MANAGING BUSINESS KNOWLEDGE

LEARNING OBJECTIVES

◎ Understand the difference between data, information, and knowledge

◎ Define how tacit knowledge differs from explicit knowledge

◎ Describe why knowledge management is so important

◎ Understand how knowledge is generated and captured

◎ Describe a knowledge map

REAL WORLD EXAMPLES

◎ Harrah's found a way to increase revenues by collecting and then analyzing customer data

   (http://en.wikipedia.org/wiki/Harrah%27s_Entertainment)

◎ They mine their customer data completely

◎ They use loyalty cards to track customer behavior and to determine high revenue customers

◎ Determined that these customers were motivated by reduced hotel room rates, and wanted quick service

◎ They found ways to reduce lines and wait time

   ◉ High revenue customers rarely waited in any line

◎ Found ways to keep customers coming back

KNOWLEDGE MANAGEMENT

- Knowledge Management (KM) is defined as the processes needed to generate, capture, codify and transfer knowledge across the organization to achieve competitive advantage

- Technology plays a significant role in managing knowledge

- Intellectual/think capital is defined as knowledge that has been identified, captured, and leveraged to produce higher-value goods

- Intellectual property allows individuals to own their creativity

KNOWLEDGE MANAGEMENT

◎ KM is related to IS in 3 ways:

- IT makes up the infrastructure for KM systems

- KM systems make up the data infrastructure for many IS applications

- KM is often referred to as an application of IS

◎ A position called "Coordinator for International Intellectual Property Enforcement" was created by the US Department of Commerce

DATA, INFORMATION, AND KNOWLEDGE

INFORMATION

◎ Data are specific, objective facts or observations

  ⊙ The height of Mt. Everest is generally considered as "data"

◎ Data is turned into information by organizing the data into some unit of analysis (specific contexts)

  ⊙ A book on Mt. Everest geological characteristics may be considered as "information"

◎ http://en.wikipedia.org/wiki/Data

Data	Information	Knowledge
Simple observations of the world: •Easily captured •Easily structured •Easily transferred •Compact, quantifiable	Data with relevance and purpose: •Requires unit of analysis •Needs consensus on meaning •Human mediation necessary •Often garbled in transmission	Valuable information from the human mind: includes reflection, synthesis, context •Hard to capture electronically •Hard to structure •Often tacit •Hard to transfer •Highly personal to the source

More human contribution →

Greater value →

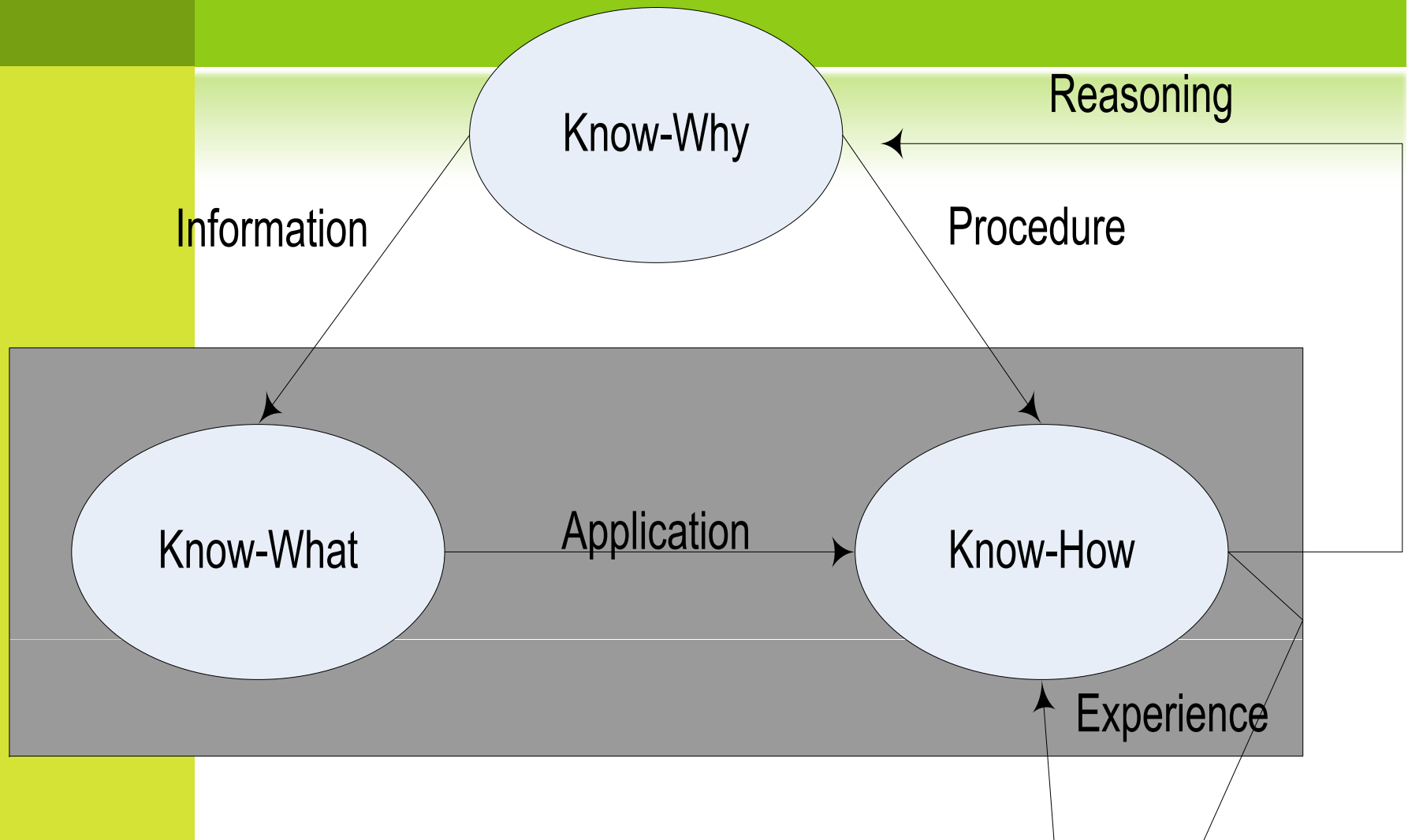**Figure 12.1** The relationships between data, information, and knowledge.

KNOWLEDGE

◎ Knowledge is a mix of contextual information, experiences, rules, and values

◎ Consider knowing –

- ⊙ What? - based upon assembling information and eventually applying it

- ⊙ How? – applying knowledge leads to learning how to do something

- ⊙ Why? – casual knowledge of why something occurs

Figure 12.2 Taxonomy of Knowledge

Tacit vs. Explicit Knowledge

- **Tacit** knowledge is personal, context-specific and hard to formalize and communicate
  - **knowing how**

- **Explicit** knowledge can be easily collected, organized and transferred through digital means
  - **knowing what**

Tacit Knowledge

•Knowing how to identify the key issues necessary to solve a problem

•Applying similar experiences from past situations

•Estimating work required based on intuition & experience

•Deciding on an appropriate course of action

Explicit Knowledge

•Procedures listed in a manual

•Books and articles

•News reports and financial statements

•Information left over from past projects

Figure 12.3   Examples of explicit and tacit knowledge

FROM MANAGING KNOWLEDGE TO BUSINESS INTELLIGENCE (BI)

From Managing Knowledge to BI

- KM is still an emerging discipline

- Business Intelligence (BI) term used to describe the set of technologies and processes used to describe business performance

  - BI is a component of KM.

- Business Analytics: use of quantitative and predictive models, and fact-based management to drive decisions

  - A subset of BI

- An organization's only sustainable competitive advantage lies with how its employees apply knowledge to business problems

WHY MANAGE KNOWLEDGE?

- Information and knowledge have become the fields in which businesses compete

- Several important factors include:

  - Sharing Best Practice

  - Globalization

  - Rapid Change

  - Downsizing

  - Managing Information and Communication Overload

  - Knowledge Embedded in Products

  - Sustainable Competitive Advantage

Sustainable Competitive Advantage
•Shorter life-cycle of innovation
•Knowledge as an infinite resource
•Direct bottom-line returns

Sharing Best Practices
•Avoid " reinventing the wheel"
•Build on previous work

Managing Overload
•Inability to assimilate knowledge
•Data organization and storage is needed

Downsizing
•Loss of knowledge
•Portability of workers
•Lack of time and resources for knowledge acquisition

Why Manage Knowledge?

Globalization
•Decreased cycle times
•Increased competitive pressures
•Global access to knowledge
•Adapting to local conditions

Embedded Knowledge
•Smart products
•Blurring of distinction between service and manufacturing firms
•Value-added through intangibles

Rapid Change
•Avoid obsolescence
•Build on previous work
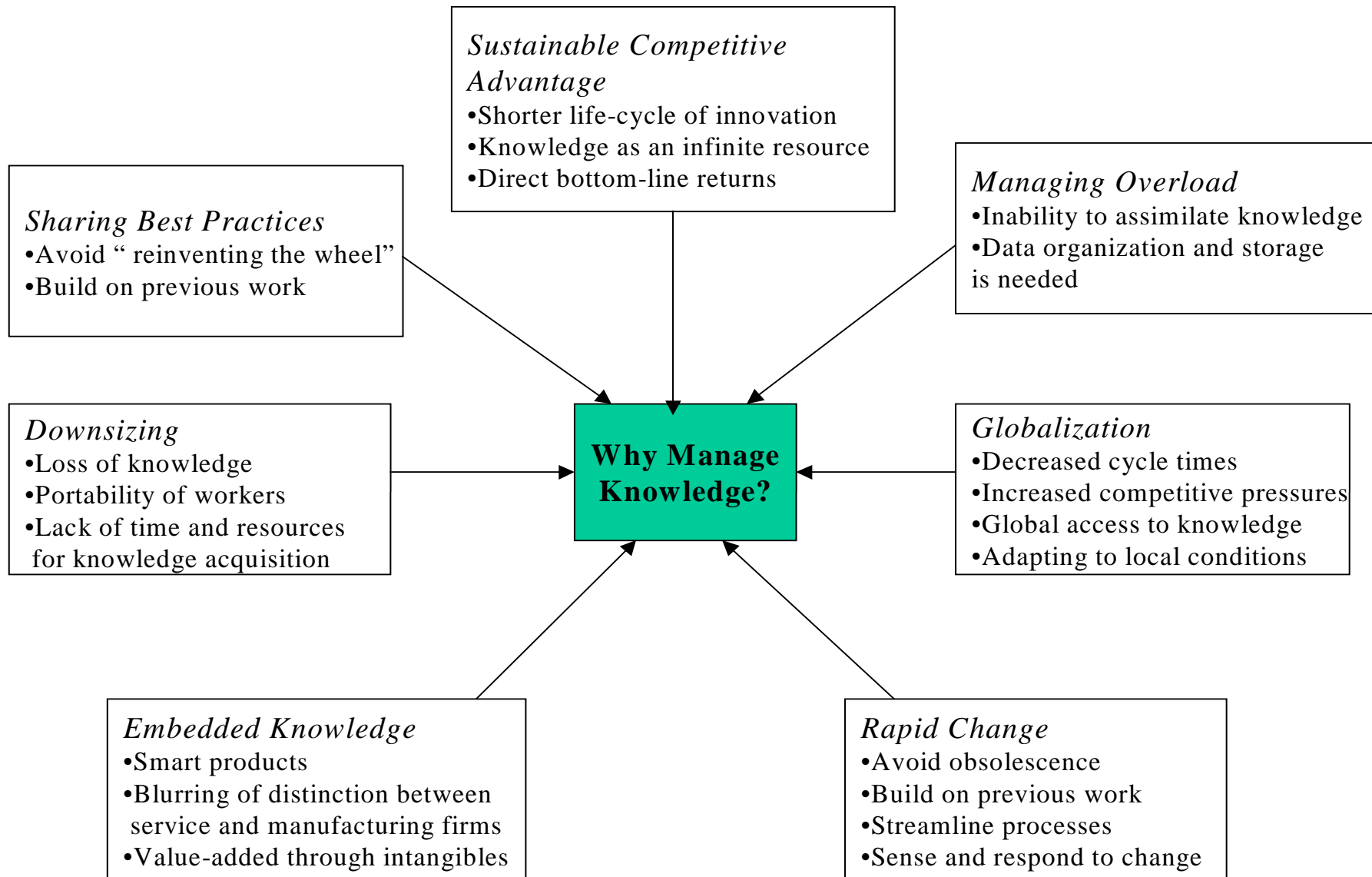•Streamline processes
•Sense and respond to change

FIGURE 12.4   REASONS FOR MANAGING KNOWLEDGE. ©IBM GLOBAL SERVICES

SHARING BEST PRACTICES

- Sharing best practices means leveraging the knowledge gained by a subset of the organization

- Increasingly important in organizations who depend on applying their expertise such as accounting, consulting and training firms

- KM systems capture best practices to disseminate their experience within the firm

- Problems often arise from employees who may be reluctant to share their knowledge (managers must encourage and reward open sharing)

GLOBALIZATION

- Historically three factors, *land*, *labor* and *capital* were the key to economic success

- *Knowledge* has become a fourth factor

- Knowledge-based businesses can grow without traditional land, labor, and capital requirements

- Key competitive factor will be how well an organization acquires and applies knowledge

OTHER FACTORS

- **Rapid change**: firms must be nimble and adaptive to compete

- **Downsizing**: sometimes the wrong people get fired when creating a leaner organization

- **Managing Info and Comm Overload**: data must be categorized in some manner if it is to be useful rather than overwhelming

- **Knowledge Embedded in Products:** the intangibles that add the most value to goods and services are becoming increasingly knowledge-based

- **Sustainable Competitive Advantage**: KM is the way to do this. Shorter innovation life cycles keep companies ahead of the competition

KNOWLEDGE MANAGEMENT PROCESSES

◎ KM involves four main processes –

- ⊙ Generation – all activities that discover "new" knowledge

- ⊙ Capture – all continuous processes of scanning, organizing, and packaging knowledge after it has been generated

- ⊙ Codification – the representation of knowledge in a manner that can be easily accessed and transferred.

- ⊙ Transfer – transmitting knowledge from one person or group to another, and the absorption of that knowledge

KNOWLEDGE GENERATION

- ◎ Concerns the intentional activities of an organization to acquire/create new knowledge

- ◎ Two primary ways are knowledge creation and knowledge sharing

- ◎ Methods include:

  - ◉ Research and Development

  - ◉ Adaptation

  - ◉ Buy or Rent

  - ◉ Shared Problem Solving

  - ◉ Communities of Practice

Buy or Rent

Shared Problem Solving

Creating (R&D)

KNOWLEDGE GENERATION

Adaptation

Communities of Practice
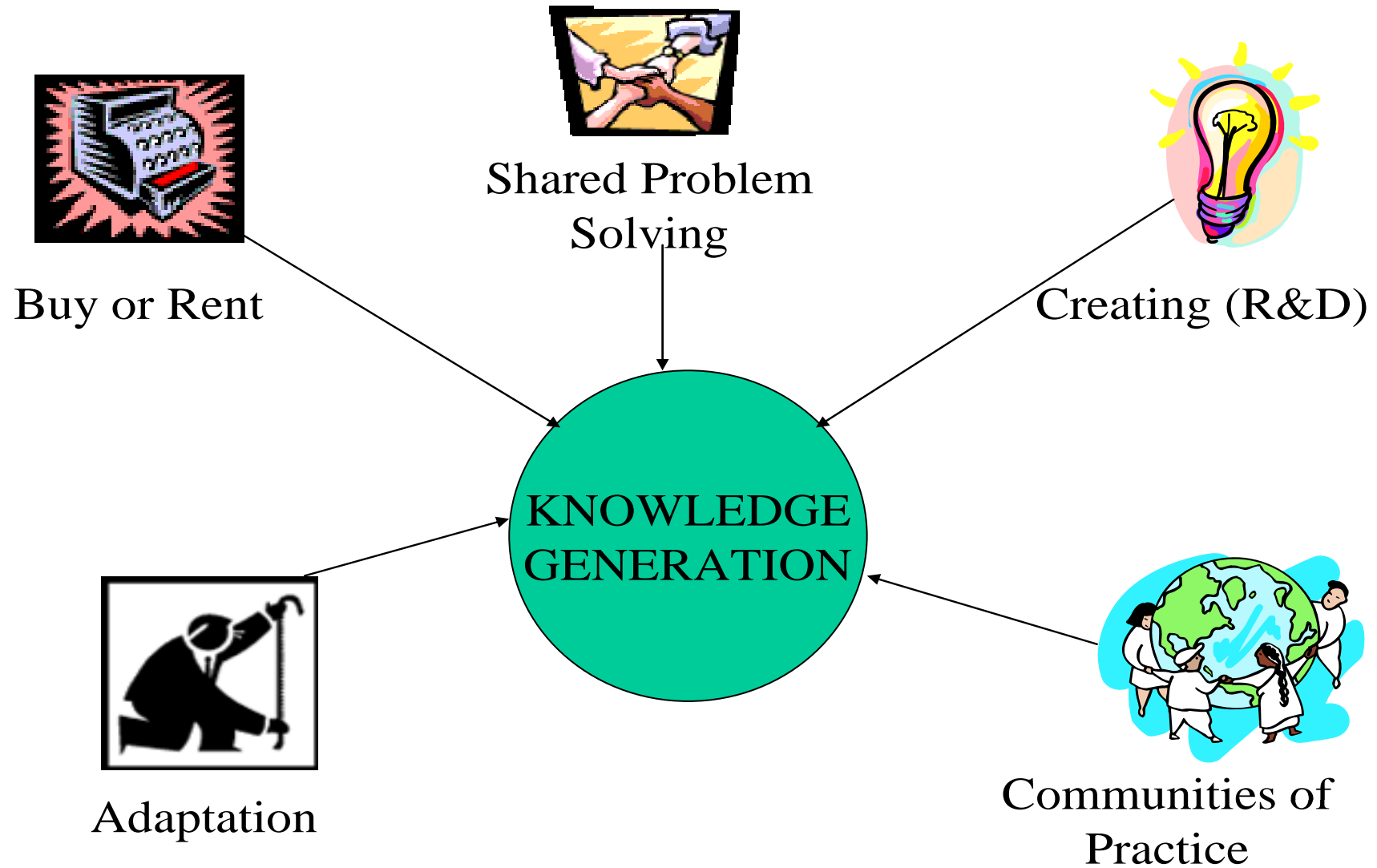
Figure 12.5   Knowledge Generation Strategies

RESEARCH AND DEVELOPMENT

◎ Knowledge generated by R&D efforts frequently arises from synthesis

◎ Synthesis brings disparate pieces of knowledge together, often from extremely diverse sources, then seeks interesting and useful relationships among them

◎ Realizing value from R&D depends largely on how effectively new knowledge is communicated and applied across the rest of the firm

ADAPTATION

- Adaptation is the ability to apply existing resources in new ways when external changes make old ways of doing business prohibitive

- A firm's ability to adapt is based on two factors: having sufficient internal resources to accomplish change and being open and willing to change

BUY OR RENT

◎ Knowledge may be acquired by purchasing it or by hiring individuals, either as employees or consultants, who possess the desired knowledge

◎ Another technique is to support outside research in exchange for rights to the first commercial use of the results

SHARED PROBLEM SOLVING

◎ Also called "fusion," shared problem solving brings together people with different backgrounds and cognitive styles to work on the same problem

◎ The creative energy generated by problem-solving groups with diverse backgrounds has been termed "creative abrasion"

COMMUNITIES OF PRACTICE

◎ Achieved by groups of workers with common interests and objectives, but not necessarily employed in the same department or location, and who occupy different roles on the organization chart

◎ Workers communicate in person, by telephone or by e-mail to solve problems together

◎ Communities of practice are held together by a common sense of purpose and a need to know what other members of the network know

KNOWLEDGE CODIFICATION

- Knowledge must be used or shared to be of value

- Codification puts the knowledge into a form that makes it easy to find and use

- It is difficult to measure knowledge in discreet units (since it changes over time)

- Knowledge has a shelf life

KNOWLEDGE CAPTURE

◎ Knowledge capture takes into account the media to be used in the codification process.

◎ The 3 main knowledge capture activities are:

- Scanning (gather "raw" information) – can be electronic or human.

- Organizing (move it into an acceptable form) – must be easy for all types of users to access.

- Designing knowledge maps (providing a guide for navigating the knowledge base)

Designing Knowledge Maps

◎ A knowledge map (see figure 12.6) serves as both a guide to where knowledge exists in an organization and an inventory of the knowledge assets available

◎ A knowledge map can consist of nothing more than a list of people, documents, and databases telling employees where to go when they need help

◎ Provides access to resources that would otherwise be difficult or impossible to find

◎ Can capture tacit knowledge through narratives

  ◉ Good stories are effective for knowledge transfer

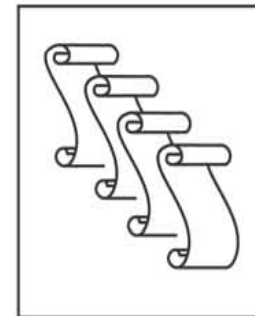A knowledge map shows the location of knowledge resources within a firm

- Individual experts
- Networks of practitioners
- Documents and databases

Experts
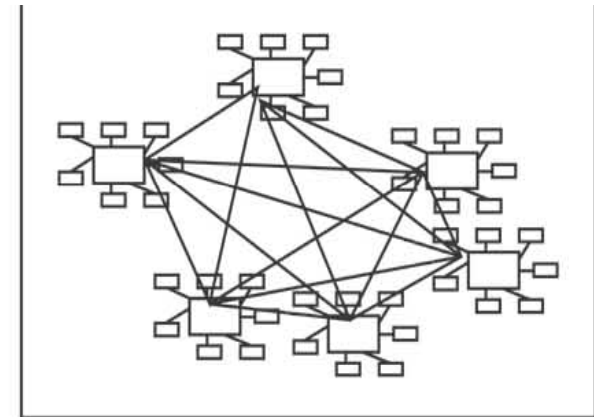
Networks

Documents/Databases

Figure 12.6   Contents of knowledge maps

KNOWLEDGE TRANSFER

◎ Nonaka and Takeuchi's Knowledge Transfer describe four different modes of knowledge conversion (transfer):

- Socialization: from tacit knowledge to tacit knowledge

- Externalization: from tacit knowledge to explicit knowledge

- Combination: from explicit knowledge to explicit knowledge

- Internalization: from explicit knowledge to tacit knowledge

COMPETING WITH BUSINESS ANALYTICS

◎ Companies find success through better use of analytics

◎ Many companies offer similar products and user comparable technologies

◎ Business processes are among the last remaining points of differentiation

◎ They fuel fact-based decision making

Components of Business Analytics

◎ Five capabilities:

- ⊙ Hard to duplicate

- ⊙ Uniqueness

- ⊙ Adaptability

- ⊙ Better than competition

- ⊙ Renewability

Component	Definition	Example
Data Repository	Servers and software used to store data	Data warehouses
Software Tools	Applications and processes for statistical analysis, forecasting, predictive modeling and optimization.	Data mining process; Forecasting software package
Analytics Environment	Organizational environment that creates and sustains the use of analytics tools	Reward system that encourages the use of the analytics tools; willingness to test or experiment
Skilled Work Force	Work force that has the training, experience and capability to use the analytics tools	Harrahs and Capital One have such work forces

Figure 12.8   Components of Business Analytics