

**THE KNOWLEDGE THAT BRINGS VALUE TO OUR ORGANIZATIONS IS NOT THAT WHICH INFORMS OUR INDIVIDUAL DECISIONS, BUT RATHER THAT WHICH TELLS US WHERE WE CAN FIND SUCH INFORMATION. HERE, VICTORIA WARD EXPLAINS HOW THE KNOWLEDGE-MAPPING PROCESS CAN GREATLY ENHANCE THE CREATION AND FLOW OF THIS “META” KNOWLEDGE.**

# MAPPING META KNOWLEDGE

**A cartographic approach to finding knowledge about knowledge**

by Victoria Ward

Effective knowledge is knowing how to go about assembling the relevant components to inform a particular decision or judgement. So “meta” knowledge about these stores of value is more important than knowing precisely what’s in them.

Formalizing the use of traditional, current and emerging map-making techniques in an enterprise can provide powerful levers for the creation of “meta” knowledge, and in achieving cultural step change (and so achieving strategic goals) in any enterprise.

Systematic mapping of the location of knowledge and information assets needs to take place in conjunction with the creation and formalization of communities of navigators, or local guides who act as collaborators in the creation, distribution and development of the map, and in the location, guardianship and development of valuable knowledge assets. But we need to start with some assumptions about knowledge assets and a knowledge dynamic.

## **What is effective knowledge-sharing?**

*Story One:* Fieldworkers in a utility whose depots closed as part of a cost-cutting campaign take to meeting

in a cafe. If one group of workers deals with a particular problem or notes something which they think the others should know, they log it in a diary which is kept for them by the cafe owner.

*Story Two:* Two local schools are prototyping the new business HNVQs, along with about 200 other schools. The head of Business Studies in one school has contacted her counterpart in the other so that they can share experiences as they go.

*Story Three:* A fund management company has created a roving hit squad to set up offices in Europe, reducing the set-up time from nine months to six weeks.

*Story Four:* Software companies are giving away their most valuable software programs.

*Story Five:* The McSpotlight Web site, created and run by a tiny group of supporters of the McLibel defendants, has attracted 14 million hits.

*Story Six:* A reinsurance company has identified “super-experts” as guardians of particular aspects of underwriting policy. Underwriters in the field can contact them directly for guidance, and sometimes instant policy updating.

*Story Seven:* An oil and gas company which has

## KEYPOINTS

1. The knowledge which holds greatest value for the organization is “meta” knowledge, which directs us to the information we need to make decisions.
2. Each component of knowledge informing a particular decision (know who, know how, know where, know why) can be considered as potential territory for mapping.
3. A knowledge map, like its geographical counterpart, should be constructed in four stages: identifying the user; surveying (discovering and recording the facts); analysis of data; and compilation.
4. Similarly, a map should provide three things: a recognizable reality; a bearing for the user; and tools for him/her to plan a route.
5. The act of altering or updating a map is in itself a value-adding process in that it encourages collaborative relationships.
6. Organizations need to appoint “navigators”—specialist map-readers responsible for effecting the flow of knowledge for communities of up to 50 people.

restructured and outsourced extensively over recent years keeps a register of departed experts, so that, if necessary, it can draw on their expertise.

*Story Eight:* A reinsurance company runs master-classes where departing elders are quizzed by a small group of “bright young things.” These are also recorded and written up.

### Where is knowledge? What are its characteristics?

It’s harder to define what knowledge is than to define where it is and what it’s like.

*Knowledge can be found in:*

- Presentations, reports, journals.
- Licenses, franchise agreements, patents, intellectual property.
- Databanks, software, risk tools, audits, gap analysis.
- Libraries, catalogs, archives.
- Manuals, policy documents, memos.
- Individual ability, memory, know-how, experience.
- Teams, communities, groups, networks.
- Meetings, training materials.
- Financial and management information.

*Knowledge is, among other things:*

- Time critical, virtual, relevant *now*.

- Reflexive, complete, evolving, interactive and often unexpected in its relevance.
- Messy, filtered, created for a specific purpose, (for example to inform a decision), but drawing on experience from other times and places.
- Social, often self-organizing, achieved through questions, challenge and debate.
- Filtered, creative, selective.

### What are some of the challenges?

1. In all kinds of products and services there is increasing knowledge intensity. (The workers in *Story One* have their scheduling and feedback managed by a handheld computer and a regional call center.)
2. Senior managers and directors cannot see what knowledge-sharing is going on, as much of it happens out of their line of vision. The normal tools of management are increasingly ineffective in creating a knowledge-sharing system.
3. Services, software and intangible products are infinitely expandable at virtually zero cost, and can be made available through many channels at great speed.

4. Network economies create an entirely different economy of production, where modules of activity, knowledge and expertise might be dislocated in time and space (call centers in Ireland, production engineers in India, parts supply and service contracts in London).
5. Self-organizing behavior (such as that shown in *Story Two* and the utilities workers in *Story One*) can take place without, or in the face of, instructions or “executive” decisions. A few individuals can have a disproportionately major influence.

### Four Stories of Value

Stories, characteristics, and challenges together lead to a starting point for some assumptions about knowledge discovery. An enterprise needs to understand where its assets might be located before it can create a plan to unlock value.

Know who?—“*Who around here knows about nursing home underwriting?*”

- Experts and networks.
- Individuals with expertise, information networks, communities of practice, communities of purpose.

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## THE GREEN BOOK STORY—CREATING A COMMUNITY OF NAVIGATORS

The Green Book was conceived by the knowledge management team at NatWest Markets about two months into a two-year program. It came about because of frequent demands to “fix the phone book.” The team felt strongly that “fixing the phone book” was not going to make the right decision about the value of knowledge management. And instead developed a concept which they initially dubbed “The Rough Guide.” Here, Victoria Ward describes the design principles which governed the development of the Green Book and the collaborative process which brought it into being.

### The Project as Collaboration

The original concept to launch of the “working draft” in July 1997 took about four months. There were 800 experts in this edition, and 100 knowledge co-ordinators, representing a slice of over 10 percent of the business as it was then structured. Originally the plan was to launch a first edition in July, followed by a second in late autumn, with 1,000 copies of each. But there was internal opposition. The editor persuaded the senior executive to allow an edition to be launched as a working draft (rather than a first edition) and proposed a scaled back distribution of 150 test copies. This had unexpected benefits. The “scarcity value” created profile for those who had copies. In fact it was the knowledge co-ordinators who had most of the copies, so this, accidentally, further developed the role of the knowledge co-ordinators into the kind of navigational community which had been conceived of at the outset.

### Creating a Community of Navigators

After the launch, there was a carefully orchestrated program of events and discussions, as well as intense activity by the editor, and use of the library space to create a social and educational program; to “train” them as sub editors; and to create a debate which would start to move the knowledge co-ordinators from a collection of individuals to a community with a common purpose.

### Design Principles

There were a small number of very strict core principles, which underpinned the design of the Green Book:

#### *A Map and Individual Guide*

It would be a guide for individuals to the “expertise and experience” which existed in NatWest Markets.

#### *Collaborative Construction*

The content would be created by one-to-one interviews, not by sending out forms for completion.

The content would be developed in collaboration with the volunteer knowledge co-ordinators.

#### *Two Types of Entries*

To qualify for an entry, you had to be either:

- An expert (with product or sector or geographical expertise); or
- Prepared to act as a local guide (or knowledge co-ordinator) to the expertise or information resources in a particular group. Without one you could not have an entry.

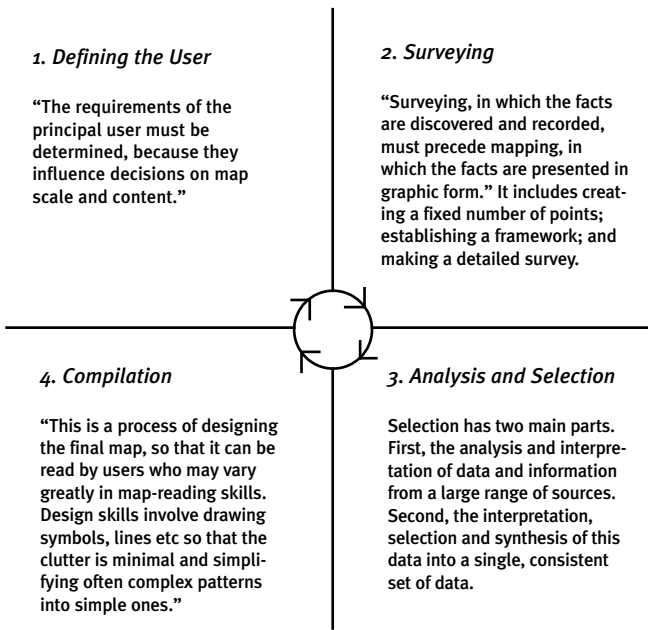
There would be no titles to indicate seniority, and entries would be intuitive, rather than organizational, in their groupings.

#### *Give-Get Principle*

You had to state your knowledge-sharing objectives—both what you wanted to offer, and what knowledge you sought to bring in from others in creating profitable transactions.

#### *Cultural Impact*

- As a publication, it allows for a firm editorial touch in breaking down arbitrary organizational boundaries;
- It encourages “serendipitous” discovery of new information about the enterprise and create unexpected insights;
- Individuals see it as something for them, made by them—users also play a major role in the design;
- It makes the statement that knowledge is people not technology.



**FIGURE ONE: THE FOUR-STAGE CARTOGRAPHIC PROCESS**

Source: *Encyclopedia Britannica* (CD-Rom), Encarta

Know how?—“*How did we start that direct mail business? What did we learn?*”

- Experience and experiments.
- Practical experiences of how to do it (or “how not to do it”) which the enterprise has gained through major strategic or change initiatives, including joint ventures, mergers and acquisitions, outsourcing, setting up new business ventures, and implementing technologies—closely linked to “know who.”

Know where?—“*Where is our research on emerging markets in Eastern Europe?*”

- The archive of the enterprise.
- Indexing, archiving and cataloging the explicit knowledge created (or sourced) by the enterprise and individuals in it to activate the library of resources and research.

Know why?—“*What are the cultural values of this place? What is the baggage? What is the vision?*”

- Story-telling, tradition and myth.
- Maps, resources, materials, events and spaces actively communicating the values and experiences of the enterprise, to be used as a means to inform future actions and strategy.

In each case effective knowledge is knowing how to go about assembling the relevant component to inform a particular decision or judgement. So “meta” knowledge (or knowledge about knowledge) of these stores of value is more important

than knowing precisely what is in them. Think of it as a collection of facts, experiences, gaps, questions and expertise which the individual then edits to provide support for a particular decision or action. The collection needs to be effectively cataloged and signposted in order for the right choices to be identified. So each store of value can be considered as a territory for mapping and navigation.

**Four Stages in the Cartographic Process**

One of the core values of charts and maps is that they are working instruments, designed with a particular user in mind. The four-stage process of geographical map-making provides a useful metaphor and reference framework for analyzing information (see Figure One). A map should do three things for an individual:

1. It should provide some kind of representation of reality (even a mythical reality) which the user can recognize.
2. It must give individual users a clear understanding of where they are in relation to this reality and the key (through symbols and meta information) to find their way round and interpret the map.
3. It should provide tools to plan or compare a route from a starting point to a destination.

Its value is in making visible a universe, land or ocean beyond the immediate grasp of the user. Once made, a map also throws up a challenge—is it accurate? The challenge then attracts counter-information, or new information. So the actual process of making the map is dynamic and creates, unexpectedly, a shared goal. There is value in bringing back stories, evidence and information to be incorporated into new versions of the map which overcomes vested interests and serves a common purpose.

**“AN ORGANIZATION NEEDS TO UNDERSTAND WHERE ITS ASSETS MIGHT BE LOCATED BEFORE IT CAN CREATE A PLAN TO UNLOCK VALUE.”**

This is what happened as the charts and skills to navigate the oceans were developed in the *Age of Discovery*. At first, map-making was sponsored by rich patrons (kings and queens) and maps represented power in the hands of a few—they provided competitive advantage. Then, as time went on, a dynamic was created between the sailors who used the charts and the cartographers at court. In effect,

## NAVIGATORS IN COMPLEX ENTERPRISES

Navigators play a key role in bringing the flow of knowledge to life, just as cab drivers do. They can form the core “community” which “grounds” knowledge, and allows for its discovery. Navigation does two things:

### 1. Structuring

It structures, filters, disseminates information and institutionalizes processes around managing information

### 2. Designing connections

It designs new ways to source, connect and distribute information, and to cultivate lateral thinking and innovation across the organization. The role of the local guides, taken in conjunction with the maps that are developed can be powerful at many levels:

1. *Identify, define and locate knowledge assets*
2. Know how, where and with whom they create value.
3. *Instill processes/tools to manage assets*
4. See culture and behavior patterns
5. *Collect and feedback stories and evidence*
6. Identify and embed information-sharing objectives—the “give:get” dynamic
7. *Act as coach, trainer*
8. Act as first point of contact/signpost to assets
9. *Be a value filter in and out of the community, not a power broker*

### What skills do they have?

1. Analysis
2. Observation
3. Editorial/publishing
4. Problem solving
5. Design
6. Pattern recognition
7. Risk taking
8. Influencing, negotiating, networking
9. Entrepreneurial
10. Coaching/training
11. Interpretation
12. Researching
13. Map reading
14. Communication

informal collaboration and information networks grew up to feed the growing demand for accuracy (and probably for recognition too). As the interest in accurate detail grew, so publishing methods changed and maps and charts became widely available to be used by the masses, rather than the few.

### Linking Maps and Navigation— The A to Z and the Taxi Driver

The *London A to Z* is a map designed to be used by everybody. But when you want to get somewhere quickly it's best used in the hands of a skilled interpreter or navigator. A black-cab driver in London, equipped with three years of “the knowledge” (the formal training every black-cab driver has to undergo), harnesses map and experience to take you to your destination.

### Information Networks

Three things are needed to bring information networks into being:

1. *Discovery*: systematic discovery of networks, communities, resources, flows and behaviors.
2. *Navigators*: the deliberate (and imaginative) creation of an effective network of navigators as a foundation for cultural change.
3. *A commitment to change and learning*.

### Navigators

Assuming that there exists a plan to “discover” knowledge assets by mapping them and that the commitment to change is already there, who are the navigators and what is their role?

Navigators play a key role in bringing the flow of knowledge to life. They can form the core community, which grounds knowledge and allows for its discovery (see sidebar left).

The combined roles of these individual navigators (which may overlap) can create powerful leverage. Each navigator can act as a “franchisee” for developing a knowledge management culture in a small community—say 10 to 50 people. This implies two things:

1. a small team, located at the center of a complex enterprise, can create reach quite quickly by identifying navigators and binding them together to achieve a common purpose.
2. two to 10 percent of the enterprise (many of whom may already be unofficially engaged in navigation roles) need to have some kind of formal knowledge

role and responsibility in order that all individuals and communities be actively touched by the necessary cultural change which achieves critical mass.

The beauty of developing this concept is that, by actively maintaining and strengthening the links between people and information (rather than separating them, which is what commonly happens in building the archive of the enterprise), two major benefits result. The first is accuracy—the information stays accurate, or, more importantly, the message in the information stays accurate. Secondly, the value of what is known grows. Information, experience and knowledge are magnetized and so a dynamic is created (see case study, *The Green Book Story*, p. 12).

### The Benefits of a Cartographic Approach

- *Maps as a cultural conjunction of space and time:* a map can provide a powerful tool for understanding how an enterprise defines itself at particular points in time, providing a pattern of interpretation to inform decision making.
- *Maps as myth-makers:* what kind of role could maps of the historical culture-values, expertise and experience of a firm play in defining ambitious boundaries for the future? Maps could take the form of political ambition, myth-making, education, scientific investigation, history, memory, consciousness, identity, values and reflection.
- *Atlases:* building an “atlas” of an enterprise can provide a “connectedness” which allows the same information to be put to many different uses.
- *Text, data and design integration:* developments in cartographic technique and production methods, which draw on new technologies, are making maps increasingly interactive and increasingly a guide to extensive bodies of information, databases, etc.
- *Developing the role of image in interactive communication:* simultaneity is a powerful tool in the ways maps can use images, text and symbols to present complex information in a visual form which is easily comprehended.
- *Maps as a stimulus to the imagination:* imagination, and its expression as innovative products, services or solutions, is a key source of competitive edge.
- *Maps as an effective means of reusing the experience of an enterprise:* using a combination of the

mnemonic opportunities which mapping presents to fix an experience in its context, and to associate the story it tells with the expert who can tell it, is a powerful device for reusing the experience of the corporation.

- *The dynamic role of maps in planning, communicating and managing change:* the very act of collaboration in framing the map creates a very different platform from which the enterprise can operate.
- *Navigators as digital switching stations:* the power of creating navigation, supported by maps, lies in knowledge capture and growth, by locating the assets and retaining precision, and simultaneously extending reach.

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