Washington University of Virginia
BUS 510E ORGANIZATION THEORY
Lecture Notes #9
Information Technology for Control and Coordination

Primary References
Hatch Mary Jo and Ann L. Cunliffe. *Organization Theory*, 2nd. New York: Oxford, 2006, 141-73.
Daft, Richard L. *Organization Theory & Design*, 11thed. Mason, OH: South-Western, 2012, 308-47.

I. Information Technology (IT) Evolution

Evolution of Organizational Applications of IT

Management Level - System Complexity	***Applications***
1. Operations	*Transaction processing systems *Data warehousing *Data mining
2. Decision Making and Control	*Management information systems *Decision support systems *Executive information systems *Management control systems *Balanced scorecard
3. Adding Strategic Value	Internal Coordination *Intranets *Social networking *Knowledge management *Enterprise resource planning
	External Coordination *Integrated enterprise *Customer relationships *E-business

Initially, IT systems in organizations were applied to operations. These initial applications were based on the notion of machine-room efficiency - that is, current operations could be performed more efficiently with the use of computer technology. The goal was to reduce labor costs by having computer take over some tasks. These systems became known as **transaction processing systems** (TPS), which automate the organization's routine, day-to-day business transactions. A TPS collects data from transactions such as sales, purchase from suppliers, and inventory changes, and stores them in a database.

In recent years, the use of data warehousing and business intelligence software has expanded the usefulness of these accumulated data. **Data warehousing** is the use of huge databases that combine all of a company's data and allow users to access the data directly, create reports, and obtain responses to what-if-questions. Building a database at a large corporation is a huge undertaking that includes defining

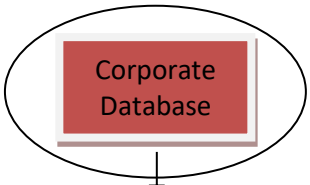
hundreds of gigabytes of data from many existing system, providing a means of continually updating the data, making it all compatible, and linking it to software that make it possible for users to search and analyze the data and produce helpful reports. Software for business intelligence, also called analytic software, helps users make sense of all these data. **Business intelligence** refers to the high-tech analysis of a company's data in order to make better strategic decisions. Sometimes referred to as data mining, business intelligence means searching out and analyzing data from multiple sources across the enterprise, and increasingly from outside sources as well, to identify patterns and relationships that might be significant. Retailers are some of the biggest users of business intelligence software.

By collecting the right data and using business intelligence software to analyze it and spot trends and patterns, manager can make smarter decisions. IT evolved to more complex systems for managerial decision making and control of the organization, the second state illustrated in above exhibit. Further advancements have led to teh use of IT to add strategic value b providing tight coordination both internally and with external customers, suppliers, and partners, the highest level of application as shown in above.

II. Information for Decision Making and Control

Through the application of more sophisticated computer-based systems, managers have tools to improve the performance of departments and the organization as a whole. These applications use information stored in corporate databases to help managers control the organization and make important decisions. Management information systems - including information reporting systems, decision support systems, and executive information systems - facilitate rapid and effective decision making. Elements for control include various management control systems, including executive dashboards, and a procedure known as the balanced scorecard. In an organization, these systems are interconnected, as illustrated by the dashed lines in the figure below. The systems for decision making and control often share the same basic data, but the data and reports are designed and used for a primary purpose of decision making versus control.

Figure: Information Systems for Decision Making and Managerial Control



Information for Decision Making Management Information Systems		**Information for Control** Feedback Control Systems
1. Executive Information Systems 2. Reporting Systems Decision Support Systems		1. Balanced Scorecard 2. Management Control Systems; Behavior vs. Outcome Control

A. Organizational Decision-Making Systems

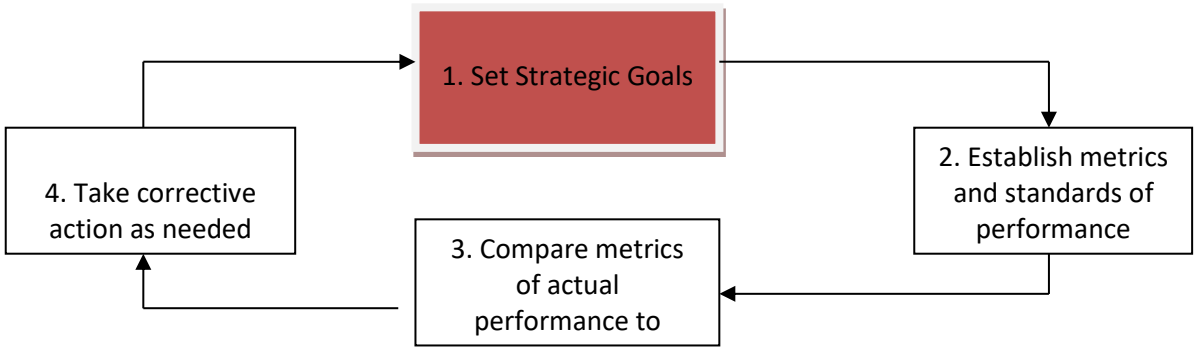
A **management information system** (MIS) is a computer-based system that provides information and support for managerial decision making. The MIS is supported by the organization's transaction processing systems and by organizational and external databases. The **information reporting system**, the most common form of MIS, provides mid-level managers with reports that summarize data and support day-to-day decision making. For example, when managers need to make decisions about production scheduling, they can review data on the anticipated number of orders within the next month, inventory levels, and availability of human resources.

An **executive information system** (EIS) is a higher-level application that facilitates decision making at the highest levels of management. These systems are typically based on software that can convert large amounts of complex data into pertinent information and provide that information to top managers in a timely fashion. For example, Motorola's Semiconductor Products Sector, based in Austin, Texas, had massive amounts of stored data, but managers couldn't find what they needed. The company implemented an EIS using online analytical processing software so that more than a thousand senior executives, as well as managers and project analysts in finance, marketing, sales, and accounting departments around the world, could quickly and easily get information about customers buying trends, manufacturing, and so forth, right from their desktop computers without having to learn complex and arcane search commands.

A **decision support system** (DSS) provides specific benefits to managers at all levels of the organization. These interactive, computer-based systems rely on decision models and integrated databases. Using decision-support software, users can pose a series of what-if questions to test possible alternatives. Based on assumptions used in the software or specified by the user, managers can explore various alternatives and receive information to help them choose the alternative that will likely have the best outcome. The German airline Deutche Lufthansa AG have collaborated on a valuable computerized system that help make decision to improve luggage handling.

@ Feedback Control Model

A Simplified Feedback Control Model (See Lecture 1)



Another primary use of information in organizations is for control. Effective control systems involve the use of feedback to determine whether organizational performance meets established standards to help the organization attain its goals. Managers set up systems for organizational control that consist of the four key steps in the feedback control model illustrated in the above figure.

B. Management Control Systems

Management control systems are broadly defined as the formal routines, reports, and procedures that use information to maintain or alter patterns in organizational activities. These feedback control systems include the formalized information-based activities for planning, budgeting, performance evaluation, resource allocation, and employee rewards. Targets are set in advance, outcomes compared to targets, and variances reported to managers for corrective action. Following table lists four control system elements that are often considered the core of management control systems: the budget and financial reports; periodic nonfinancial statistical reports; reward systems; and quality-control systems.

Exhibit: Management Control Systems

Subsystem	***Content and Frequency***
Budget, financial reports	Financial, resource expenditures, profit and loss; monthly
Statistical report	Nonfinancial outputs; weekly or monthly, often computer-based
Reward systems	Evaluation of managers based on department goals and performance, set rewards; yearly
Quality control systems	Participation, benchmarking guidelines, Six Sigma goals; continuous

1. Financial Reports: The *budget* is typically used to set targets for the organization's expenditures for the year and then report actual costs on a monthly or quarterly basis. As a means of control, budgets report actual as well as planned expenditures for cash, assets, raw materials, salaries, and other resources so that managers can take action to correct variances. Sometimes, the variance between budgeted and actual amounts for each line item is listed as a part of the budget. Managers also rely on a variety of other financial reports.. The *balance sheet* shows a firm's financial position with respect to assets and liabilities at a specific point in time. An *income statement*, sometimes called a profit and loss statement, summarizes the company's financial performance of a given time interval, such as for the week, month, or year. The bottom line indicates the net income - profit or loss - for the given time period. Moreover, a *cash flow statement* indicates the available amount of cash a company can use at a specific time

2. Nonfinancial Reports: Managers use periodic statistical reports to evaluate and monitor nonfinancial performance, such as customer satisfaction, employee performance, or rate of staff turnover. For e-commerce organizations, important measurements of nonfinancial performance include metrics such as *stickiness* (how much attention a site gets over time), the *conversion rate*, the ratio of buyers to site visitors, and *site performance data*, such as how long it takes to load a page or how long it takes to place an order. E-commerce managers regularly review reports on conversion rates, customer drop-off, and other metrics to identify problems and improve their business. For all organizations, nonfinancial reports typically are computer based and may be available daily, weekly, or monthly.

Managers often track both nonfinancial and financial data by means of an ***executive dashboard***. An executive dashboard, sometimes called a business performance dashboard, is a software program that presents key business information in graphical, each-to-interpret form and alerts managers to any deviations or unusual patterns in the data. Dashboards pull data from a variety of organizational systems and databases; gauge the data against key performance metrics; and pull out the right nuggets of information to deliver to managers' laptops or PCs for analysis and action. For example, dashboards

enable managers to quickly see when performance thresholds related to patient wait times or other metrics aren't being met at various hospitals.

3. Reward Systems offer incentives for managers and employees to improve performance and meet departmental goals. Managers and employees evaluate how ell previous goals were met, set new goals, and establish rewards for meeting the new targets. Rewards are often tied to the annual performance appraisal process, during which managers assess employee performance and provide feedback to help people improve performance and obtain rewards.

4. Quality-control Systems involve training employees in quality-control methods, setting targets for employee participation, establishing benchmarking guidelines, and assigning and measuring *Six Sigma* goals. Benchmarking means the process of persistently measuring products, services, and practices against tough competitors or other organizations recognized as industry leaders. Six Sigma specifically means a highly ambitious quality standard that specifies a goal or no more than 3.4 defects per million parts. However, it has deviated from that precise meaning to refer to a whole set of control procedures that emphasize the relentless pursuit of higher quality and lower costs. The discipline is based on a methodology referred to as DMAIC (Define, Measure, Analyze, Improve, and Control, pronounced de-MAY-ic), which provides a structured way for organizations to approach and solve problems. Many large companies have saved millions of dollars by rooting out inefficiencies and waste through Six Sigma processes.

The budget is used primarily to allocate resource inputs. Managers use the budget for planning the future and reducing uncertainty about the availability of human and material resources needed to perform department tasks. Computer-based statistical reports are used to control outputs. These reports contain data about output volume and quality and other indicators that provide feedback to middle management about departmental results. The reward system and quality control system are directed at the production process. Quality control systems specify standards for employee participation, teamwork, and problem solving. Reward systems provide incentives to meet goals and can help guide and correct employee behavior. Manager may also use direct supervision to keep departmental work activities within desired limits.

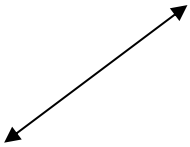
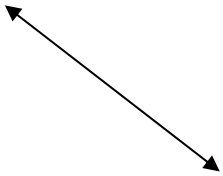
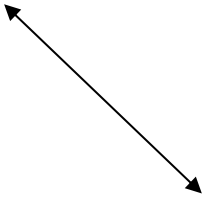
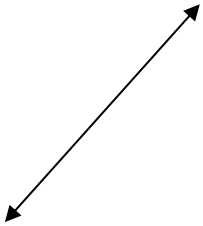
III. The Level and Focus of Control Systems

Managers consider both control of the overall organization and control of departments, teams, and individuals. Some control strategies apply to the top levels of an organization, where the concern is for the entire organization or major divisions. Control is also an issue at the lower, operation level, where department managers and supervisors focus on the performance of teams and individual employees.

A. Organization Level: The Balanced Scorecard

Most companies use a combination of metrics for measuring organizational performance and effectively controlling the organization. A recent control system innovation is to integrate internal financial measurements and statistical reports with a concern for markets and customers, as well as employees. The balanced scorecard (BSC) is a comprehensive management control system that balances traditional financial measures with operational measures relating to a company's critical success factors. A balanced scorecard contain four major perspectives, as illustrate below: financial performance, customer service, internal business processes, and the organization's capacity for learning and growth.

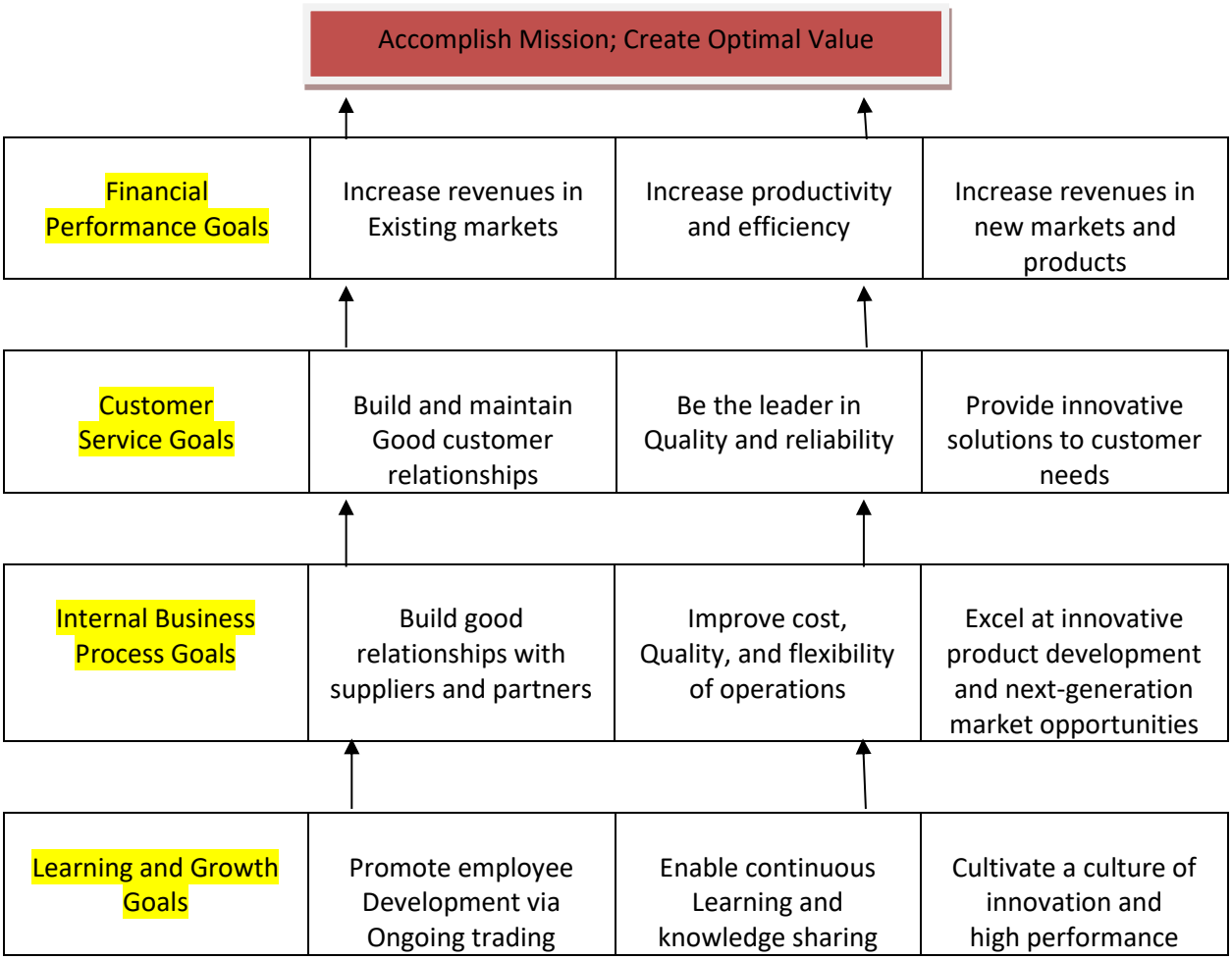
Exhibit: Major Perspectives of the Balanced Scorecard

	**Financial** Do actions contribute to better financial performance? Measures: Profit Return on investment	
Customers How well do we serve our customers? Measures: customer satisfaction, customer loyalty	Overall Goals Mission-Objectives - Strategies - Policies	**Internal Business Processes** Do work processes add value for customers and shareholders? Measures: Order-rate fulfillment, Cost-per-order
	**Learning and Growth** Are we learning, changing, and improving? Measures: Continuous process improvement, employee retention	

Within these four areas, managers identify key performance indicators the organization will track. The *financial perspective* reflects a concern that the organization's activities contribute to improving short- and long-term financial performance. It includes traditional measures such as net income and return on investment. *Customer service indicators* measure such as things as how customers view the organization as well as customers retention and satisfaction. Business process indicators focus on production and operating statistics, such as order fulfillment or cost per order. The final component looks at the organization's potential for learning and growth, focusing on how well resources and human capital are being managed for the company's future. Measurements include such things as employee retention, business process improvements, and the introduction of new products. The components of the scorecard are designed in an integrative manner so that they reinforce one another and link short-term actions with long-term strategic goals, as illustrated above exhibit. Managers can use the scorecard to set goals, allocate resources, plan budgets, and determine rewards.

Executive information systems and dashboards facilitate use of the balanced scorecard by enabling top managers to easily track metrics in multiple areas, rapidly analyze the data, and convert huge amounts of data into clear information reports. The scorecard has become the core management control system for many organizations. Scorecards serve as the agenda for monthly management meetings, where managers evaluate performance, discuss what corrective actions need to be taken, and set new targets for the various BSC categories.

Exhibit: A Strategy Map for Performance Management



The cause-effect control technique is the **strategy map**. A strategy map provides a visual representation of the key drivers of an organization's success and shows how specific outcomes in each area are linked. The strategy map is a powerful way for managers to see the cause-and-effect relationships among various performance metrics. The simplified strategy map illustrates the four key areas that contribute to a firm's long-term success - learning and growth, internal processes, customer service, and financial performance - and how the various outcomes in one area link directly to performance in another area. The idea is that effective performance in terms of learning and growth serves as a foundation to help achieve excellent internal business processes. Excellent business processes, in turn, enable the organization to achieve high customer service and satisfaction, which enables the organization to reach its financial goals and optimize its value to all stakeholders.

The organization ahs learning and growth goals that include employee training and development, continuous learning and knowledge sharing, and building a culture of innovation. Achieving these will help the organization build efficient internal business processes that promote good relationship with suppliers and partners, improve the quality and flexibility of operations, and excel at developing innovative products and services. Accomplishing internal process goals, in turn, enables the organization to maintain strong relationships with customers, be a leader in quality and reliability, and provide innovative solutions to emerging customer needs.

B. Department Level: Behavior versus Outcome Control

The balanced scorecard and strategy map are techniques used primarily by top and upper-level managers. Lower-level managers focus on the performance of people at the department level, who must meet goals and standards if the organization is to attain its overall goals. Although lower-level managers may use any of the control systems listed previously, the reward system is often of paramount concern at the supervisory level.

There are two different approaches to evaluating and controlling team or individual performance and allocating rewards. One approach focuses primarily on *how* people do their jobs, whereas the other focuses primarily on the *outcomes* people produces. **Behavior control** is based on manager observation of employee actions to see whether the individual follows desired procedures and performs tasks as instructed. Do people get to work on time? Do they stay focused on their tasks or spend a lot of time socializing with colleagues" Do they dress appropriately for the job" Do they perform their jobs according to established methods or supervisor instructions? With behavior control, managers provide heavy supervision and monitoring, pay attention to the methods people use to accomplish their jobs, and evaluate and reward people based on specific criteria, which might include areas such as appearance, punctuality, skills, activities, and so forth.

Outcome control is based on monitoring and rewarding results, and managers might pay little attention to how those results are obtained. With outcome control, managers don't supervise employees in the traditional sense. People have a great deal of autonomy in terms of how they do their jobs - and sometimes in terms of where and when they do their jobs - as long as they produce desired outcomes. rather than monitoring how many hours an employee works, for example, managers focus on how much work the employee accomplishes. This is the Result-Only Work Environment.

In most organizations, managers use both behavior and outcome control.

IV. Strategic Approach I
Strengthening Employee Coordination and Efficiency

It has evolved further as a strategic tool for both increasing internal coordination and efficiency and enhancing coordination with customers and external partners. This is the highest level of application. Primary IT applications for increasing internal coordination and efficiency are intranets, knowledge-management, social networking, and enterprise resource planning (ERP). Let's deal with this first.

A. Intranets:

Networking, which links people and departments within a particular building or across corporate offices, enabling them to share information and cooperate on projects, is an important strategic tool for many companies. One prevalent form of corporate networking is an intranet, a private, companywide information system that uses the communications protocols and standards of the Internet but is accessible only to people within a company. To view files and information, users simply navigate the site with a standard web browser, clicking on links. Today, most companies with intranets have moved their management information systems, executive information systems, and so forth over to the intranet so they are accessible to anyone who needs them. In addition, having these systems as part of the intranet means new features and applications can easily be added and accessed through a standard browser. Intranets can improve internal communications and unlock hidden information. They enable employees to keep in touch with what's going on around the organization, quickly and easily find information they need, share ideas, and work on projects collaboratively.

B. Knowledge Management

Knowledge management refers to the efforts to systematically find, organize, and make available a company's intellectual capital and to foster a culture of continuous learning and knowledge sharing. The company's **intellectual capital** is the sum of its knowledge, experience, understanding, relationships, processes, innovations, and discoveries.

Companies need ways to transfer both codified knowledge and tacit knowledge across the organization. **Codified knowledge** is formal, systematic knowledge that can be articulated, written down, and passed on to others in documents, rules, or general instructions. Tacit knowledge, on the other hand, is often difficult to put into words. **Tacit knowledge** is based on personal experience, rules of thumb, intuition, and judgment. It includes professional know-how and expertise, individual insight and experience, and creative solutions that are difficult to communicate and pass on to others. As much as 80 percent of an organization's valuable knowledge may be tacit knowledge that is not easily captured and transferred. Thus, one hot topic in corporate IT concerns **expert-locator systems** that identify and catalog experts in a searchable database so people can quickly identify who ahs knowledge they use.

Exhibit: Two Approaches to Knowledge Management

Codified Provide high-quality, reliable, and fast information systems for access of explicit, reusable knowledge *People-to-document approach*	Strategic Category	**Tacit** Channel individual expertise to provide creative advice on strategic problems *Person-to-person approach*
Develop an electronic document system that codifies, stores, disseminates, and allows reuse of knowledge	**Knowledge Management Strategy**	Develop networks for linking people so that tacit knowledge can be shared
Invest heavily in information technology, with a goal of connecting people with reusable, codified knowledge	**Information Technology Approach**	Invest moderately in information technology, with a goal of facilitating conversations and the personal exchange of tacit knowledge

1. Knowledge Management Approach deals with the collection and sharing of codified knowledge, largely through the use of sophisticated IT systems. Codified knowledge may include intellectual properties such as parents and licenses; work processes such as policies and procedures; specific information on customers, markets, suppliers, or competitors; competitive intelligence reports; benchmark data; and so forth.

2. Information Technology Approach focuses on leveraging individual expertise and know-how - tacit knowledge - by connecting people face to fact or through interactive media. Tacit knowledge includes professional know-how, individual insights and creativity, and personal experience and intuition. with this approach, managers concentrate on developing personal networks that link people together for the sharing of tacit knowledge.

C. Social Networking

Encouraging and facilitating the sharing of tacit knowledge isn't easy. Despite the fact that companies have spent billions on software and other technology for knowledge management, there is some indication that knowledge sharing has fallen short of managers' goals.

A recent approach that holds promise for more effective sharing of tacit knowledge is the use of social media, including corporate social networking and other social technology tools such as blogs and wikis. A **blog** is a running web log that allows an individual to post opinions and ideas about work projects and processes. The simplicity and informality of blogs make them an easy and comfortable medium for people to communicate and share ideas. In addition, the micro-blogging service Twitter is increasingly being used by companies as a fast way to solve problems. People can send a question and quickly get responses from all over the organization or from outsiders. A **wiki** is similar to a blog and uses software to create a website that allows people to create, share, and edit content through a browser-based interface. Rather than simply sharing opinions and ideas as with a blog, wikis are free-form, allowing people to edit what they find on the site and add content.

Social networking is an extension of blogs and wikis. Social networking sites provide an unprecedented peer-to-peer communication channel where people interact in an online community, sharing personal and professional inf9rmation and photos, producing and sharing all short of ideas and opinions. Because of the popularity of Facebook in people's personal lives, most employees are comfortable with the idea of "following" and communicating with their colleagues online. Using social networks for a business enables people to easily connect with one another across organizational and geographical boundaries based on professional relationships, shared interests, problems, or other criteria. People can use the social network to search for tags that will identify others with knowledge and resources that can help them solve a problem or do their jobs better. Moreover, the nature of social networking build trust so that people are more likely to cooperate and share information.

D. Enterprise Resource Planning

Many companies are using broad-scale information system that take a comprehensive view of the organization's activities. These enterprise resource planning (ERP) systems collect, process, and provide information about a firm's entire enterprise, including order processing, product design, purchasing, inventory, manufacturing, distribution, human resources, receipt of payments, and forecasting of future demand. ERP systems can be expensive and difficult to implement, but when applied successfully, an ERP system can serve as the backbone for an organization by integrating and optimizing all the various business processes across the entire firm.

An example of an ERP Network

<table>
<tr><td>Sales</td><td rowspan="3">General Database</td><td>Financial and Accounting</td></tr>
<tr><td>Human Resources</td><td>Purchasing</td></tr>
<tr><td>Inventory and Manufacturing</td><td>Distribution</td></tr>
</table>

IV. Strategic Approach II
Strengthening Coordination with External Partners

External applications of IT for strengthening coordination with customers, suppliers, and partners include systems for supply chain management and the integrated enterprise, tools for enhancing customer relationship, and e-business organization design. One basic approach is to extend the corporate intranet to include customers and partners. An **extranet** is an external communications system that uses the Internet and is shared by two or more organizations. Each organization moves certain data outside of the private intranet, but makes the data available only to the other companies sharing the extranet.

A. The Integrated Enterprise

Extranets play a critical role in today's integrated enterprise. The integrated enterprise is an organization that uses advanced IT to enable close coordination within the company as well as with suppliers, customers, and partners. An important aspect of the integrated enterprise is using *supply chain management systems,* which manage the sequence of suppliers and purchasers converting all stages of processing from obtaining raw materials to distributing finished goods to consumers.

1. Information Linkages: Applying supply chain management systems enables organizations to achieve the right balance of low inventory levels and customer responsiveness. The Exhibit below illustrates horizontal information linkages in the integrated enterprise. By establishing electronic linkages between the organization and key partners for the sharing and exchange of data, the integrated enterprise creates a seamless, integrated line stretching from end consumers to raw materials suppliers.

2, Horizontal Relationships: The purpose of integrating the supply chain is for everyone to work closely together, moving in lockstep to meet customers' product and time demands. Honeywell, which makes turbocharger for cars, trucks, and light aircraft, uses an extranet to give suppliers access to its inventory and production data so they can respond rapidly to the manufacturer's need for parts. Honeywell is also working with big customers to integrate their systems so the company will have better information about turbocharger demands from customers as well. For the integrated enterprise to work, horizontal relationships get more emphasis than vertical relationships.

B. Customer Relationships

Many organizations have hired social media directors that are in charge of a blend of activities such as marketing and promotions, customer service, and support. Social media directors use blogs, Twitter, Facebook, company websites, and other technology primarily to do one thing - strengthen customer relationships. Managers responding to one survey say they use these technologies for improving customer service, developing new markets, getting customer participation in product development, and offering opportunities for customers to interact with one another. Social networks and blogs are particularly popular customer-facing technologies.

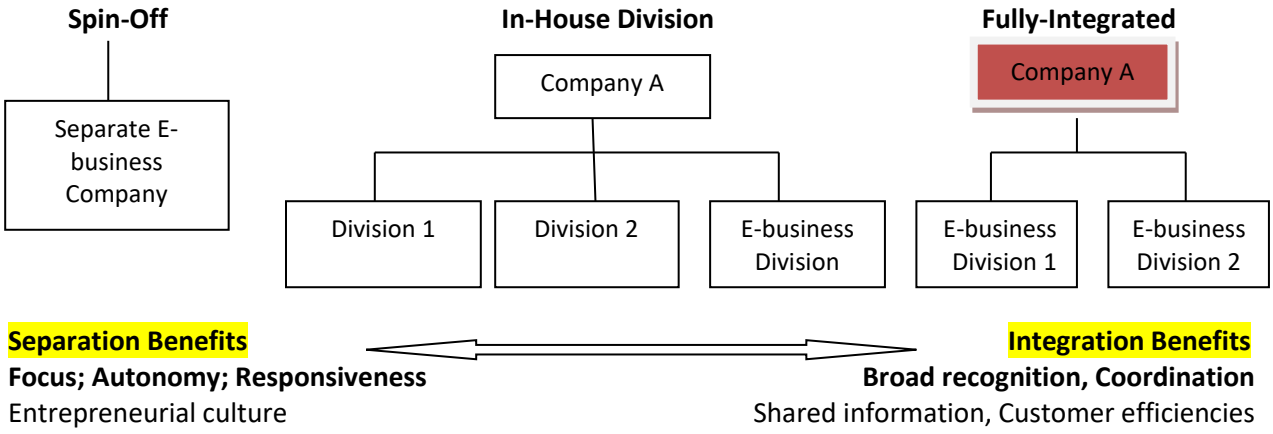
V. E-Business Organization Design

E-business can be defined as any business that takes place by digital processes over a computer network rather than in physical space. However, e-business most commonly refers to electronic linkages over the Internet with customers, partners, suppliers, employees, or other key constituents. E-commerce is a more limited term that refers specifically to business exchanges or transactions that occur electronically. Today,

e-commerce is transforming into *m-commerce*, which simply means the ability to conduct business transactions through a mobile device. The world has gone mobile. For many people, their cell phone is always within reach, and they use it for everything ordering a pizza to accessing their bank account.

Many traditional organizations have set up Internet operations, but managers have to make a decision about how best to integrate bricks and clicks - that is, how to blend their traditional operations with an Internet initiative. One option is to set up an Internet division as a separate business, either by creating a *spin-off company* or by participating in a joint venture with another organization. Some companies choose to establish an *in-house division* that is more closely integrated with the traditional business. As the Internet continues to evolve, other companies are moving to a third option, which is to *blend traditional and e-business operations* in a totally integrated design.

Exhibit: Strategies of Integrating Bricks and Clicks



A. Separate Business

To give the Internet operation autonomy and flexibility, some organizations choose to create a separate company, using either a spin-off or a joint venture. A separate business is a free-standing Internet business that competes with other Internet companies. Advantages of a separate business include faster decision making, increased flexibility and responsiveness to changing market conditions, an entrepreneurial culture, and management that is totally focused on the success of the online operation. Potential disadvantages are the loss of brand recognition and marketing opportunities, higher start-up costs, and loss of leverage with suppliers. For example, retailer Kmart originally created a spin-off division called Bluelight.com, and the drugstore CVS originally launched CVS.com as a separate business. In both cases, operating e-business as a separate unit proved to be inefficient for the retailers in the long run. Managers began bringing online operations back under the umbrella of the traditional business so that functions such as marketing, merchandising, and purchasing could be handled more efficiently. The autonomy, flexibility, and focus of the spin-off was an advantage during the start-up phase, but the organizations later gained efficiencies by bringing the web business back in-house for better coordination with other departments. Another approach to creating a separate business is to enter into a joint venture or partnership. Particularly for companies that have little Internet experience, forming a joint venture with an experienced partner can be more successful than going it alone.

B. In-House Division

An in-house division offers tight integration between the Internet operation and the organization's traditional operation. The organization creates a separate unit within the company that functions within the structure and guidance of the traditional organization. For example, Disney.com is a division under the guidance and control of the Walter Disney Company. The in-house approach gives the new division several advantages by piggybacking on the established company. These include brand recognition, purchasing leverage with suppliers, shared customer information and marketing opportunities, and distribution efficiencies. A potential problem with an in-house division, however, is that the new operation doesn't have the flexibility needed to move quickly in the Internet world.

D. Integrated Design

There is no separation between what is defined as the traditional part of the business and what is defined as the e-business part. E-business is incorporated into every employee's work. That is, what might have started out as an in-house division is broken up and assigned to various departments and business units as part of the everyday way of operating. Virtually every employee is involved in both traditional and e-business activities.

VI. IT Impact on Organization Design

IT Impact	*Explanation*
1. Smaller organizations	Some Internet-based businesses exist almost entirely in cyberspace; there is no formal organization in terms of a building with office, desks, and so forth
2. Decentralized organization structures	Most organizations today use technology to further decentralization
3. Improved horizontal coordination	One of the great outcome of IT is its potential to improve coordination and communication within the firm.
4. Improved inter-organizational relationships	IT can improve horizontal coordination and collaboration with external parties such as suppliers, customers, and partners.
5. Enhanced network structures	The high level of inter-organizational collaboration needed in a network organization structure, and that would not be possible without the use of advanced IT.

(End of Lecture Notes #9)