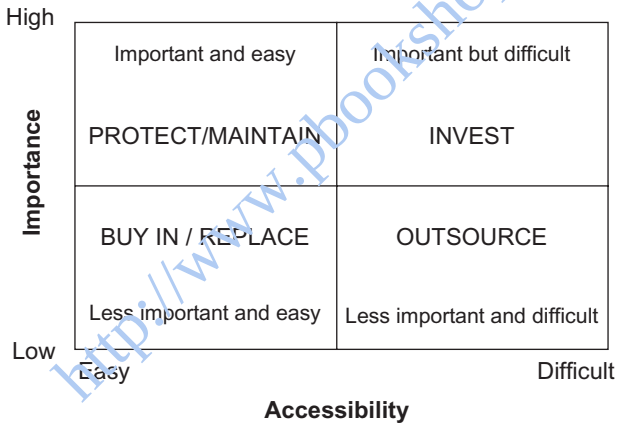

Figure 1.2: Presenting the results as a matrix

tance and accessibility) to create groups of knowledge resources with generic actions for each group (Figure 1.2). The same results can be represented with a cut off below which the value of the knowledge does not provide benefit from management investment (Figure 1.3).

Real life stories

The following three examples have been selected because they show how the knowledge mapping can be taken to different stages and used for different purposes.

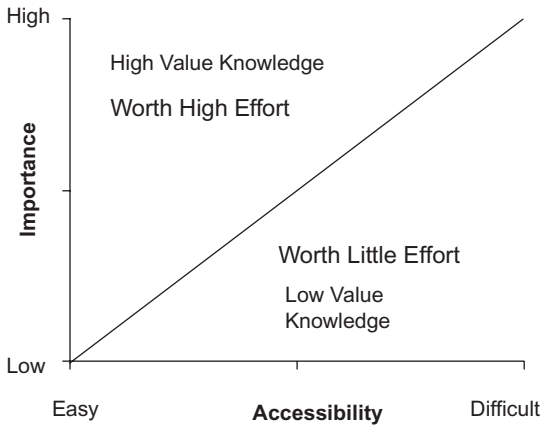

Figure 1.3: Presenting the results using a cut off line

R&D Technology Solutions Provider (TechSol)

TechSol is a UK-based technology solutions provider employing around 9,000 staff on a few main sites plus a substantial number of smaller sites throughout England, Scotland, and Wales. There is also a rapidly expanding business in the USA. The major part of the business is research, development, and evaluation for the defence sector and in this context the organization has in-depth expertise and knowledge over a very wide range of technologies. This extensive knowledge base is exploited to deliver advice and solutions over a very broad range of problem areas.

Identifying valuable knowledge has always been an important part of the development of the technology strategy and the business plans; knowledge is both a raw material and the product. Different types of knowledge were identified (functional, technical, business, market, and tacit) and mapped under seven main headings using the principles developed through this project (see Figure 1.4). The importance and difficulty of building this knowledge under each of the headings was evaluated.

Lessons and observations from carrying out this mapping process and then evaluating the importance and accessibility of the knowledge included the following:

- There were no items of low importance because, by definition, the knowledge map contains important knowledge. However, the discipline of asking the questions caused the manager involved to make some improvements to the knowledge map and he commented that one should not regard the process elements as purely sequential. The ease with which one might access and build knowledge did yield some low scores (easy to build/acquire) and this might suggest that, although the

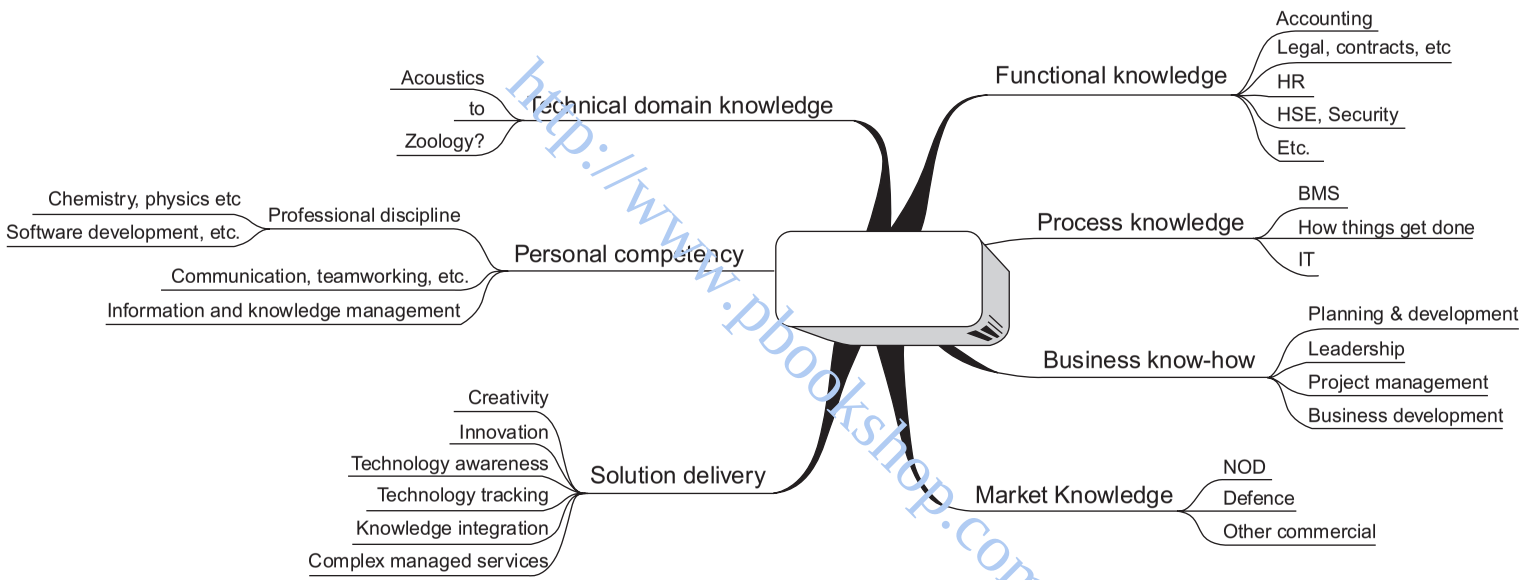

Figure 1.4: The knowledge map of TechSol

knowledge was important, it is unlikely to be the main source of sustained competitive advantage. Such knowledge could be outsourced if necessary.

- The most valuable knowledge in the organization, and the most difficult to create, is the highly tacit knowledge concerning how value is generated; it might be described better as a competency and relates to the capacity to combine collective knowledge and experience with a good understanding of customer needs and supplier capability to create innovative solutions to difficult problems.
- The process has potential as a tool for those developing strategy and plans at many levels in the business.
- The process also has potential in training programmes; in a large, agile, empowered organization such as TechSol everyone needs to understand the way the business functions, and in particular how value is created and the sources of competitive advantage. Going through a process such as this could be a very effective way to develop such personal learning.

Firm of Architects (Architects)

Architects is an architectural practice specializing in housing, with a multidisciplinary capability. Whilst being quite a small organization (about 240 technical staff), it is large by the standards of architecture practices. It operates in the specialist market of housing and within this has three centres of excellence: Regeneration, Private Housing, and Special Needs Housing. Great emphasis is placed on keeping abreast of developments in the field and on continuous improvement, which places a premium on knowledge and information collection and dissemination within the company.

In applying the knowledge valuing model, the starting point was to construct the knowledge map, which is shown in Figure 1.5.

The right hand lower corner of the map shows the "core competencies". This is a very high-level statement, as some of the competencies, such as architecture, include specialist bodies of knowledge which need to be identified in greater detail as strategies are developed. "Corporate Processes" and "Business Process" embody the knowledge required to run the business. They hold the key to mobilizing competences. "External Bodies of Knowledge" and "Market Sectors" encompass the knowledge and information from the outside world which needs to be constantly refreshed in order to understand the context within which the organization has to deploy its competencies. The final family is "Knowledge Integration". This is the knowledge of how to bring together competencies, with the knowledge to deploy them, taking into account input from the outside world, to provide a service that clients want to buy. This is the most important knowledge in the business.

Much of the knowledge and information in the other families can be relatively easily obtained by competitors, but they could not easily understand how to collect it together and present it to clients in an effective and convincing manner.

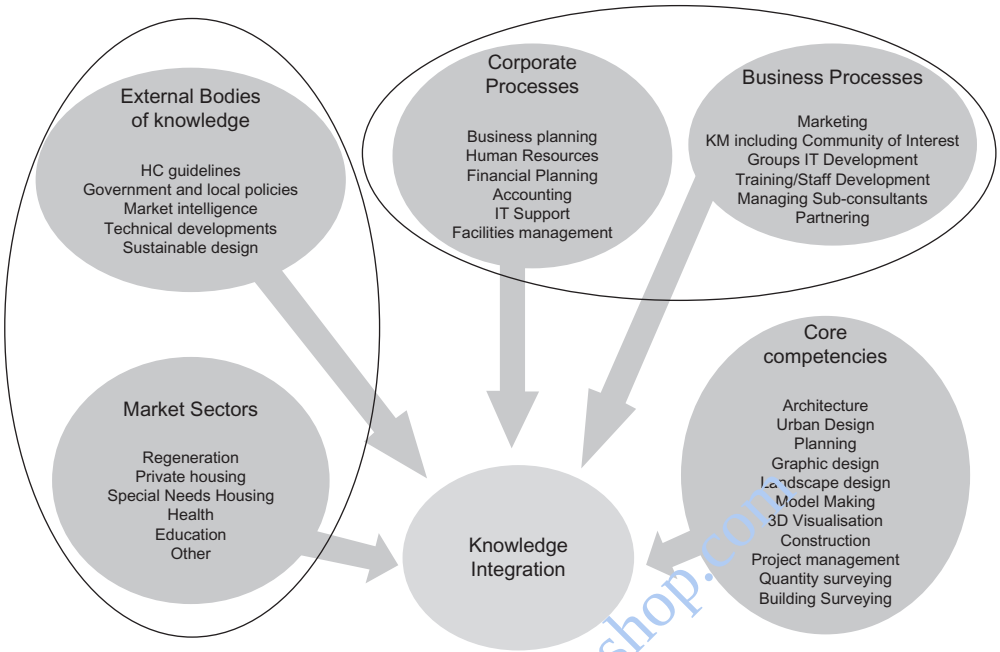

Figure 1.5: Knowledge map of Architects

Lessons and observations from carrying out this mapping process led the organization to recognize that its initial concept of how to manage knowledge was too crude. It was based on visits to other organizations, attending seminars, and reading around the subject. Plotting the knowledge map has provided the basis of a more considered approach. In particular it has:

- confirmed that there are existing Knowledge Management and information sharing tools to meet the organization's most important needs;
- illustrated the gaps in the coverage of the tools and put greater clarity on priorities;
- illustrated the difference between bodies of information and knowledge which should largely just be available, and bodies of knowledge which need to be developed and nurtured.

ICT Solutions and Services (ICT_Services)

ICT_Services is one of the world's leading providers of vendor independent Information and Communication Technology (ICT) solutions and services. It designs, integrates, and manages ICT infrastructures and business solutions for many of the world's largest global and local companies and organizations, helping them maximize the value of their information technology investments.

The process of identifying valuable knowledge was used to check the focus of the current knowledge strategy and prioritize future projects. A knowledge map was developed which identified seven main categories of knowledge resources: clients, global alliances, global offers, global service delivery, global standards and competencies, country operations, and functions. Having mapped these (in a similar way to the two examples shown above), a rating system was used to evaluate the importance and accessibility of the knowledge. Figure 1.6 shows these ratings.

Lessons and observations from carrying out this process included the following:

- Existing initiatives were in line with the priorities identified through this high-level analysis.
- A more detailed analysis would involve workshops with multiple stakeholders associated with each knowledge area.
- The method can be used to identify future priorities and to support the justification of associated projects.

Top tips

The process of identifying valuable knowledge can be carried out by an individual or by a group of stakeholders – people who have experience in critical areas of the business.

Group work has several advantages:

- It builds commitment and understanding.
- Insights are created through discussion.
- It is more likely to produce robust results.
- It is more fun!

If you decide to work through the process with a group, invite people with a variety of skills and backgrounds from different parts of the organization. Consider appointing a facilitator to manage the process and make sure everyone contributes effectively. Consider inviting people from outside the organization – customers and suppliers might be able to bring valuable new perspectives.

The research and the team involved

This research was carried out between 2003 and 2004 by a working group of members of the Henley KM Forum. It involved a review of the literature, focus group exploration of the nature of knowledge value, and an evaluation of the proposed framework by applying it in detail to six case study organizations.

	Clients	Alliances	Global Offers and Centres	Global Delivery	Global Service Centres	Global Standards and Competences	Country Operations	Functions			
Importance									1	2	3
Is the knowledge critical to the business?	3	2	2	3	3	2	3	1	not critical	important	essential
Is the knowledge relevant to the business?	3	3	3	3	3	3	3	2	low	medium	high
Does it impact on reliable and efficient operations?	3	3	2	3	3	2	3	1	low impact	significant impact	high impact
Does it add value to the business?	3	3	2	3	3	2	3	1	low value	medium value	high value
Is it unique to my organization?	2	2	3	3	2	2	3	1	ubiquitous	differen-tiator	unique
Is it in demand?	3	3	3	3	3	2	3	2	low	medium	high
Importance score	17	16	15	18	17	13	18	8			
Accessibility									1	2	3
How easily can the knowledge be shared?	3	1	2	1	1	2	3	2	easy to access	available	difficult to access
How easily can the knowledge be applied?	3	1	1	1	1	1	3	1	easy to apply	applicable with some effort	difficult to apply
How accurate and reliable does it have to be?	3	3	3	3	3	2	3	2	order of magnitude	important	accuracy essential
How quickly does it change with time?	3	3	2	2	2	2	3	2	yearly	monthly	daily
What is the cost of maintaining it?	2	3	3	3	3	1	3	2	low	medium	high
Can the right people access it?	2	1	1	1	1	1	2	1	generally yes	mostly	generally no
Accessibility score	16	12	11	11	12	9	17	10			
Combined score	33	28	26	29	29	22	35	18			
Priority to focus on	2	4	5	3=	3=	6	1	7			

Figure 1.6: Knowledge map ratings of ICT_Services

The research activities were intended to help managers identify valuable knowledge in their organization to set priorities for management attention and financial investments. It was not intended to provide prescriptive advice for a particular business.

Dr Judy Payne, a member of the KM Forum team and Visiting Fellow at Henley Business School, led the research in conjunction with Brian Holness of InnogyOne, who was the member co-champion. Anna Truch of Henley Business School provided research support. Working group members included representatives from:

Aegis
Getronics
InnogyOne
PRP Architects
Unisys
DLO
GlaxoSmithKline
Nissan
QinetiQ

together with invited associate: John Burrows (formerly Buckman Laboratories).

Final reflections from the research

Case studies have demonstrated the application of this approach across a wide range of organizations in very different business sectors and at varying levels of KM maturity. The working group originally thought that KM maturity might affect the way the guidance should be applied. However, it became clear that organizational culture was more important in determining the way the findings were adopted.

Categorizing knowledge into domains or families helps to identify the different type of knowledge each family represents, hence a different level of impact on the business and potentially a different management strategy. This approach can also identify gaps in the knowledge base that need to be filled to provide the ability to deliver the business plan. Valuing the knowledge in each family allows the creation of a relationship between the level of the knowledge and its potential value to the business. Judgements can then be made on the investment in its management, development, and exploitation.

Notes

1. See for example Grant, R.M. (1996) Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17: 109–122, or Spender, J.-C. (1996) Making knowledge the basis of a dynamic theory of the firm, *Strategic Management Journal*, 17: 45–62.
2. See for example Collis, D.J. and Montgomery, C.A. (1995) Competing on resources: Strategy in the 1990s, *Harvard Business Review*, 73(4): 118–128 (five tests: inimitability, durability, appropriability, substitutability, competitive superiority) and O'Hara, K. and

Shadbolt, N. (2001) "Issues for an ontology for knowledge valuation", in *Proceedings of the IJCAI-01 Workshop on E-Business and the Intelligent Web* (five characteristics that affect knowledge value: embeddedness of knowledge in a network, knowledge as a means to an end or an end in itself, source of the knowledge, context of the knowledge, amenability of the knowledge).