Supporting Knowledge Work

Chapter 13

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Companies want to Manage Knowledge

- Controversial views on knowledge management
  - Knowledge can be captured in computer systems
  - Knowledge can not be captured in a machine, it only exists inside a person's head
    - Information vs. knowledge
    - **Knowledge Management** is a misnomer
      - Knowledge cannot be managed, but only shared
      - The more people are connected, the more they exchange ideas, the more their knowledge spreads and can thus be leveraged

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Tacit and Explicit knowledge

- **Tacit Knowledge** exists within a person's mind and is private and unique to each person
- **Explicit Knowledge** has been articulated, codified, and made public
- Effective knowledge management requires transferring knowledge between these two states
  - Nurturing, cultivating and harvesting knowledge
  - Knowledge management → knowledge sharing

Knowledge Management Framework
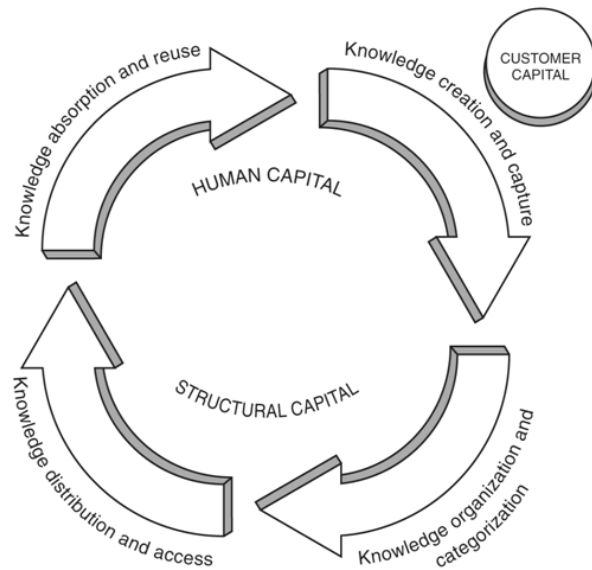
Knowledge Management Framework

- The model is circular with four stages, which represent what people generally do with knowledge
  - First they create it, or capture it from a source
  - Second, they organize it and put it into categories for easy retrieval
  - Third, they distribute it (push) or access it (pull)
  - Fourth, they absorb another's knowledge for their own use or to create more new knowledge

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Knowledge Management Framework

- These four stages create three types of capital:
  - Human capital
    - Knowledge, skills and innovativeness of employees as well as company values, culture and philosophy
  - Structural capital
    - The capabilities embedded in hardware, software, databases, organizational structure, patents, and trademarks
  - Customer capital
    - Can either be human capital (relationships with the company) or structural capital (products used from the company)

Building Human Capital

- Human capital is the knowledge, skills, and innovativeness of employees as well as company values, culture, and philosophy
- Creating it focuses on getting people together to share knowledge
- How do we get people to have more knowledge in their heads?
  - Create it
  - Capture it
  - Absorb it
  - Reuse it

Knowledge Creation and Capture

- This phase deals with generating knowledge, either by nurturing employees to create it or by acquiring it from outside

Read Case Example P.533-534

Knowledge Absorption and Reuse

- This phase of building human capital addresses the notion of getting knowledge into people's heads where it can be enhanced and reused
- One of the problems is that management often does not realize which employees are vital to information sharing because they house the organizational memory
- One way to foster sharing is via T-shaped managers
  - These are executives who have both a vertical role (such as running a business unit) and a horizontal role (such as sharing knowledge with their peers in other business units)
- Successfully transferring knowledge depends 90% of having the right culture, and 10% on technology

Read Case Example P.536-537

Building Structural Capital

- Structural capital is the capabilities embedded in hardware, software, databases, organizational structure, patents, and trademarks that support employees as well as relationships with customers
- It moves knowledge from people's heads to a tangible company asset

Building Structural Capital

- Knowledge Organization and Categorization
  - This phase is often handled by creating best practices knowledge bases
  - A few have even tried to measure intellectual capital
    - Following 2 cases
      - Improving a knowledge-support process
      - Valuing intellectual capital

Read Case Example P.538-540

Building Structural Capital

- Knowledge Distribution and Access
  - This phase emphasizes both "pushing" knowledge out to users (distribution) and accommodating users who "pull" information to themselves (access)
  - Generally, companies focus on high-tech approaches, such as implementing networks and networking tools to access human and structural capital

Read Case Example P.540-541

Building Customer Capital

- Customer capital is the strength of a company's franchise with its customers, and is concerned with its relationships and networks of associates
- When customers are familiar with a company's products or services, the company can call that familiarity customer capital
- This form of capital may be either:
  - Human (relationships with the company) or
  - Structural (products used from the company)

Read Case Example P.542-543

Knowledge Management Stages

Phase	Emphasis	Skills/People	Tools/Techniques
Creation and Capture Generate new knowledge Make tacit knowledge explicit Hire people with the right knowledge Create culture of sharing Encourage innovation Incentives for sharing	Human capital Customer capital	Knowledge harvesters Knowledge owners Mentoring/coaching Partner with universities Teamwork Business intelligence Top management	Easy-to-use capture tools E-mail Face-to-face meetings Knowledge tree Write-to-think Feedback
Organization and Categorization Package knowledge Add context to information Create categories of knowledge Create knowledge vocabulary Create metadata tags for documents Measure intellectual capital	Structural capital	Academics Knowledge editors Librarians Knowledge architects Authors Subject matter experts IS	Frameworks Cull knowledge from sources Best practices databases Knowledge bases Knowledge thesaurus Knowledge indexes Measurement tools
Distribution and Access Create links to knowledge Create networks of people Create electronic push and pull distribution mechanisms Knowledge sharing	Structural capital	Publishers Top management IS	HTML Groupware, Lotus Notes Networks, intranets Navigation aids Search tools
Absorption and Reuse Stimulate interaction among people The learning organization Informal networks	Human capital	Group facilitators Organizational developers Matchmakers Knowledge brokers	Team processes Electronic bulletin boards Communities of practice Yellow pages

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The Cultural Side of Knowledge Management

- Success in knowledge management comes as much from changing organizational behavior as it does from implementing new technology
- Knowledge management work must tap people's motivations to share and cooperate
- Cyril Brooks describes some cultural barriers as **Red Flag**.

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Watch Out for Cultural Red Flags

- There are behavioral red flags that can derail a knowledge management effort:
  - People avoiding early warnings,
  - Disagreeing with internal documents
  - People fearing they will lose their place as a knowledge gatekeeper.
- Knowledge management efforts often need to build "cultural workarounds" so that these kinds of reactions do not block the work.

Design the System to Match What the Users Value

- A knowledge management system needs to be designed to fit the people who will use it and gain value from it
- One system that works:
  - Is demand driven
  - Roots out tacit knowledge
  - Is in members' e-mail box every day
  - Is full of intriguing opinions
- It's a conversation rather than a library, which is just what these professionals need
- So beware of creating a system that supports the wrong culture

Read Case Example P.546-547

Intellectual Capital Issues

- Data, information, content, and intellectual capital all raise thorny issues that have prompted legislation in some, but not all, countries around the globe (which causes even more problems in today's intertwined, global society)
  - Varies from country to country, culture to culture
- Their "resolution" is important for global e-commerce, even though such resolution could be a long way off
- Davenport discusses three categories of issues in managing information
  - Value Issues
  - Usage Issues
  - Sharing Issues

Intellectual Capital Issues: Value Issues

- Information's value depends on the recipient and the context; most people cannot put a value on a piece of information until they have seen it.
- The only practical way to establish the value of information is to establish a price for it and see if anyone buys.
- A number of tools are being used within companies to increase the value of information:
  - Information maps (Textual charts, diagrammatic maps etc. that point to location of information)
  - Information guides (People who know where the information is)
  - Business documents
  - Groupware (Lotus Notes)

Intellectual Capital Issues: Usage Issues

- Information management is a management issue because it deals with how people use information.
- Information use is difficult to manage because:
  - The information's complexity must be preserved
  - People do not share easily
  - Technology does not change culture

Intellectual Capital Issues: Sharing Issues

- A sharing culture must be in place or the existing disincentives will thwart using a sharing system.
- But forcing employees to share information with those above them can lead to intrusive management.
- Unlimited sharing also does not work, so there need to be limits.

The Vast Arena of Computer Ethics

- New technologies pose ethical issues when they open up new possibilities for human action.
  - In the mainframe era, the perceived threat was invasion of privacy.
  - In the PC era, attention turned to the ethical issues of property rights.
  - In the Internet era, all the concerns of the past have resurfaced and become global

What is Computer Ethics?

- New technologies raise ethical issues because they create policy vacuums:
  - Ethical issues are the vacuums, and the role of computer ethics is to fill them.
- Areas of ethical concern include
  - Privacy
  - Property rights
  - Liabilities
  - Free speech
  - Professional ethics.

What is Computer Ethics?

- To address such issues, some people look to traditional moral norms and apply them to the new situations
  - E.g. extending property laws to software
- The question becomes "Should we fill the vacuums with laws or something else?"
- The ethical questions surround what people do to one another, so they involve such concepts as harm, responsibility, privacy, and property.
- IT creates a new instrumentation for human action, making new actions possible.

What is Privacy?

- Privacy includes:
  - Freedom from intrusion
  - The right to be left alone
  - The right to control information about oneself
  - Freedom from surveillance

Information Privacy

- The United States and many other countries have enacted laws to control certain types of personal information, carrying over to the e-business environment
- But the argument for personal information privacy has not "won the day," since a much stronger argument for the right to privacy can be made if privacy is seen as a social good, rather than as an individual good.

How to Increase Information Privacy?

- Five ways to increase information privacy protection include things that can be done:
  - At the national level
  - By computer professionals
  - By technology
  - In institutions
  - By individuals

Intellectual Property Rights

- The protection of intellectual property is critical in an Internet-based world because many products and services contain intellectual property, and copies are easy to make and are often as good as the original.
- There are four types of legal protection for intellectual property:
  - Copyrights
  - Patents
  - Trademarks
  - Trade secrets

Legal Jurisdiction

- Laws are written for particular jurisdictions with clear geographic boundaries, so how do those laws apply in cyberspace, which has no geographic boundaries?
- Faced with the inability to control the flow of electrons across physical boundaries, some authorities strive to impose their boundaries on cyberspace.
- Internationally, the United Nations Commission on International Trade Law has developed a model law that supports the commercial use of international contracts in electronic commerce

Online Contracting

- Contract law looks for evidence that the parties have mutually assented to the terms of a particular set of obligations before it will impose those obligations on them.
- In e-business, evidence of acceptance of a contract can be a simple click on a button saying "I Accept" or "I Agree."

Read Case Example P.558-559