Unit 4: Using Information Technology for strategic Advantage LH 7

- Strategic Uses of IT
- Reengineering Business Processes
- The role of IT
- Becoming an Agile company
- Creating a virtual company
- Building a knowledge-creating company
- Knowledge management systems

Strategic Use of IT

- Companies may use information systems **strategically**, or support efficient **everyday operation**.

- If a company emphasized strategic business uses of information technology, its management would view IT as a major competitive differentiator.

- Company use IS for strategic and business operation. If company emphasized on strategic use of information technology, management will view IT as major competitive differentiator.

- Please Read US Department of Commerce Report
OR
- MIS Report of Nepal

Fundamentals of Strategic Advantage

What is competitive strategy?

- It is a broad-based formula for how a business is going to compete, what its goals should be, and what plans and policies will be required to carry out those goals.

What is strategic role of information systems?

- It involves using information technology to develop products, services, and capabilities that give a company major advantages over the competitive forces it faces in the global marketplace.

- A strategic information system can be any kind of information system (**e.g., TPS, MIS, and DSS**) that uses information technology to help an organization gain a competitive advantage, reduce a competitive disadvantage, or meet other strategic enterprise objectives.

- **Michael Porter's classic model of competition**:
  - The rivalry of competitors within its industry
  - The threat of new entrants into an industry and its markets
  - The threat posed by substitute products that might capture market share
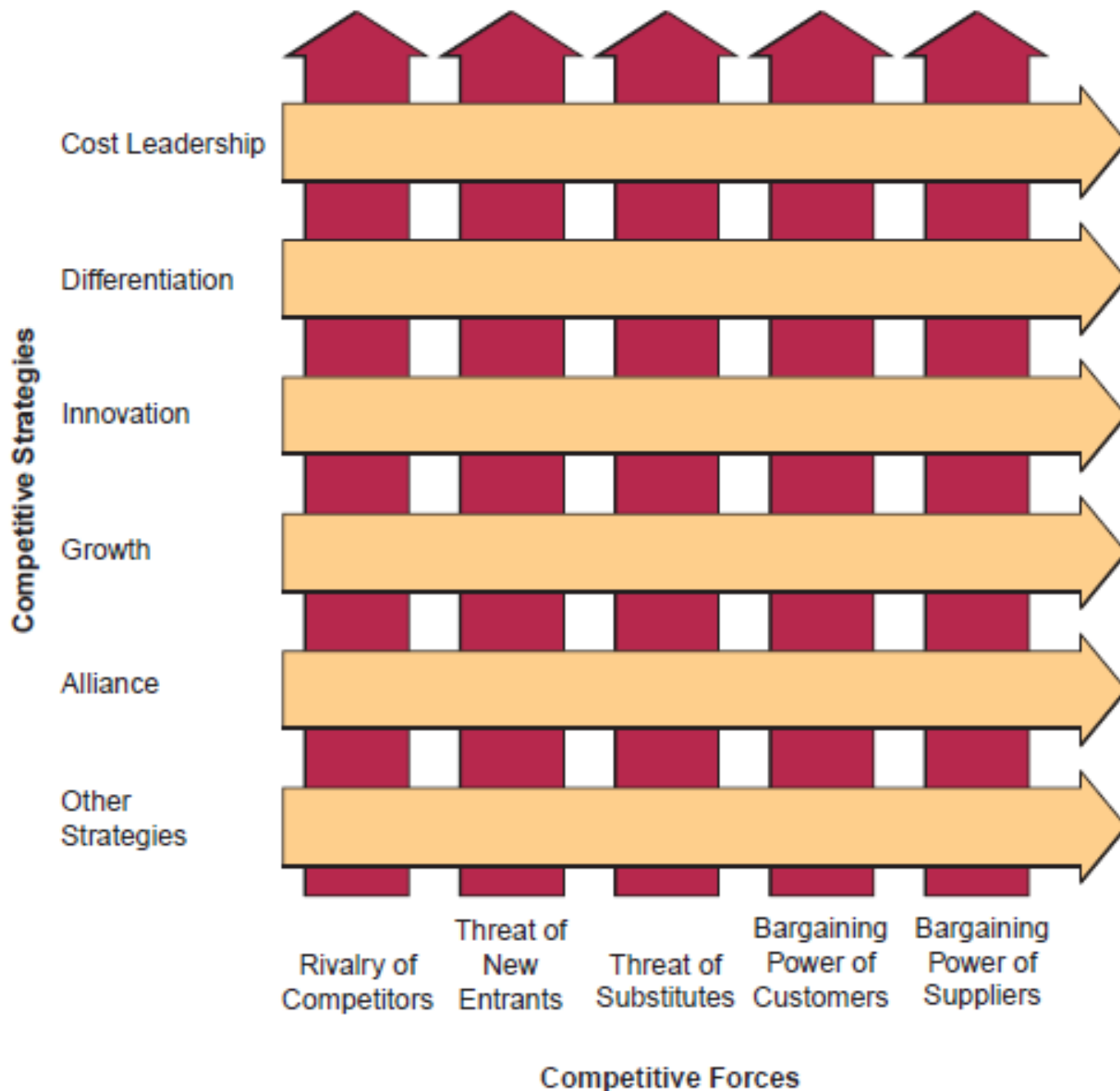 - The bargaining power of customers
  - The bargaining power of suppliers

Fig : Competitive Strategy to counter the action of competitive force in the marketplace

Fundamentals of Strategic Advantage(Con't..)

- **Competitive Strategies of Michael Porter's classic model:**
  - **Cost Leadership Strategy:** finding ways to help suppliers or customers reduce their costs or increase the costs of competitors.

  - **Differentiation Strategy:** Developing ways to differentiate a firm's products and services from those of its competitors or reduce the differentiation advantages of competitors.

  - **Innovation Strategy:** Finding new ways of doing business(*developing unique products and services or entering unique markets*).

  - **Growth Strategies:** Significantly expanding a company's capacity to produce goods and services, expanding into global markets, diversifying into new products and services, or integrating into related products and services.

  - **Alliance Strategies:** Establishing new business linkages and alliances with customers, suppliers, competitors, consultants, and other companies.

Fundamentals of Strategic Advantage(Con't..)

- How can business managers use investments in information technology to support a firm's competitive strategies?

| Basic Strategies in the Business Use of Information Technology |
|---|
| **Lower Costs** |
| • Use IT to substantially reduce the cost of business processes. |
| • Use IT to lower the costs of customers or suppliers. |
| **Differentiate** |
| • Develop new IT features to differentiate products and services. |
| • Use IT features to reduce the differentiation advantages of competitors. |
| • Use IT features to focus products and services at selected market niches. |
| **Innovate** |
| • Create new products and services that include IT components. |
| • Develop unique new markets or market niches with the help of IT. |
| • Make radical changes to business processes with IT that dramatically cut costs; improve quality, efficiency, or customer service; or shorten time to market. |
| **Promote Growth** |
| • Use IT to manage regional and global business expansion. |
| • Use IT to diversify and integrate into other products and services. |
| **Develop Alliances** |
| • Use IT to create virtual organizations of business partners. |
| • Develop interenterprise information systems linked by the Internet and extranets that support strategic business relationships with customers, suppliers, subcontractors, and others. |

Examples of how companies have used information technology to implement five competitive strategies for strategic advantage

Strategy	Company	Strategic Use of Information Technology	Business Benefit
Cost Leadership	Dell Computer	Online Build to order	Lowest Cost Producer
Differentiation	indriver	Online Fare Agreement	Increase in Market Share
Innovation	Amazon.com	Online full service customer system	Market leadership
Growth	Walmart	Merchandise ordering by global satellite network	Market Leadership
Alliance	Walmart	Automatic inventory management	Reduced inventory cost/ increase sales

Fundamentals of Strategic Advantage(Con't..)

- There are many strategic initiatives available to a firm in addition to the five basic strategies of cost leadership, differentiation, innovation, growth, and alliance. They include:

  - Locking in customers or suppliers: Investments in information technology can allow a business to lock in customers and suppliers (and lock out competitors) by building valuable new relationships with them.

  - Building switching costs: It emphasis in strategic information systems has been to find ways to create switching costs in the relationships between a firm and its customers or suppliers(*It protects customer from change to competitor's service*).

  - Raising barriers to entry: discourage or delay other companies from entering a market.

  - Leveraging investment in information technology: Investing in information technology enables a firm to build strategic IT capabilities so that they can take advantage of opportunities when they arise.

- **Building a Customer Focused Business**: The ability to help them keep customers loyal, anticipate their future needs, respond to customer concerns, and provide top-quality customer service(this strategic focus on customer value). Internet technologies can make customers the focal point of customer relationship management (CRM) and other e-business applications.

How a customer-focused business builds customer value and loyalty using Internet technologies
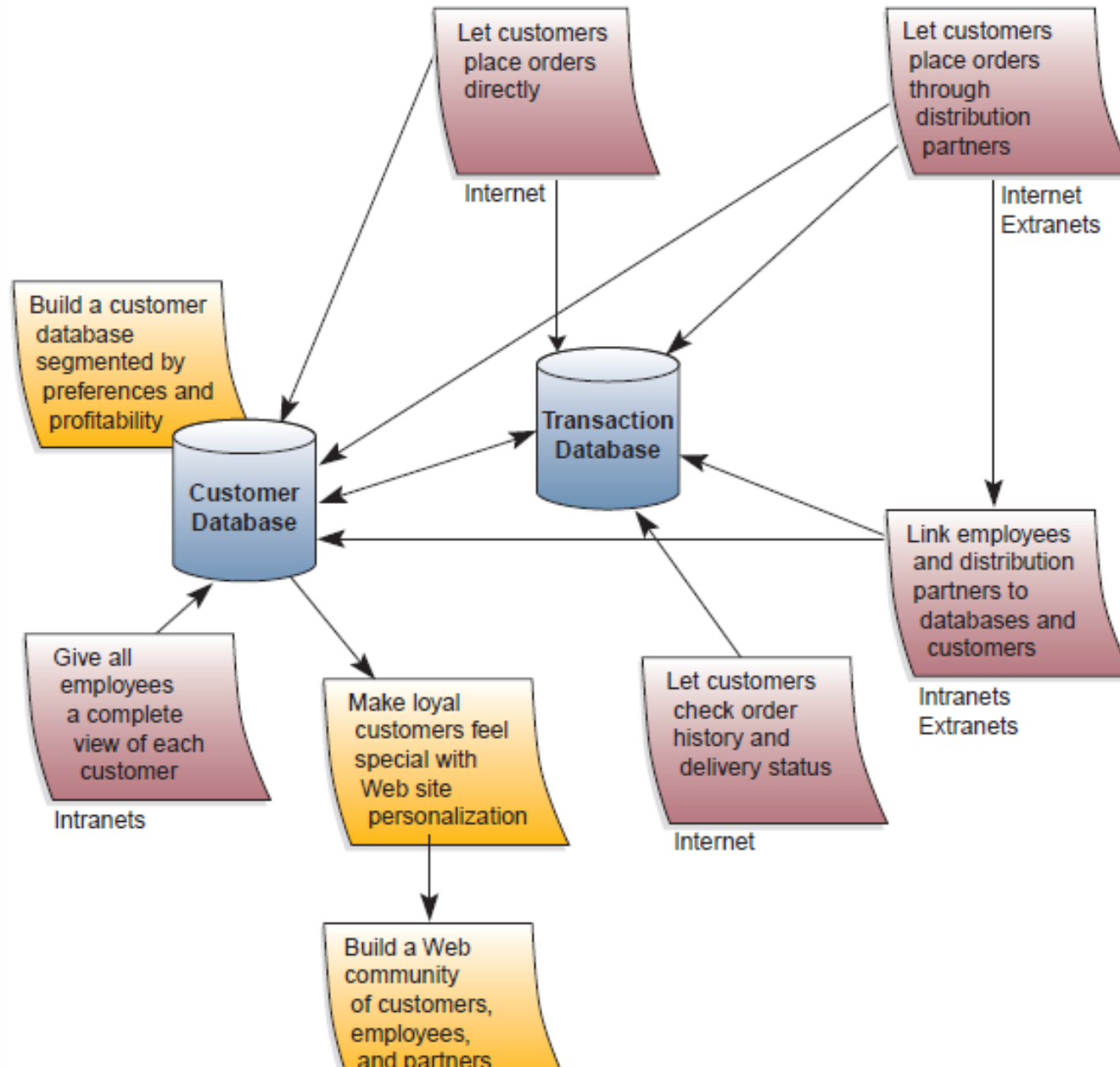
Using Information Technology for Strategic Advantage

How does the organization view IT?

- If a company emphasized strategic business uses of information technology, its management would view IT as a major competitive differentiator.

What is business process reengineering (BPR)?

- It is a fundamental rethinking and radical(large) redesign of business processes to achieve dramatic improvements in cost, quality, speed, and service.

What is role of Information Technology in reengineering?

- It plays a major role in reengineering most business processes(*Internet technologies can substantially increase the efficiency of business processes such as communications and collaboration among the people responsible for their operation and management*).

Reengineering Business Processes:

- Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in cost, quality, speed, and service.

- BPR combines a strategy of promoting business innovation with a strategy of making major improvements to business processes so that a company can become a much stronger and more successful competitor in the marketplace.

- **The potential payback of reengineering is high, but also is its level of risk and disruption to the organizational environment.**
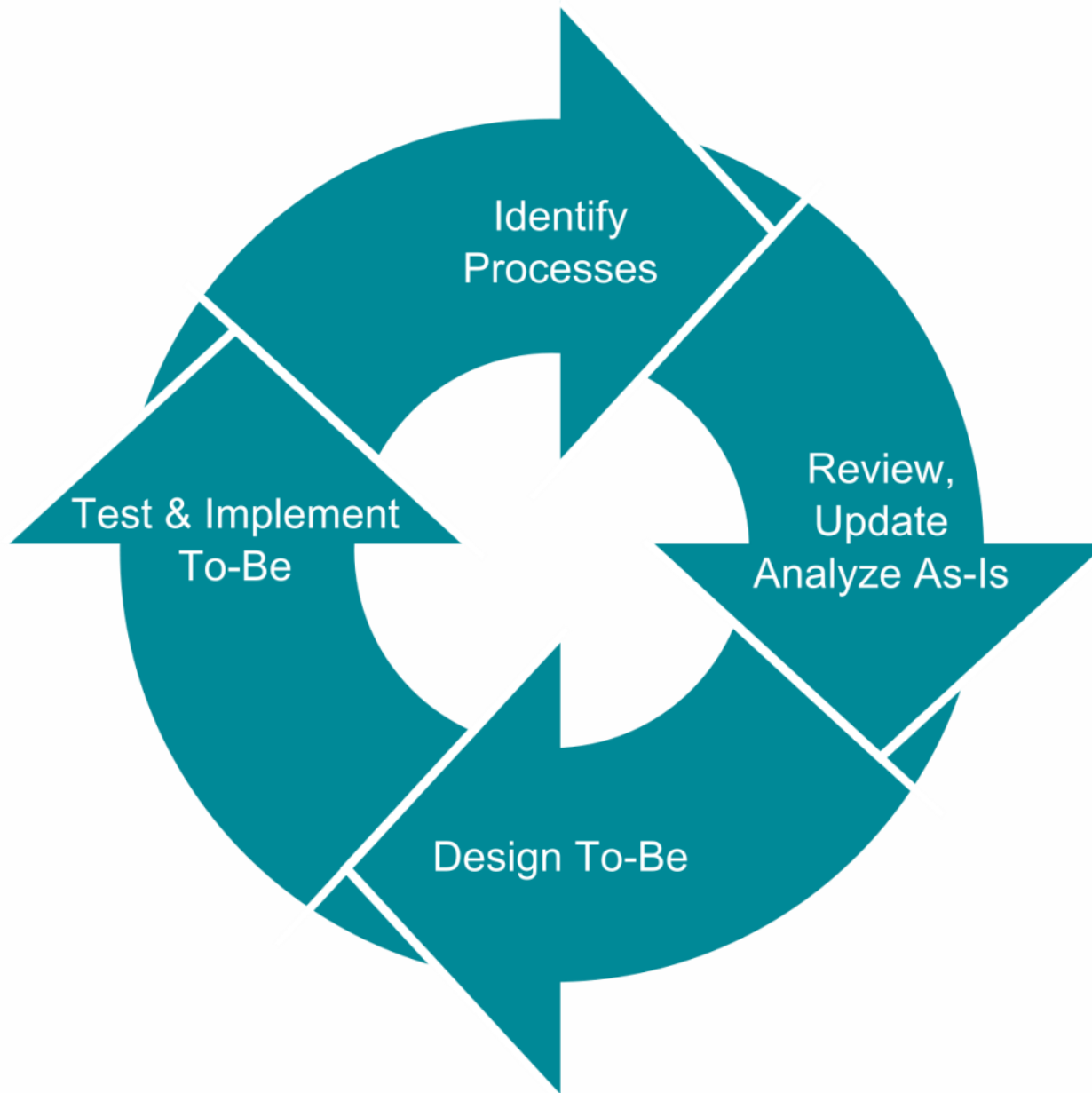
The key ways that business process reengineering differs from business improvement

	Business Improvement	Business Process Reengineering
Level of Change	Incremental	Radical
Process Change	Improved new version of process	Brand-new process
Starting Point	Existing processes	Clean slate
Frequency of Change	One-time or continuous	Periodic one-time change
Time Required	Short	Long
Typical Scope	Narrow, within functions	Broad, cross-functional
Horizon	Past and present	Future
Participation	Bottom-up	Top-down
Path to Execution	Cultural	Cultural, structural
Primary Enabler	Statistical control	Information technology
Risk	Moderate	High

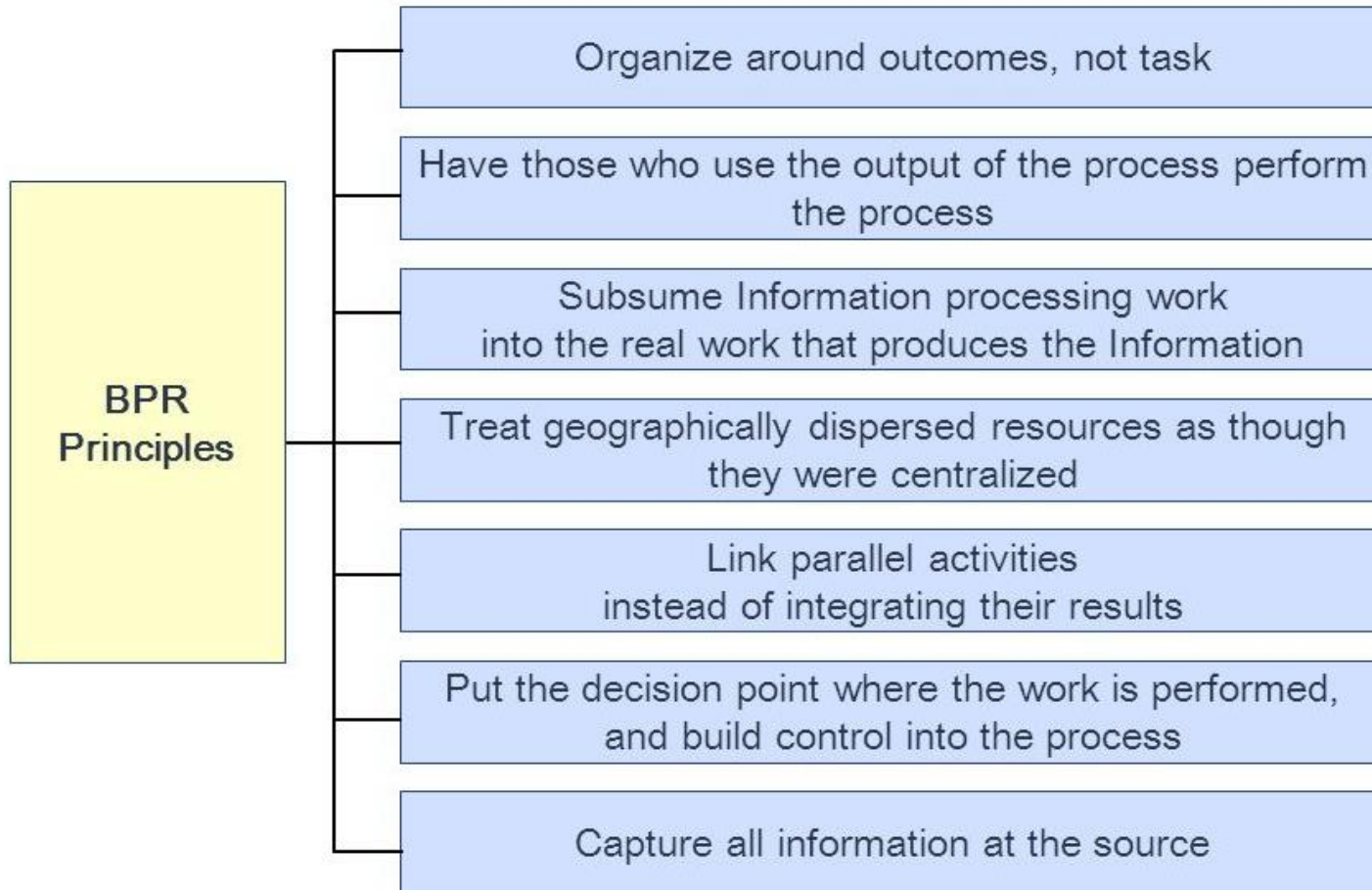**Importance of Information technology in Reengineering Process**

- Information technology plays a major role in reengineering business processes.

  – The speed, information processing capabilities and connectivity of computers and Internet technologies can substantially increase the efficiency of business processes,

  – communication and collaboration among the people responsible for their operation and management.

Fig : Steps in Business Process Reengineering

Business Process Reengineering Cycle

7 principle of BPR to ensure Successful implementation

BPR Principles

- Organize around outcomes, not task
- Have those who use the output of the process perform the process
- Subsume Information processing work into the real work that produces the Information
- Treat geographically dispersed resources as though they were centralized
- Link parallel activities instead of integrating their results
- Put the decision point where the work is performed, and build control into the process
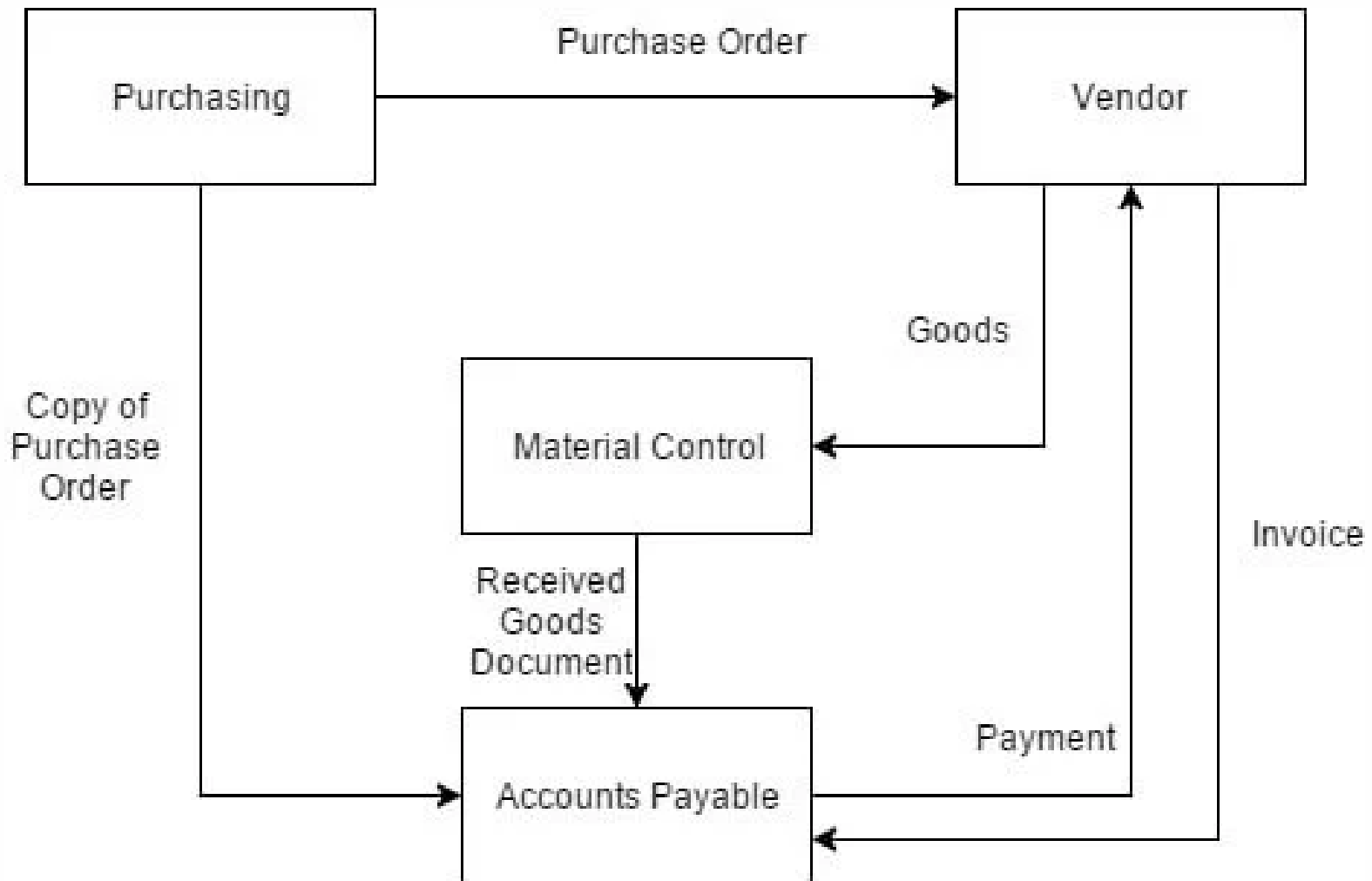- Capture all information at the source

Fig : Example of BPR

Examples of information technologies that support reengineering the order management processes

Reengineering Order Management
• Customer relationship management systems using corporate intranets and the Internet.
• Supplier-managed inventory systems using the Internet and extranets.
• Cross-functional ERP software for integrating manufacturing, distribution, finance, and human resource processes.
• Customer-accessible e-commerce Web sites for order entry, status checking, payment, and service.
• Customer, product, and order status databases accessed via intranets and extranets by employees and suppliers.

Becoming an Agile Competitor:

- Agility in competitive performance is the ability of a business to prosper in rapidly changing, continually fragmenting global markets for high-quality, high-performance, customer-configured products and services.

An agile company can:

- Make a profit in markets with broad product ranges and short model lifetimes.

- Process orders individually or in arbitrary lot sizes.

- Offer individualized products while maintaining high volumes of production.

- Reduced Risk of Project Failure.

- **What is strategy that make company become agile company?**
  - The business must ensure that customers perceive the products or services of an agile company as solutions to their individual problems(*focus on price products*).

  - An agile company cooperates with customers, suppliers, other companies, and even with its competitors(*It allows a business to bring products to market as rapidly and cost-effectively as possible*).

  - An agile company organizes so that it thrives on change and uncertainty. *It uses flexible organizational structures keyed to the requirements of different and constantly changing customer opportunities*.

  - An agile company leverages the impact of its people and the knowledge they possess. *An agile company provides powerful incentives for employee responsibility, adaptability, and innovation*.

Agile companies depend heavily on information technology to:

- Enrich its customers with customized solutions to their needs.

- Cooperate with other businesses to bring products to market as rapidly and cost-efficiently as possible.

- Combine the flexible, multiple organizational structures it uses.

- Leverage the competitive impact of its people and information resources.

How information technology can help a company be an agile competitor

Type of Agility	Description	Role of IT	Example
Customer	Ability to co-opt customers in the exploitation of innovation opportunities • As sources of innovation ideas • As cocreators of innovation • As users in testing ideas or helping other users learn about the idea	Technologies for building and enhancing virtual customer communities for product design, feedback, and testing	eBay customers are its de facto product development team because they post an average of 10,000 messages each week to share tips, point out glitches, and lobby for changes
Partnering	Ability to leverage assets, knowledge, and competencies of suppliers, distributors, contract manufacturers, and logistics providers in the exploration and exploitation of innovation opportunities	Technologies facilitating interfirm collaboration, such as collaborative platforms and portals, supply chain systems	Yahoo! has accomplished a significant transformation of its service from a search engine into a portal by initiating numerous partnerships to provide content and other media-related services from its Web site
Operational	Ability to accomplish speed, accuracy, and cost economy in the exploitation of innovation opportunities	Technologies for modularization and integration of business processes	Ingram Micro, a global wholesaler, has deployed an integrated trading system allowing its customers and suppliers to connect directly to its procurement and ERP systems

Using Information Technology for Strategic Advantage

What is Virtual company(*virtual corporation or virtual organization*)**?**

- **It** is an organization that uses information technology to link people, organizations, assets, and ideas.

- **Why do people form virtual companies?**
    - Share infrastructure and risk with alliance partners.
    - Link complementary core competencies.
    - Reduce concept-to-cash time through sharing.
    - Increase facilities and market coverage.
    - Gain access to new markets and share market or customer loyalty.
    - Migrate from selling products to selling solutions.
    - The ultimate goal is to provide innovative, high quality products or services instantaneously in response to customer demand.

Creating a Virtual Company:

- A virtual company (also called a virtual corporation or virtual organization) is an organization that uses information technology to link people, assets, and ideas.

- Virtual companies also form interenterprise information systems with suppliers, customers, subcontractors, and competitors.

- Internet and other information technologies play an important role in providing computing and telecommunication resources to support the **communications, coordination, and information flows needed.**

- Managers of a virtual company depend on IT to help them **manage a network of people, knowledge, financial, and physical resources** provided by many business partners to quickly take advantage of rapidly changing market opportunities.

Characteristics of Virtual Company

- No boundary
- Pooling of resources
- Geographical dispersion
- Changing Participants
- Electronic Communication
- Flat organization
- Flexible and Dynamic
- Multi-disciplinary Team
- Customer Orientation

Dimension	Traditional	Virtual
(Physical) Structure	Building	Platform
Boundary	Fixed entity	Permeable
Location	Place	Space
Governance	Command and control	Community and coalition
Existence	Finalization	Flux

Advantage and Disadvantage of Virtual Organization

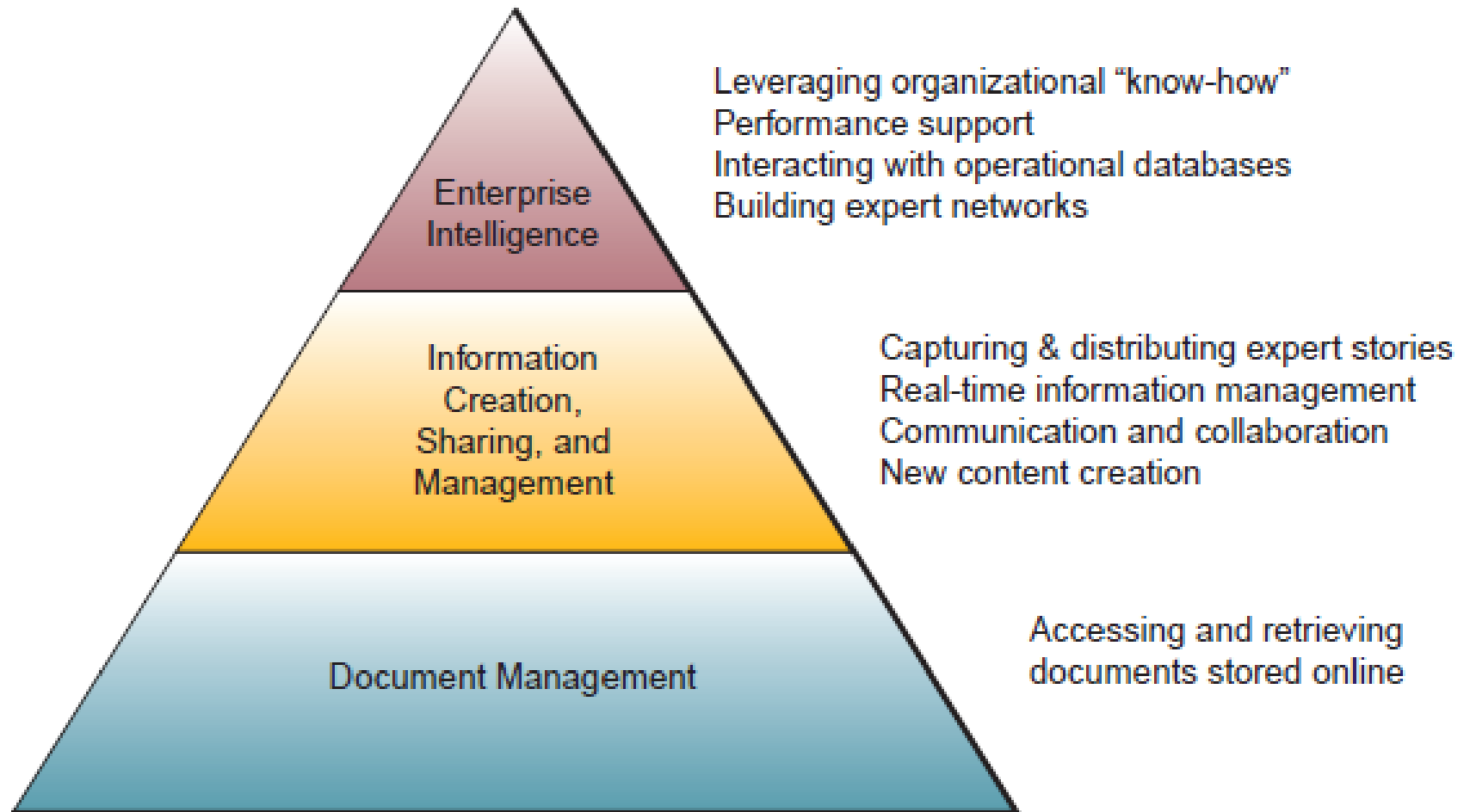| Advantage	Disadvantage
Greater Flexibility	Cost of Technology
Saves Time and Cost	Lack of Physical interaction
Eliminate the lack of access to experts	Conflicts
Increase Communication and Learning	Lack of trust and Collaboration
Diversity	Difficult to control
Dynamic Team Members	Problem with external partner

A virtual company uses the Internet, intranets, and extranets to form virtual workgroups and support alliances with business partners
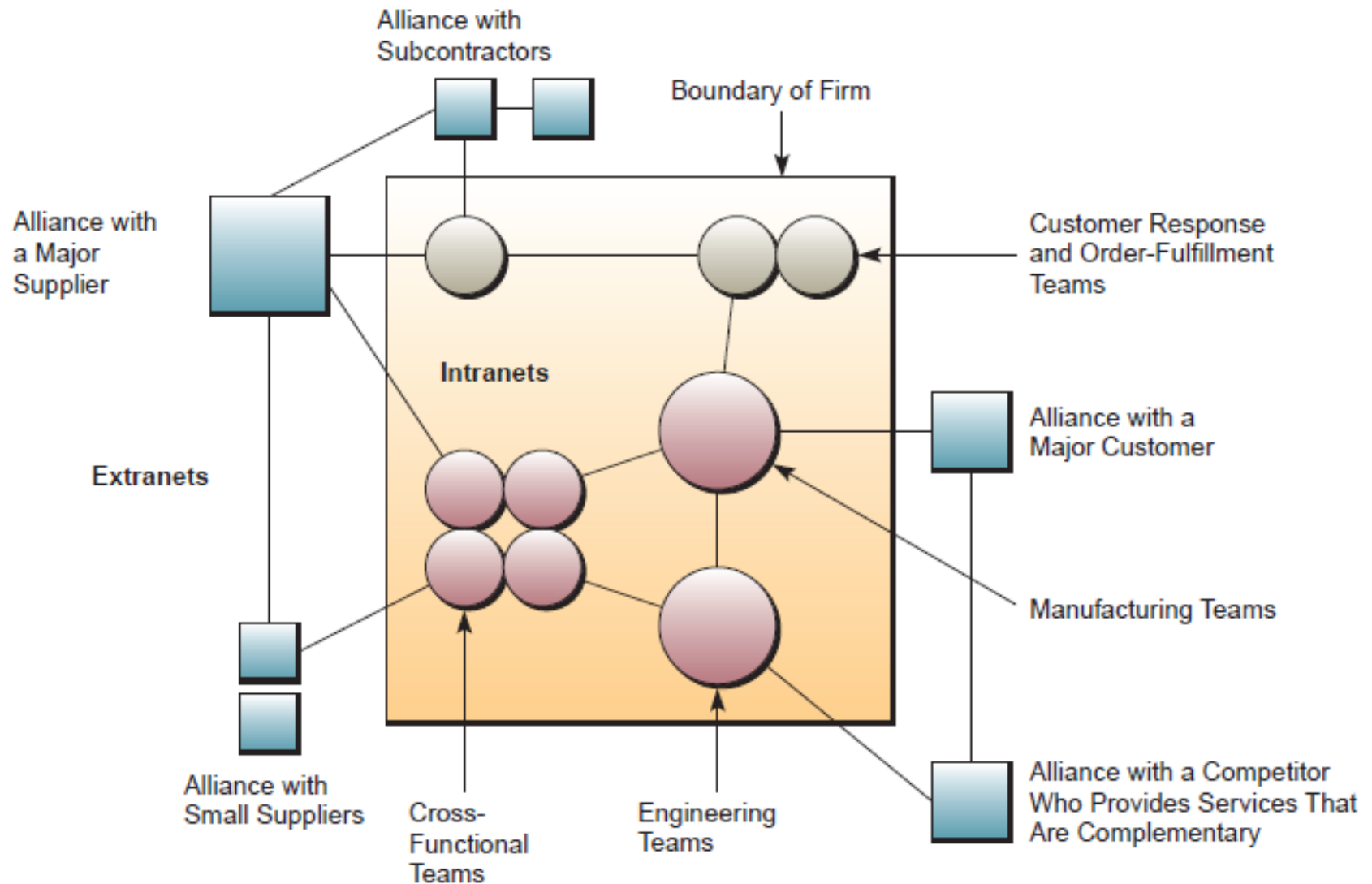
Knowledge Creating Company

- To many companies today, lasting competitive advantage can only be theirs if they become knowledge-creating companies or learning organizations.

- That means consistently creating new business knowledge, disseminating it widely throughout the company, and quickly building the new knowledge into their products and services.

- Knowledge-creating companies exploit two kinds of technology:

- **Explicit Knowledge** - data, documents, things written down or stored on computers.

- **Tacit Knowledge –** "how-tos" of knowledge, which reside in workers.

- Successful **knowledge management** creates techniques, technologies, and rewards for getting employees to share what they know and to make better use of accumulated workplace knowledge.

Knowledge management can be viewed as three levels of techniques, technologies, and systems that promote the collection, organization, access, sharing, and use of workplace and enterprise knowledge

Enterprise Intelligence

Leveraging organizational "know-how"
Performance support
Interacting with operational databases
Building expert networks

Information Creation, Sharing, and Management

Capturing & distributing expert stories
Real-time information management
Communication and collaboration
New content creation

Document Management

Accessing and retrieving documents stored online

Knowledge Management Systems

- Many companies are building **knowledge management systems (KMS)** to manage organizational learning and business know-how.

- The goal of KMS is to help knowledge workers create, organize, and make available important business knowledge, wherever and whenever it's needed in an organization.

- This includes processes, procedures, patterns, reference works, formulas, "best practices," forecasts, and fixes.

- Internet and intranet websites, groupware, data mining, knowledge bases, discussion forums, and videoconferencing are some of the key information technologies for gathering, storing, and distributing this knowledge.

Characteristics of KMS:

- KMSs are information systems that facilitate organizational learning and knowledge creation.

- KMSs use a variety of information technologies to collect and edit information, assess its value, disseminate it within the organization, and apply it as knowledge to the processes of a business.

- KMSs are sometimes called adaptive learning systems. That's because they create cycles of organizational learning called learning loops, where the creation, dissemination, and application of knowledge produces an adaptive learning process within a company.

- KMSs can provide rapid feedback to knowledge workers, encourage behavior changes by employees, and significantly improve business performance.