MIS 13 Video Cases

**Questions and Answers**

**Management Information Systems:**

**Managing the Digital Firm 13th edition**

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# Chapter 1: Business Information Systems in Your Career

## Case 1: UPS Global Operations with the DIAD

### 1. List the various ways that DIAD improves customer service.

Faster pickup and delivery schedules. Real-time tracking of packages based on bar-code technology, and using Wi-Fi and cellular connections; a local Bluetooth network to connect the driver with the truck. GPS built into the unit to help drivers locate delivery and pickup locations. Color screen for customer to read shipping documents.

### 2. Write out the steps a package takes from pick-up by a UPS driver to delivery including the role of DIAD, the UPS Data Center, and the UPS Package Center.

* Smart label created
* Information sent to processing center
* Information processed—stored, address corrected
* Information matched to dispatch plan
* Package is sorted
* Another label is printed specifying delivery truck and position on truck
* Geo software used to continuously update dispatch plans for trucks based on current load
* Information is displayed on the DIAD IV identifying drop off order, position on truck
* At delivery, package scanned. Information sent wirelessly to processing center
* Customers sign on the dotted line on the DIAD IV.
* Main processing centers store complete track of package for customer tracking

### 3. What role does wireless communication play in the UPS systems? List the different types of wireless connectivity and describe their function.

DIAD IV is wirelessly connected to the main processing centers and the package centers. Generally UPS trucks contain a transceiver to work with the local driver's DIAD IV, and then communicate that information wirelessly back to the UPS processing center.

**Types of Wireless Connectivity:**

* CDMA and GSM: cellular connection between drivers, trucks, and central clearance facilities
* Wi-Fi: wireless connections between drivers, trucks, and central clearance facilities used whenever trucks within range of Wi-Fit hotspots or WiMax towers
* Bluetooth: wireless connections between the DIAD hand held and on-board truck computers; also provides connectivity between trucks and the clearing facility when the truck is on premises.

### 4. Why doesn’t UPS use much more powerful and smaller smartphones like the iPhone or Android?

The DIAD units are much more robust than consumer smartphones and can withstand larger drops, rain and intermittent submersion, and other abuse. While many features of the DIAD are also available on smartphones, the DIAD is optimized for these features (like scanning bar codes, using multiple cellular carriers) whereas ordinary smartphones are not.

### 5. Why is the DIAD V better than the DIAD IV?

Perhaps the biggest improvement is ergonomic: a smaller unit that can fit into a driver’s hand, and can be one-hand operated. The new unit weighs only 1.5 pounds, versus 5 pounds for the old unit. The new DIAD has a much faster response time and processor; In addition, the screen has a higher resolution, making it easier and more accurate to use, especially for customers who sign shipping bills on the unit; the screen is backlit for night use. The DIAD V also has greater wireless flexibility, being able to choose the optimal local carrier.

### 6. How does UPS’s investment in IT help it achieve the strategic business objectives described in Chapter 1?

The most important contributions of technology to UPS strategic objectives is the greatly enhanced operational efficiency; the compression of time to deliver; the development of new services like tracking, and overnight or 2-day service; the closeness to the customer; improvements in the quality and speed of decisions related to packages.

Firms that made these investments in IT benefit by achieving significant competitive advantage over others in the package delivery business. FedEx remains a much smaller but competitive service especially in the overnight market. Other competitors have largely disappeared.

## Case 2: Google Data Center Efficiency Best Practices

### 1. What is PUE, and why is it an important place to start when considering how to reduce data center power consumption? What value of PUE should data center managers strive for?

PUE stands for power usage effectiveness, measured as the ratio of total facility energy divided by IT equipment energy (watts). IT equipment refers literally to the computers and hard drives used in the facility. Total facility power would include lighting, and cooling. In 2006, a typical data center would consume 2 watts of total facility power to support 1 watt of IT equipment. Today the number is much closer to 1.10 because of changes in IT equipment, and changes in facility power management. The ideal is a PUE of 1, in which case all power was being used to simply operate the IT equipment and no other significant support power was being used.

### 2. Describe the five methods recommended by Google for reducing power consumption.

Measure the PUE is the first step. If you can’t measure efficiency, you can’t manage it. Second, manage airflow by isolating cool aisles from hot aisles, and preventing the premature mixing of hot and cold air. Third, adjust the thermostat up to operate the IT equipment at a maximum of 80 degrees. Fourth, as much as possible make use of free ambient cooling such as cooler air, or cooler incoming water. Fifth, optimize power distribution and utilization. In this case, reduce the number of conversions from AC to DC and back again. Other methods not mentioned in the film are server virtualization, decreasing power demands of processors, and optimizing the computing load on servers in order to increase their rate of utilization, and decrease the number of servers required to do the work.

### 3. How much of the world’s global greenhouse gases are the result of computing? List several factors that will tend to retard or accelerate data center power consumption both globally and in the United States.

The entire ICT infrastructure including data centers accounts for about 2 percent of global greenhouse gas emissions. Of this, about 15 percent is due to data centers. Data center power consumption depends in part on the rate of economic growth both globally and in the United States

### 4. Where do you suspect that data center power consumption will be greatest: developing and emerging economies or already-developed economies? Why?

Currently the developed world consumers the most computing power, but the rapid growth of developing countries ensures a faster rate of growth of data center power.

### 5. Imagine that a company has developed an advanced technology that allows it to reduce its data center requirements by an unprecedented amount, and creates a competitive advantage for the company in the data center market. Why should it share that technology with other data center firms? If this firm does not share its techniques, the rest of the industry will continue to operate highly inefficient centers, and increase global emissions of greenhouse gases.

Firms that have developed a more effective power utilization for their data centers do have a strategic advantage, and would definitely not share the techniques with competitors even if this was not in the best interests of the whole society. To date no single firm has achieved such an inimitable advantage.

### 6. Should the government or an industry association regulate the carbon emissions of the data center industry as they do the airline industry? Or the automobile industry? Or is it sufficient to rely on the competitive market place to drive down energy consumption in data centers?

Currently, in the United States, there has been no call for data center power regulation by government, in part because data centers are seen as a small component in the total picture of greenhouse gas emissions. There are several professional societies that develop and promote energy conservation in data centers. For example, the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (www.ashrae.org). has developed a set of industry recommended standards.

# Chapter 2: Global E-Business and Collaboration

## Case 1: Walmart’s Retail Link Supply Chain

### 1. Where does Walmart’s supply chain start? What triggers Walmart’s Retail Link system to ship goods to local Walmart Stores?

Walmart’s Retail Link is triggered by consumer purchases in local stores by point-of-purchase cash register data. This is in contrast to more traditional supply chains which often start with a manufacturer or distributor shipping goods to local stores based on forecast sales or the hope of making more sales by flooding isles with products (“push” driven supply chains). In the case of Walmart, the supply chain is driven by consumer behavior which “pulls” replacement stock from inventory.

### 2. Why is a detailed knowledge of consumer purchases at each store important to Walmart’s success?

There are regional and local differences among all of Walmart’s stores in the United States. These differences may involve weather patterns, ethnic composition of customers, local economic conditions, and regional cultures as well. Therefore, each store is in reality a unique entity with its own patterns of consumption. By adjusting inventory to each store, Walmart is able to meet different customer needs, and optimize sales revenue.

### 3. Why can’t other large retailers easily duplicate Walmart’s Retail Link?

Retail Link has been built over several decades, and the experience and knowledge that Walmart has developed cannot be easily transferred to other firms. Moreover, the financial investment is substantial. Nevertheless, other large retailers like Target and Costco have developed powerful and competitive systems to compete with Walmart. Because the technology has fallen in cost over the last decades, new comers have an advantage over legacy systems like Retail Link.

### 4. Why does Walmart encourage its vendors to learn how to use Retail Link?

Walmart is able to off load some of the cost of keeping its shelves full to vendors. Vendors monitor the stock of their goods in all Walmart stores and are incentivized to keep goods in stock (avoid stock-outs). Is there a danger of vendors overstocking Walmart shelves? Probably. But Walmart’s own managers oversee the inventory system and can quickly spot those vendors who would take advantage of their access to Retail Link.

## Case 2: Salesforce.com: The Emerging Social Enterprise

### 1. Why did Comcast join public social networks? What difference did it make for Comcast’s business? What might be the benefits for a consumer?

Because so many of its customers use public social networks and engagement in conversations about the firm, Comcast believed it needed to join these social networks to address problems and identify supporters and positive comments as well.

### 2. What issues and challenges is the use of social network monitoring supposed to solve or address at Salesforce.com?

The key statement is that “the conversations about your firm beyond your Web site are just as, or more, important than what’s happening on your Web site.” In other words, because so many of its customers use social networks and spend time on social networks, it is important for Salesforce to be there also and to engage their customers. It’s a questions of listening and engaging with customers. How else could this be done in a social network world?

### 3. Radian 6 (now owned by Salesforce) is described as a “listening and engagement platform.” What does this mean and how does it differ from traditional marketing techniques for communicating with the customer?

Radian started out as a firm that monitored how brands were being discussed on social networks. And then helping its clients address the issues, problems, and critical comments authored by customers. It’s a much more “listening” approach than email, print advertising, display online advertising, and so forth, which all oriented to broadcasting messages from the firm to customers.

### 4. What are some of the measures you can use to measure the success of a social business approach? Name at least four measures of social business impact. What does it mean to measure the success of a company in terms of its “share of conversation”?

Some of the measures mentioned or illustrated are: the number of online subscribers to Web and Facebook pages; Twitter followers; online posts and comments all channels; video views; engagement coverage (breadth of customer participation across products); quality of engagement; sentiment of online comments (positive or negative); # of MVPs (most valuable persons are influential supporters); posts and comments; downloads; Facebook engagement score

“Share of conversation” really refers to overall brand identification by consumers, or, “the degree to which a brand is associated with the problem it set out to help with.” Think Google for search; Xerox for copying; YouTube for online video, and so forth.

### 5. How did Salesforce organize its social business initiative? Why was it important to make social enterprise a full time job?

It established full time community managers working in a Social Media Command Center. Salesforce managers felt that only by setting up a formal group to advocate for social media could the firm transform itself to become a social enterprise.

## Case 3: How FedEx Works: Inside the Memphis Hub

### 1. List the business processes displayed in the video.

Business processes displayed in the video include picking up a package, transporting a package to a hub, processing and sorting a package in a warehouse, shipping packages to airports, processing the package locally, and delivering the package.

### 2. List the types of information systems shown in the video. Can you describe how systems that were not shown might be used at FedEx?

Types of systems included in the video are transaction processing systems, management information systems (at the FedEx air control center, MIS monitor the trucks and planes coming and going and the number of packages being handled). An executive might receive a report of the day’s activities via an executive support system. Customer complaints or questions might be resolved via a customer relationship management system.

### 3. The system displayed in the video is an enterprise system. Why is this true? Explain your answer.

The system in the video is an enterprise system because key business processes of FedEx are integrated into a single software system that operates across the nation and globe.

### 4. What are the risks and benefits of having a single Super Hub in Memphis coordinate the delivery of packages across the United States?

The risk is that the Memphis Hub could experience a power outage, a crippling storm, or an accident which shuts down the airport and the FedEx operation. The benefit is one of scale and efficiency. Very large sorting facilities are more efficient than many smaller ones, and having a single hub reduces complexity.

### 5. How could FedEx's shipping process be made even more efficient?

The sorting process could potentially become completely automated, FedEx could use more energy efficient vehicles, or they could continue to innovate and develop even more efficient technologies across the enterprise.

# Chapter 3: Information Systems, Organizations, and Strategy

## Case 1: NBA: Competing on Global Delivery with Akamai OS Streaming

### 1. Using Porter's competitive forces model, analyze the NBA's market situation. How does the use of Akamai help the NBA compete in this market?

First, what is the market? Broadly, it’s the entertainment market. More narrowly, it’s the professional sports market. Even more narrowly defined, it's the market for professional basketball in the United States and the world where the NBA holds a near or actual monopoly. The NBA has direct sports competitors in the form of professional basketball leagues in Asia, and Europe, although they do not have global brands. The NBA also competes again other professional sports associations like the National Football League, and Major League Baseball. These other associations are also expanding their international reach.

Substitute products include all other forms of media which can capture their audience such as YouTube, videos, movies, and other immersive and entertainment media. There are few new market entrants at this time because of the costs of building a brand; Customers are a threat in so far as they can find alternative often illegal ways of obtaining professional basketball content on the Web. The NBA needs to control its product licensing, geographical distribution, and supply. Supplying an entertaining experience allows the NBA to capture this audience and prevent the development of extensive P2P network downloading of copyrighted content; the local franchise owners, who also own controlling interests in the NBA, are the suppliers of the entertainment content because they own the local franchises. They are not a competitive threat, but might develop their capabilities if the NBA did not. That would be a risk.

### 2. Using Porter's our generic strategies model, what do you think is the NBA's overall strategy or strategies?

A differentiated, unique product—the online NBA experience. A focus on market niche: US and global basketball sports. In particular, developing a global strategy is obviously a large part of the NBA strategy, and you can think of this as changing the scope of competition from national sports to global sports, and developing a global brand. Finally, strengthening the customer relationship by providing access worldwide to US basketball competition, and enhancing the online video experience and offering everyone that experience no matter where they live.

### 3. Why is it important that all fans in the world have the same experience?

For the NBA and other professional sports businesses in the United States the fastest growing markets are global, led by China, Europe, and Latin America. Offering lower quality service to your fastest growing markets would inhibit global growth.

### 4. Why is it important that individual franchise owners can build, manage, and distribute on the NBA platform their own content?

This capability allows local franchisees to control the message they want to communicate to local audiences, and global audiences. It also puts the cost of creating, managing, and maintaining the content onto the local franchiser. The governing structure of the NBA and the other professional sports leagues is that of a confederacy of independent constituents, with a weak central leadership. Many local franchisers would not approve of the NBA centralizing content creation and management.

### 5. The word "partnership" appears several times in the video. Who are the NBA's partners? How does the concept of a strategic ecosystem help understand the NBA's partnership strategies?

The NBA's ecosystem partners consist of technology companies that help it transform its live performances into video content that can be delivered worldwide. Also, the NBA is partnered with the global marketing giants, and global brand name firms who advertise on the NBA.com platform. Together, the technology, marketing firms, and consumer brand companies constitute the NBA strategic ecosystem.

## Case 2: IT and Geo-Mapping Help a Small Business Succeed

### 1. Identify the key software applications used by The Tea Collection.

The main applications described are a Web site for retailers to order clothing, design software to create the clothing, geo-mapping software to identify high-potential sales regions based on demographics, existing Tea Collection outlets, and the number of leads generated by sales reps in these areas. Finally, the video mentions briefly a “back end tool” which keeps track of orders—a database.

### 2. How does the geo-mapping software help the company grow? Explain how sales reps use the results of the geo-mapping system.

The geo-mapping software helps the firm optimize its small sales labor force by sending them only to those zip codes where there is a high probability that retailers will purchase their clothing lines. Sales reps use the results of the geo-mapping software by focusing their efforts on zip codes and regions with the highest sales prospects.

### 3. What is the main technology challenge identified in the video? How would you suggest this challenge should be addressed?

The biggest problem mentioned is the difficulty of integrating the software applications into a single system. Many businesses—large and small—often grow their technology platforms in a haphazard manner which results in the firm having a collection of software tools that are not integrated and cannot share information. As a result, the firm’s employees often have to manually integrate data from a variety of different systems, often using spreadsheets or word documents.

### 4. Do you believe this company can continue to grow rapidly with the existing software and hardware they have described in the video? Why or why not?

Chances are they cannot continue to grow at 50 percent a year with the current hardware and software applications. The costs of integrating the disparate systems will rise to an unacceptable level and cost, at which point the firm will need to talk with a vendor of a small-scale enterprise system that contains modules the firm will need, and which can integrate the information from all the modules into a single management tool.

## Case 3: Materials Handling Equipment Corp: Enterprise Systems Drive Corporate Strategy

### 1. What were the business problems facing MHE? How did they relate to its existing older systems?

A declining market. Competition from larger firms moving into sales of equipment; smaller firms also entering market. The market was becoming a commodity business focusing on sales of equipment and price. Margins were declining. MHE could not differentiate itself from competitors accept by dropping prices even further. MHE’s existing systems did not give it visibility into its business processes, and offered few reporting tools. It was like driving without vision.

### 2. What were the advantages of working with SAP’s Business One?

Affordable, and powerful enough to address MHE’s business problems. Configurable, easily implemented, and easy to teach staff how to use the system.

### 3. Why did the new ERP system give the company a competitive advantage?

It allowed MHE to reduce costs and increase revenues. More importantly, the ERP system allowed MHE to enter into a new line of business called “customer asset management” in which customers could use an online portal to track the repairs of their equipment, giving customers visibility into the process. Competitors could not offer this service.

### 4. What was the impact of the ERP system on corporate costs and revenues?

Revenues were up 12 percent and costs were reduced by 30 percent.

### 5. What new revenue generating service was MHE able to provide to its customers? Why did MHE develop a customer portal?

Asset management: customers could see the costs of repairing their equipment and make decisions about how to proceed, e.g., fixing a machine versus buying a new one.

# Chapter 4: Ethical and Social Issues in Information Systems

## Case 1: What Net Neutrality Means for You

### 1. Are you in favor of network neutrality going forward? Why or why not?

Students can argue that the growth of the Internet, and continuing innovation in new products and services, requires that Internet bandwidth remains very inexpensive, and that ISPs do not impose any additional charges for selected users, or selected services (like Pandora, Netflix, or YouTube) but instead spread the cost over all users, essentially offering a single rate plan for all. Others could argue this is unfair, burdens the light users of the Internet, and is irrational in so far as the resource is not priced according to usage (like the telephone and wireless cellular systems, or like toll highways, and electric utilities).

### 2. What is the threat of ISPs, private business firms, charging whatever they want to charge and that the market will bear?

The FCC and industry critics argue that the ISPs (generally Cable TV and telephone companies) are effective monopolies and there is no competition for their services in local service areas. Therefore markets do not work well, and consumer choice is non-existent. Also, there are conflicts of interest: the very same ISPs who deliver Internet service, deliver telephone and television service. They may want to restrict Internet telephone service like Skype in order to force consumers to use their cell or land line service. They may want to restrict Netflix in order to build their own video streaming service.

### 3. What do the FCC and industry critics mean by “discriminatory behavior” towards selected Internet services? Does the FCC want to prevent ISPs from managing their networks?

Discrimination occurs when an ISP prevents certain types of files from being carried, or slows down the transmission of selected files for whatever reason. The FCC says it supports ISPs managing their networks by using any of a variety of pricing, metering, and capping plans.

### 4. Does the FCC support metered pricing and/or Internet bandwidth caps?

Yes, as long at the pricing reflects usage and is non-discriminatory.

### 5. Major cities of the world have adopted “congestion pricing” in which cars pay a toll to enter the core of the city during daylight hours. Congestion pricing is also used to regulate demand by businesses for electricity. During the day when electricity is in high demand, many businesses pay a “demand” fee in addition to the regular charge for electricity. Why is the Internet any different?

Some argue the Internet is different from highways or other physical assets and resources because supply is practically infinite, and the cost of adding another user whether a heavy user or light user is nearly zero. If resources are not constrained then why impose congestion pricing? Others argue that Internet bandwidth and resources are finite, and that there are real costs involved when adding millions of "heavy hitter" users. One cost is a slow-down in the transmission of email, greater Internet latency, and potentially major "brown outs" of the Internet which in fact have occurred when usage peaks (say during presidential nomination ceremonies or the Super Bowl).

### 6. If your business model depended for its success on millions of people being able to stream videos on demand (like YouTube) would you be in favor of net neutrality or against it?

At first glance the obvious answer is that you would support net neutrality because it means your customers (who are really heavy users of bandwidth) would not pay extra for consuming your video service. However, you would be running the risk that so many of your customers using your service all at once will result in declines in service and a clogging up of the Internet arteries. By allowing ISPs to charge more for heavy users, they might be willing to develop high bandwidth capacities for your users, making your service more reliable. In this light, Google has switched positions on net neutrality, at first a supporter, and now less supportive and even understanding of the need to develop "differentiated service" which costs more but is a lot faster.

## Case 2: Facebook Privacy

### 1. Do people who use Facebook have a legitimate claim to privacy when they themselves are posting information about themselves?

People post personal information on Facebook in the belief that it will be shared only with their friends, or those they choose. This belief is encouraged by Facebook through its public pronouncements on holding data private, but in practice, causing the information to be widely shared. The FTC has explicitly charged Facebook with misleading its users about the privacy of their Facebook information. Given all the instances of Facebook changing its information policies without informing users, and expanding its sharing of personal information, users would be wise not to join or to remove their profiles if they want to preserve their privacy. On the other hand, users who post information and make no effort to control its use, arguably do not have a claim to privacy any more than a speaker in a public forum can make a believable claim to privacy.

### 2. How can using the sharing privacy controls help preserve your privacy on Facebook? In what ways is the sharing control ineffective?

The idea is that you can control with whom you share information, and how widespread sharing will be. But a single global control may not work for you. You may want to share certain things with your friends, other things with your parents. And apparently your friends’ apps and games will see everything you post, and Facebook will use that information to post ads to you.

### 3. How will changing your Connection settings on Facebook help protect your privacy?

Changing Connections settings will control who can message you and also whether or not your Facebook page will show up on a public search (Google or other search). However, once Google has your page indexed, it may be impossible to remove it although if you and your friends can no longer update the page, it will eventually sink in the Google rankings to the back pages of a Google search.

### 4. Why are Facebook’s facial recognition software and policies a potential threat to privacy?

Facebook may distribute bad photos, or falsely identify you, or wrongly associate you with others you may not want. If the wrong kind of people know what you look like, it is more likely they can meet you in public and know who you are without your knowledge or agreement.

## Case 3: Data Mining for Terrorists and Innocents

### 1. Does the Tucson data-mining project inappropriately violate users’ privacy, or is it an acceptable tradeoff to more intelligently combat terrorism? Explain your answer.

Students may say that it does, based on freedom of speech and privacy rights of individuals. The individuals being monitored may not have actually done anything wrong aside from use a keyword marked for surveillance. Students may say that it’s worth it to more accurately identify potential terrorists and prevent future attacks.

### 2. Were the local police justified in their handling of Holm? Why or why not? For whichever view you take, briefly describe the opposing viewpoint.

Students may say that local police were justified in their handling of Holm due to his two conversations with one of the apprehended terrorists. But students are more likely to say that they were not justified, since the courts ruled in Holm’s favor, and he appears to be a victim of circumstance.

### 3. What other issues dealing with data and privacy have you encountered on the Web?

Students might point to Facebook and their battles with privacy advocates on several occasions (changing their Terms of Use, Facebook Beacon, etc.), or Google marketing ads based on the content of their e-mail.

### 4. Review the chapter-ending case in Chapter 6 on the FBI terror watch list. What themes do the two cases have in common? How are they different?

In each case technology is being developed to more accurately identify and apprehend terrorists. The terror watch list is a database, whereas the Tucson project actively seeks to identify new candidates for such a list.

### 5. What is meant by the “Dark Web”?

The dark Internet or “Dark Web” refers to unreachable network hosts on the Internet. The World Wide Web is a system of pages connected via links to and from one another, but sites in the Dark Web are not connected to the rest of the Web. This makes them difficult to detect and a helpful resource to terrorists or hackers launching DDoS attacks.

# Chapter 5: IT Infrastructure and Emerging Technologies

## Case 1: ESPN Getting to eXtreme Scale on the Web

### 1. How many requests from users does ESPN receive each second? Do you think this is a consistent pattern or does it have peaks and valleys? When does it peak?

ESPN can receive up to 10, 00 requests for service per second. Demand for service is highly variable, peaking when games are being played, or when championship matches are playing. At night, demand falls off.

### 2. Why does ESPN store personal information and preferences on its databases and how does this personal information complicate the ability of ESPN to respond to requests from users? Why can’t ESPN just use Web page caching to handle the loads?

Customers enter their personal preferences to determine what scores they routinely see, and what features they are interested in. A cached Web page is static whereas the pages served by ESPN are highly dynamic as sports scores are updated every few minutes.

### 3. How much information on users does ESPN store? Why does this pose a challenge for ESPN? Can’t they just use a standard 1 terabyte hard drive from a PC? Why can’t they use a single PC?

10 million users, on average 5k per user of personal information, and this equals 100 gigabytes. To build redundancy ESPN mirrors the data and so they need an additional 100 gigs for a total of 200 gigs to store the personal information. Because ESPN is looking for an overall <10 millisecond response time to a user’s request, a standard hard drive could not respond for 10 million requests per second in less than 10 million seconds. Moreover a single JVM (Java Virtual Machine device) or tens of them could not handle 10 million requests per second.

### 4. What platforms do ESPN customers use when accessing their Web sites, and how does this further complicate ESPN’s processing picture?

ESPN has to provide service to desktop PCs, tablets, and smartphones. Each platform will have different formatting.

### 5. What are the key components in EXPN’s solution? Describe the function of each.

The key components are a relational database that stores the personal information, a composer program that reads in-coming customer requests and ID information, and a collection of servers called “the grid.” The system works so fast because the contents of the personal database, about 200 gigs, are stored in RAM memory (about 20 gigs of RAM in each standard server).

### 6. Why is scalability so important to ESPN?

Given the peak-loading of consumer requests during championship periods like the Super Bowl, ESPN needs to add capacity quickly without having to change its programming or systems to cope. Given the way ESPN’s system is built, adding capacity is just a matter of adding additional standard servers.

## Case 2: Salesforce.com SFA Automation on the iPhone and iPod Touch

### 1. What are some examples of “disruptive” products created by Apple? How disruptive of a product is the iPhone and why?

Apple’s iPod and Music Store are ‘disruptive’ products that altered prior business models and shook up the industry. The iPhone is a highly disruptive technology because it combines the functionality of so many other devices into one streamlined smartphone. Its innovative user interface, Internet connectivity, 15+ hours of music and other data storage, App Store, and cell phone capability together make it a device with staying power.

### 2. Describe some of the unique ways Salesforce’s SFA application uses the iPhone’s features, including at least one not mentioned above.

The Salesforce application integrates with the iPhone’s ability to locate other individuals using their phone on a map in real-time, in case there’s a reason to meet with a person face-to-face to close a deal. Other features include sorting using different criteria within the iPhone’s default table display and the ability to connect to the Internet to download updates in real-time.

### 3. What other companies that you know of have open development platforms?

Facebook is a good example of a company that opened its platform to third-party developers. Facebook applications have become one of the major attractions of Facebook, making the site even ‘stickier’ than before.

### 4. What advantages does the SFA application have for sales people? If you were a salesperson, how would you use it?

Salespeople are often on the go, so applications that run on the mobile devices that are so useful to salespeople are an obvious benefit. Time that might normally be spent just waiting in transit can now be used productively.

### 5. Who benefits more from the partnership between the two companies, Salesforce.com or Apple? Explain your answer.

Both companies benefit a great deal from the partnership. Salesforce.com probably benefits more, because tapping into the market of iPhone users represents a large potential gain in sales of their CRM applications. For Apple, Salesforce is yet another company hoping to capitalize on the widespread use of the iPhone, and while the availability of Salesforce applications on iPhones might attract more iPhone buyers, it's not as critical for them.

## Case 3: Hudson's Bay Company and IBM: Virtual Blade Platform.

### 1. Explain the difference between the three types of server virtualization using the first video.

The three types of server virtualization are virtualization (the most basic type), paravirtualization, and operating system virtualization. Operating system virtualization is one single operating system divided into multiple independent partitions that run that system.

### 2. Why is virtualization important to a company like Hudson’s Bay Company? How did that factor into their decision to partner with IBM?

Virtualization is important to Hudson's Bay Company and any company large enough to maintain a large amount of servers because of the efficiency increases it affords. IBM has experience working with companies of similar size to Hudson's Bay Company and was well qualified to work with HBC's Citrix environment.

### 3. What kinds of companies are likely to use a storage area network (SAN)?

Only large companies are likely to make use of a storage area network, because large companies have storage needs significant enough to create a network dedicated to that purpose. SANs increase the speed with which information is stored and retrieved.

### 4. Can you think of any risks involved in virtualization?

Currently, the security risks of virtualization aren't well known. It's possible that at some point, flaws in the technology may be discovered, at which point companies using virtualization will need to make investments in security technology that counters those weaknesses.

### 5. Explain why virtualization is considered a “green” technology.

Virtualization is a common example of “green” technology because it drastically reduces the number of servers required to complete a given amount of work. This lessens the burden on the data center housing the servers and allows resources to be allocated elsewhere.

# Chapter 6: Foundations of Business Intelligence: Databases and Information Management

## Case 1: Dubuque Uses Cloud Computing and Sensors to Build a Smarter City

### 1. Why is the cloud important to cities like Dubuque as they pursue their visions of a smart city?

Cloud computing means that cities will experience much lower IT costs than with traditional hardware and software installations owned and operated by the city, or from proprietary data centers. Cloud computing supports Software as a Service (SaaS) and eliminates the need for cities to purchase or operate data centers.

### 2. What do Dubuque officials mean when they talk about a “smarter city?”

“Smarter city” means a city where thousands of sensors are distributed across the city, including in homes, which send data on water, energy, and travel facility use to a cloud computing facility. Software then analyses this data and returns useful information to city officials, and participating “pilot” home owners. The objective is to make cities “sustainable” which means efficient in their use of natural and human resources.

### 3. List the major “smarter city” projects in Dubuque. What has been the impact of the smarter domestic water program?

Smarter water; smarter natural gas; smarter electric; smarter travel;

25 percent of all the domestic water in the country is lost through leakages in the supply lines. Smarter water helped the city achieve a 6.6 percent reduction in usage, and an 8 fold increase in leak detection.

### 4. What is Dubuque’s next move now that they have developed some successful pilot projects like the water program and electricity program?

Officials hope to integrate these ‘silos’ (water, electricity, travel, and gas use) into a unified whole smart system to analyze relationships among each of these silos. For instance, instances of very poor utilization of resources may occur in certain neighborhood, but not others, suggesting a community planning program.

### 5. How is the approach taken in Portland similar or different to the approach taken in Dubuque?

Dubuque’s effort is aimed more at building a large data gathering network from various city and property owner systems, and then analyzing the data, looking for areas of waste, and for patterns and interrelationships among the various sub-systems like gas, water, and electricity. The Portland effort reflects a more planning orientation for decision makers to understand the implications for many city systems of the decisions they make. Portland has a more decision making, and planning, approach.

## Case 2: Data Warehousing at REI: Understanding the Customer

### 1. What is a data warehouse and why is REI building one?

A data warehouse is a database that stores current and historical data of potential interest to decision makers throughout the company. The data originate in many core operational transaction systems, such as systems for sales, customer accounts, and manufacturing, and may include data from Web site transactions. In REI’s case, it does include Web site transaction data. REI is building one to more effectively aggregate and apply the information it has gathered about its customers.

### 2. What are some of the disadvantages of consumer cooperatives compared to “traditional” firms?

One disadvantage might be that since a co-op is run ‘democratically’, building a consensus and getting things done quickly might be slower than firms with a more rigid hierarchical structure.

### 3. Describe some of the marketing strategies that REI’s data warehouse will allow it to use. Would these have been possible before the data warehouse was built?

REI will be able to determine items a customer has bought multiple times, classes, workshops, and events customers attend, and other information that will allow them to more accurately market products consumers are interested in seeing on an individual basis.

### 4. What are some of the risks or concerns surrounding the creation of a data warehouse?

As always, when dealing with large amounts of data concentrated centrally, it’s important to keep that data secure. REI is likely to have sensitive information like credit card numbers on file for its customers, so it’s critical that they keep their data warehouse safe.

### 5. Why do you think REI chose to work with IBM's data warehouse technology?

REI likely chose IBM because of their proven track record for working with customers of any size and scale. IBM is the safe choice for a company hoping to successfully implement data warehousing technology, as well as many other types of technologies. Now if REI plans to use any other IBM technologies, they will already have a working relationship with IBM.

## Case 3: Maruti Suzuki Business Intelligence and Enterprise Databases

### 1. What were the business challenges facing Maruti Suzuki management prior to adopting the Oracle suite?

Rapid growth: 15 percent growth in India car market. Challenges to its competitive position as a leader in India. Multiple divisions, subsidiaries, and joint ventures made it difficult to coordinate company. Difficulties of reporting information in a timely fashion to parent company in Japan. Lack of real-time operations and financial data.

### 2. What advantages does Maruti Suzuki derive from working with a single vendor, Oracle? What are the possible risks of working with a single vendor?

A single vendor can provide an integrated suite of tools that usually work with one another well. Reduces transaction costs of dealing with vendors and consultants: one firm. The risk is that some tools in the suite may not be “best of breed.” And a single vendor makes the firm dependent on one firm’s financial and management position. \

### 3. What were the important business factors which management used to evaluate Oracle’s database offerings?

Management wanted systems that were simple to use; require little training; could be scaled up as the company grew; and could integrate existing legacy systems.

### 4. Why was it important that a vendor’s products be able to integrate with legacy systems?

Legacy systems are the older databases and computerized files which all large companies developed in the past. Legacy systems are difficult to abandon because a great deal has been invested in building them over the years; they “work” after a fashion; and use outmoded technologies requiring skills that are difficult to find on the market. Replacing legacy systems is usually too expensive. Therefore, it is important that new systems be able to work with the existing legacy systems. “Middle ware” is software that makes this possible (it’s in the “middle” between legacy and new systems).

### 5. What are the business benefits reported by management to using the Oracle suite of products?

The benefits are standardization of data and information across the enterprise; standardization of business practices; immediate real time online data; no batch processing; strengthening of financial and management controls over a very diverse and geographically distributed company.

# Chapter 7: Telecommunications, the Internet, and Wireless Technology

## Case 1: Telepresence Moves Out of the Boardroom and Into the Field

### 1. List and discuss briefly the benefits claimed by Cisco for its “In-person” experiences using telepresence.

Among the benefits claimed are reduced travel time and expense, less carbon emissions (greener), improved productivity. Other business benefits described include scaling expertise, accelerating time to market, redefining the customer experience, and unifying the organization across the globe.

### 2. AXA is a global financial services firm. Describe why they invested in telepresence.

A global firm needs to communicate internally, and with customers, on a global basis. Traditional executive travel is too expensive. They were looking for an immersive experience which would have the effect of being in the same room with other executives even though they were thousands of miles away. They were looking to improve the decision making process both in terms of speed, and quality. Briefly, the end result was economies of decision making, of travel, and improved collaboration.

### 3. Why does AXA need special rooms dedicated to telepresence? Why can’t conferences take place at the desktop?

Special rooms are used because the monitors are much larger than desktop units; the system requires special networking and computing equipment; and special rooms are like conference rooms, a place where discussions, debates, and decisions take place.

### 4. In the past, work was organized into central buildings located in central locations (like cities) in order to facilitate face-to-face interactions. What impacts might telepresence have on the organization of work? How could you use these tools to organize work on a global scale even when employees are in different physical locations?

Telepresence opens up the possibility that global corporations could be managed much more efficiently, with much less business and management travel, and with greater precision and speed, than is currently the case. Within a country, there would be much less need for large centralized headquarters. Telecommuting, which already describes the work lives of millions of Americans, becomes a more realistic option for employees.

## Case 2: Virtual Collaboration for Lotus Sametime

### 1. Based on the video and text of the case, list and briefly describe five areas where either version of Sametime may increase employee productivity. What do you think will produce the greatest increase in employee productivity?

Here are seven possible choices, and there may be more in the video: collaboration with remote and/or mobile teams; planning meetings; brainstorming; voting and polling (consensus building and deciding); presentations (slides); note taking; process design. There is no correct answer here, and it depends on the firm and the kinds of products and services being produced. An argument could be made that the most powerful application is simply “collaboration” across geographical boundaries.

### 2. How does Lotus Sametime support collaboration? What are the additional benefits of the virtual environment?

Sametime creates an environment where employees can see and talk with one another, share documents, and opinions. These activities are the essence of what we mean by “collaboration,” namely, working together towards a shared goal.

### 3. The case mentions “presence awareness.” What is presence awareness, and of what use is it?

Presence awareness is an industry term that refers to a very rich visual and aural experience made possible by new technologies including high speed processors, and very large broadband telecommunications links needed to process and share the visual environment. The objective is to make the participants feel as if they were in a face-to-face environment. The primary value of presence awareness is to re-create the emotional content of real, face-to-face meetings which are much more expensive to arrange with remote work teams. Presence awareness also refers to the ability of these enterprise level collaboration environments to keep track of the whereabouts of managers, and make communication with them more likely and easier.

### 4. What types of communication are integrated within Sametime's digital environment? What type of communication is missing? Does it make a difference?

Sametime includes nearly the entire gamut of human communication including speech, and writing. What’s missing potentially is the “face to face” element of human interaction, and the emotional communication that is possible in real human interaction. Often this is referred to as “non-verbal” communication. Anecdotal evidence suggests that non-verbal communication plays a significant role in group or collaborative decision making. At this point our experience with these collaborative environments is too limited to make a judgment about whether the absence of non-verbal communication is a negative or a positive. In the real-world, airline travel of business managers and sales persons in order to have face-to-face, in-person meetings, continues to play an important role in business life.

### 5. Do you think that virtual collaboration using avatars is more or less effective than traditional methods of collaboration (which include face-to-face, traveling to meetings, telephone conference calls, e-mail, and instant messaging)?

An argument can be made that avatars, a consumer technology, are just plain fun to work with and entertaining. As a result, management attention spans might be longer than otherwise the case, and hence avatars will increase the usefulness of digital collaboration environments. An argument could also be made that avatars, because they are entertaining, will tend to divert participants from the task at hand, and become intrusive. In this view, avatars are a gimmick.

# Chapter 8: Securing Information Systems

## Case 1: Stuxnet and Cyberwarfare

### 1. Why is the Stuxnet event considered to be historic?

Because it was the first documented effort to use computer malware to disrupt and harm another nation. In that sense, it was like the use of poison gas in World War I, or the use of nuclear weapons in 1945.

### 2. What is a danger that the creators of Stuxnet have created for other industrial counties, including the United States? What is the greatest fear created by Stuxnet?

The problem is that the code itself can be copied, changed, or replicated, and launched against the PLCs of the very nations who used it in the first place. It could also fall into the hands of mischievous hackers, private individuals.

### 3. Why are people (agents) needed “on the ground” in order for the Stuxnet virus to work?

People on the ground are useful, if not always necessary, to describe the configuration of the PLCs in a factory, and the local network they are connected to. If the network is encrypted or private, local agents are often needed to tap into the closed network to download the target software and upload the virus.

### 4. Why did Iran, and American commentators, not consider Stuxnet an act of war?

As the General noted in the video, there is a continuum between peace and all-out war. Stuxnet, he believed, could be seen as in between these two poles, and therefore a “hostile” event, but not all out war. All-out war again Iran might involve, for instance, strategic air strikes against that countries power stations that power the nuclear facilities. Stuxnet is a good deal less than a strategic conventional warfare strike.

## Case 2: Cyberespionage: The Chinese Threat

### 1. What are cyberespionage groups stealing from the United States?

All kinds of intellectual property such as research and development results, business plans, designs of software and machinery, software, and other products of the mind (intellectual property).

### 2. What does the video claim is the evidence these attacks are coming from China? Is this believable?

The ISPs and the URLs of the attackers are located in Asia. However, it is possible that Asian computers are compromised and are being used by others actually located in Europe, or other nations. Nevertheless, it is difficult to dismiss the opinions of so many experts that the attacks are coming from China.

### 3. What does Adam Siegel in the video claim is the motivation of the Chinese government for conducting cyberespionage against the United States?

Siegel claims the Chinese do not want to be dependent on the West for technologies, and they fear falling behind the West, which in turn might slow their economic growth. China wants to move from “made in China” to “Created in China.”

### 4. Why didn’t Nortel management take the Chinese threat seriously? Why do various contributors in the video claim that American management does not take the problem seriously?

The video is unclear about this question. Senior Nortel management may have been more focused on near term business difficulties rather than cyber threats that did not seem immediately related to their business performance.

### 5. The video claims the attacks on American corporate and military computer systems are increasingly sophisticated. Do you believe this is true?

The attacks are overwhelmingly simple rather than complex. The most common vector of attack is through phony emails or Web sites that employees are lured into clicking on. Once clicked, the malware finds places to hide in ordinary software like Microsoft Internet Explorer or Excel spreadsheets. The malware will have access to the same information as the legitimate user of the machine. The tools available for creating and using this malware is readily available on the Internet.

### 6. Industrial espionage is a kind of technology transfer. The video claims the very DNA of Google is being drained by China, and that the U.S. will lose its competitive advantages with respect to China. Do you agree or disagree? Why? How else is technology transferred? Is it possible to stop technology transfer of any kind?

On the surface, the video is insistent that Chinese cyberespionage is a significant threat to the United States. Yet the video is vague about exactly what has been stolen, and how important it really is to the market success of American firms. Moreover, it’s one thing to steal an industrial process, or computer code, it’s quite another to understand it, modify it, maintain it, and actually use it in a realistic organizational and business environment. Technologies don’t stand still, and stealing a technology does not help you create a technology.

Stealing the plans for an F-35 strike fighter may shorten the development time for a country, but actually making an F-35 involves a great many complimentary assets and skilled people that cannot be stolen. Last, American and European firms voluntarily transfer significant technologies to China every time they decide to establish factories in China. The competitive and business advantage of China lies not in its treasure trove of stolen intellectual property, but rather an inexpensive, disciplined urban labor force.

## Case 3: UBS Access Key: IBM Zone Trusted Information Channel

### 1. What are some common types of malicious software, or malware? What best describes the “man-in-the-middle” type of attack?

Common types of malicious software include viruses, worms, Trojan horses, and spyware. A keylogger is a type of spyware that records the keystrokes of the user. Many of these types of malicious software are used in bank fraud-related activities. The ‘man-in-the-middle’ attack is most often executed by a Trojan installed on the user’s system.

### 2. Provide some examples of each type of authentication factor. What are your experiences with each?

Examples might include a person question you need to answer to change your password for a site (a personal factor), a retinal scanner (a human factor), and the ZTIC (a technical factor).

### 3. Can you think of any drawbacks of the ZTIC device?

One drawback of the device is that while the Internet is ubiquitous, you would need to bring the ZTIC everywhere you go to safely perform banking transactions anywhere, anytime.

### 4. How might malicious attackers try to get around devices like the ZTIC?

Though the ZTIC might prevent attackers from performing any transactions themselves, more emphasis might be placed on acquiring other information from the user's hard drive, like account numbers, balances, and other transaction details.

### 5. Do you foresee a future where malware is completely eliminated, or protections are so good that malware is no longer a threat? Explain your answer.

While students may be inclined to say that malware is only a temporary phenomenon and is likely to be outpaced by preventive technologies, it's not likely this will happen. Too many people do not take efficient care of their computers for malware to die out completely.

# Chapter 9: Achieving Operational Excellence and Customer Intimacy: Enterprise Systems

## Case 1: Workday: Enterprise Cloud Software-as-a-Service (SaaS)

### 1. What kinds of functionality and capability does Workday provide to its customers?

Human capital management (human resources), payroll, financial information, and project management.

### 2. Why would a firm chose Workday over a competitor like Oracle or SAP? What role does a consulting firm like Towers Watson play in the implementation of Workday?

The cost to implement, update, and train, is far less than standard on-premise ERP systems. The emphasis is on ease of use and ease of implementation. Workday does not require a bevy of technical consultants like SAP and Oracle. New releases are automatically installed, and there is no need to maintain old versions.

But, on the other hand, the video also points out the important role of the consulting firm Towers Watson. So Workday does not install itself, and companies will need to learn how to translate their business processes, or change the, so the Workday software can work properly.

### 3. What role did the iPad play in supporting the development of Workday?

This is one of those instances when consumer technology is leading business technology. Millions of employs own and use iPads. iPads are more portable than laptops and desktop PCs. iPads have wonderful, pleasing graphics, and a powerful operating system that can provide an entire new user experience not available on a Wintel PC (including touching, pinching, and zooming, along with thousands of useful business apps, and maps).

### 4. What is the Workfeed feature and why is it like Facebook?

Workfeed is an interface for Workday which seeks to mimic certain aspects of Facebook’s news feed, postings, and event management. Workday combines this with a calendar, ability to prioritize tasks, and communicate with others in the firm.

Simplicity is the key to getting executives to use any enterprise system, and Workday emphasizes that the system should be as easy to use as any app on a smartphone, no training kit or manual should be needed. Because most people, even executives, have some familiarity with Facebook, similar features in a corporate system should be very easy for people to learn.

Business Model: Cost? Employees can download for free on the Apple store. No licensing fees. Customers buy a subscription to the work day service

## Case 2: Evolution Homecare Manages Patients with Microsoft Dynamics CRM

### 1. Visit the Web site for Microsoft Dynamics CRM to learn more about this software’s features and capabilities. What features of this software would be especially attractive to a company like Evolution Homecare?

Evolution wanted CRM to help it manage its patient relationships and keep track of patient services-therapy, prescriptions, and delivery. The software provides the capability to track and manage all activities and interactions for each patient and account from a single platform; to develop and revise customized customer contracts; to schedule services and resources; and to communicate with patients and pharmacies using email and messaging. Users can plan and track activities, tasks, budgets, and details for each patient, automate patient tracking and follow-ups, set up and manage recurring appointments; automatically track contract renewal dates and details; and stay connected across teams with a centralized view of service schedules and resources. The system will also automatically create or assign tasks and activities when rules are triggered; access customer data from any web-enabled device anywhere, anytime; identify trends and allocate resources with powerful predictive analytics

### 2. Why do you think Evolution chose Microsoft as its CRM vendor?

In addition to traditional CRM functions, Microsoft Dynamics CRM offers customization capabilities so that organizations can manage other types of relationships besides those with customers. Evolution would have found this capability helpful for addressing the unique requirements of managing patients in the home healthcare industry.

### 3. What benefits did Evolution realize by using the CRM software? How did the system improve decision making and operations?

Benefits have included productivity improvements (doubling the number of deliveries for a specific time period), enhanced inventory management, automation of pick lists, better resource planning, and more effective reporting to key stakeholders. Evolution’s CRM system can determine deliveries planned for any future month and the amount of product in stock, helping Evolution reduce stock holding by 40 percent. When a new patient is keyed onto system, tasks can be generated for Evolution’s team to organize delivery ahead of time. The system automatically generates a pick list for that patient from Evolution’s pharmacy. Managers can see tasks 2 weeks ahead and can allocate resources accordingly. The system can show exactly what a patient is using to determine if patients are taking their medicine properly.

### 4. If you were a patient, what benefits might you receive from this system?

Patients will experience more timely delivery, few if any stock outs (prescribed drugs will be available and delivered), and better tracking of their past orders.

## Case 3: Sinosteel Strengthens Business Management with ERP Applications

### 1. What is the business of Sinosteel, what are its major challenges, and how would an ERP system address the challenges they face?

A state-owned enterprise with seventy six subsidiaries worldwide. These different business units engage in all aspects of steel production including mining, processing, supply, research and development, trade, logistics, and equipment supply. They were a decentralized company with each subsidiary maintaining their own customer and vendor relationships, a disparate management culture unique to each unit, separate HR policies. The overarching business need was the need to manage this global diversity.

### 2. Why did Sinosteel pursue the development of an ERP system? What were the objectives? What challenges (risks) does ERP address for Sinosteel? [The CEO is difficult to understand on some of the objectives, but later in the video an IT manager is clearer and reflects the CEO’s position almost exactly. You will need to listen carefully].

Goals: optimize resources; optimize management resources; prevent information risks; optimize resource allocation, and optimize HR; management labor?”

### 3. What factors were important in the choice of Oracle?

A global company with a strong ERP product suite and reputation for delivery;

Oracle provided an integrated business management platform including ERP, CRM, and SCM modules, along with JD Edwards’s financial applications and PeopleSoft human resource applications. A strong, integrated suite of tools. One company, one database.

### 4. How did business processes change in order to implement this ERP system?

Management processes throughout the company had to change in order to implement the ERP system. Operations needed to be standardized across all units; coding of information and defining information had to be standardized and centralized; human resource management, along with custom and supplier management, also was centralized. Aside from the increases in efficiency and coherency, this centralization reduced information and financial risks (the problem of a customer dealing with several business units with no central awareness of the potential risk).

### 5. What do you think some of the implementation issues and risks might have been with this system?

Finding agreement on the changes in business processes across the diverse group of subsidiaries; developing the centralized coding and defining of data (what constitutes a fiscal year?); encouraging suppliers to conform to new purchasing procedures; finding internal talent who could implement the system, and avoiding reliance totally on Oracle consulting; training employees in new processes and data procedures; imposing centralized standards and procedures which may be less efficient than local standards and procedures; spending so much time and money on the project that the financial benefits net of costs are not substantial.

### 6. How did this investment in ERP systems help Sinosteel achieve operational excellence? What do you think were the benefits of installing this system given the substantial costs involved?

The benefits referred to in the video include the free flow of information (intermediate benefit) which results in greater management efficiency, greater operational efficiency, and faster, more accurate decision making.

# Chapter 10: E-commerce Digital Markets, Digital Goods

## Case 1: Groupon: Deals Galore

### 1. What are the weaknesses of Groupon’s business model described in the videos?

The video suggests that Groupon’s business model is not defensible, and that many very large successful Internet firms can compete with Groupon. The video suggests that Groupon is not sustainable because its marketing costs are too high, customers have no loyalty to merchants, and that merchants themselves report troubles with the Groupon marketing they purchase, primarily that too many price-conscious consumers show up once, and then do not return ever to pay full price. In some cases, merchants lose money that they never recover.

### 2. What features of contemporary e-commerce does Groupon Now! utilize?

Groupon Now! utilizes technologies for mobility, personalization, social networking, and location-based services.

### 3. What value does this service provide subscribing merchants? What value does it provide customers?

Groupon helps introduce new customers to a merchant’s products or services, with the hope (not always realized) that these customers will return again.

Groupon’s heavily discounted vouchers in nearby locations save customers time and money.

### 4. What kinds of businesses are most likely to benefit from using Groupon?

Groupon works well in local commerce markets in the leisure, recreation/entertainment, food service, and retail sectors. Businesses that have high fixed costs, and low variable costs might benefit from the Groupon model. For example, health clubs, music venues, corporate jet rentals, movies, and recorded music all have high fixed costs, but it costs almost nothing to produce one more unit. High margin businesses like jewelry where a 75 percent discount still results in a profit, might also be good candidates.

### 5. Visit Groupon’s Web site and enter your zip code. What kinds of deals are displayed? Would you use Groupon? Why or why not? What kinds of Groupon deals have you used?

There is no specific answer for this question. The displayed deals change daily, and the question calls for personal opinions of the student. You could visit a Groupon deal from your own email stream and walk through the deal, and discuss the experience, in class.

## Case 2: The Etsy Community

### 1. What is Etsy’s business model and revenue model?

Etsy is a market creator with a transaction fee revenue model/

### 2. How does Etsy’s Brooklyn headquarters depicted in the video reflect the culture and values of the company?

The video shows that the offices have a very communal and “homey” atmosphere, where as much as possible is homemade and employees are encouraged to work on crafts projects. The video also shows Etsy’s openness to its local community.

### 3. How important is “community” at Etsy? Visit Etsy’s Web site and describe its community-building features.

Community is extremely important at Etsy, both for promoting the sales process, for soliciting new ideas, and for bringing the company closer to its sellers and the public. Each item listed includes a personal profile of the shop owner. Etsy’s Web site features a blog, a “featured seller” of the day, and special “community” section where Web site visitors can share ideas, attend an event in the area, join a streaming workshop, or watch an archived workshop. They can also connect by joining a team with other members of Etsy’s marketplace and community, in order to meet people with common interests, and collaborate.

## Case 3: Ford AutoXchange B2B Marketplace

### 1. Who do you think would pay the cost for suppliers to put their parts catalogs onto these marketplaces like AutoXchange? Who should have paid costs?

One of the reasons that suppliers had a limited interest in participating in AutoXchange was that they would have to pay the costs of entering their product information in AutoXchange databases. Because the industry was the primary benefactor of AutoXchange, they should have offered to pay the vendors for their costs of participation.

### 2. What were the benefits of these systems and who would reap them?

Generally, the auto manufacturers stood to benefit the most from large scale B2b net marketplaces where thousands of suppliers around the globe would compete for sales to the big ten automakers. Suppliers faced the risk of intense competition, pressure to lower quality in favor of price, and losing control over proprietary engineering information in some cases.

### 3. Why did the Federal Trade Commission open an investigation of these marketplaces?

Net marketplaces owned by an entire industry offer the players (both suppliers and buyers) new opportunities to collude on prices, and restrict competition, through a variety of formal and informal agreements. The potential for monopolistic control over the auto parts supply business worried the Fair Trade Commission and the Justice Department.

### 4. What role do you think the technology played in the demise of these systems?

From a technical point of view, these systems worked although they did have database and data issues. First, there are millions of parts produced by auto suppliers and the technical specifications, price, and engineering documents had to be submitted to a central repository. There were also issues of data definitions and labels. From a practical point of view, implementing one of these marketplaces was never easy and took much longer than many thought.

### 5. Why would more “closed” private market places be attractive to both the industry giants who buy the parts and the suppliers?

Generally, auto makers have been attempting to reduce the number of suppliers they use, and to draw this smaller number of suppliers in to a collaborative, trusting relationship. This is entirely the opposite of a free-for-all price competition in an open digital market. Closed private net markets allow manufacturers and suppliers to build long term relationships.

# Chapter 11: Managing Knowledge and Collaboration

## Case 1: How IBM’s Watson Became a Jeopardy Champion

### 1. Was playing Jeopardy a good way to test machine intelligence? Why or why not?

Jeopardy questions are not designed for a computer to answer, and the game requires understanding the natural language used by humans when they speak, and knowledge from a vast array of data. This was a good opportunity for IBM to improve its question-and-answer machine and bring machine intelligence closer to human intelligence.

### 2. Is Watson a good example of a computer system demonstrating intelligence similar to that of a human?

Human intelligence is a far broader concept than merely answering Jeopardy-like questions by searching data bases very rapidly, and coming up with a list of answers ranked by score. Human intelligence includes intention, deceit, promise, and love, along with hate, and misperception. Human intelligence includes language. Watson is not capable of these aspects of human behavior. Watson has no idea of its future, and no objectives of its own. Watson is a machine. Watson does not have a language, even though it can understand some human language. Watson cannot speak on behalf of itself.

### 3. Would Watson be useful in customer service systems? What would it take for businesses to use Watson for this purpose?

Watson might be very useful for certain types of customer service systems where the service representatives need a great deal of specialized product knowledge. However, a Watson-like system costs tens of millions of dollars, and would probably be suitable only for a large company willing to make that kind of investment. The company would not only have to purchase the hardware but also supply information to the system, train the system to extract meaning from that information, and fine-tune the system to respond to natural language questions posed by customers.

### 4. Suggest some other applications for Watson.

Watson would be useful in information-intensive industries where a great deal of that information is in natural language form, such as financial services, call centers, and legal research, as well as medical diagnosis and treatment. And where rapid access to this information is required.

## Case 2: Alfresco: Open Source Document Management and Collaboration

### 1. How does Alfresco support a mobile business environment?

Alfresco Cloud platform makes documents available on any device connected to the Web, from laptops and desktops to smartphones.

### 2. Why is Alfresco superior to email for supporting collaboration?

Alfresco does away with email attachments, and makes all documents sharable and available to all in a virtual team by storing the documents on a cloud server. Employees can work together on documents and see the changes in real time.

### 3. What were the factors that caused the City of Denver to go with the Alfresco platform as opposed to more typical proprietary software from other vendors?

Three factors. The cost was far less than proprietary solutions. The open source approach meant that the City could benefit from the contributions of a very large community of developers. And the software used a Web-browser interface that was very easily understood by users.

### 4. What business process will Denver seek to automate in the future using Alfresco, and why use a document management system to automate this process?

The video describes the procure-to-pay business process, which covers a wide array of organizational units, personnel, and sub-business processes from procurement decisions, to ordering, storing/warehousing, distributing, and paying for goods and services. This single business process develops a large number of documents that are not readily shared in traditional environments. Alfresco would be able to integrate all the documents in this business process in a single repository and support collaboration among all the parties involved.

### 5. What problems did the New York Philharmonic seek to solve with Alfresco?

They were the largest repository of classical music documents in the world, and they had no single system in place that could be searched in an integrative way. Instead, they had an archive of sheet music, another for audio tracks, and another for personal histories and publications.

### 6. What benefits does Alfresco provide the Philharmonic?

The video mentions three benefits: flexibility to add new documents as they appear, and to make connections among different document types (audio, written, and image documents). Second, the ability to communicate with other scholars around the world. And third, stability of the Alfresco document core software.

## Case 3: L’Oréal: Knowledge Management Using Microsoft SharePoint

### 1. What are the challenges facing L’Oréal management?

There are 150 subsidiaries managing twelve brands all around the globe. The main challenge is coordinating all these subsidiaries and the teams that work in them. Global brands need to share some identical characteristics but also need to be customized and localized. Some subsidiaries in different locations are working on the same brand at once. All these teams produce documents that contain information and knowledge that needs to be shared. There was no common platform for sharing this knowledge prior to M@sternet outside of email and attached documents. There was no common strategy for the development of products and brands.

### 2. Make a list of all the functionalities of M@sternet described in the video. What kind of a knowledge management system is M@sternet?

### Email; discussion boards; collaboration sites can be created by global teams; search of corporate documents. As described in the chapter, M@sternet is a good example of a knowledge network type and a collaboration system. Most of the knowledge is unstructured but searchable; the knowledge is attached to the teams, and individuals, who create the content. It is possible, although the video does not make this clear, that "relevance" of the information and knowledge stored is determined by a page rank algorithm in the search engine. In that sense, social tagging and folksonomies become the principal ways in which knowledge is evaluated.

### 3. Why did L’Oréal say it chose the SharePoint platform?

It integrated easily with Microsoft Office documents. It was a prepackaged software that could be implemented in a week; widely used throughout the corporate world – there is a large user base and likely many consultants who can help implement and troubleshoot the implementation; the cost of boxed software is far less than custom implementations.

### 4. What do you think are the ultimate benefits of M@sternet for L’Oréal?

Greater management efficiency, lowering management costs; faster times to market; greater creativity enabled by sharing ideas and information; coordinating of marketing and branding efforts.

### 5. What might be some limitations of SharePoint in this application?

It is difficult to modify or add functionality to boxed software; it may require changes in the organization in order to implement; the corporate database of documents will grow very large in size unless there is an "editor" who can filter and delete information no longer relevant; search results may produce very long lists depending on the effectiveness of the search engine.

# Chapter 12: Enhancing Decision Making

## Case 1: FreshDirect Uses Business Intelligence to Manage Its Online Grocery.

### 1. How is it possible, as Braddock noted, to have a great deal of data but little information? How does the SAP database and business intelligence component change this?

Most small firms that grow in size (and are successful in some sense) build systems one-at-a-time, and without an enterprise-wide point of view. In part this is because small firms do not have the resources or time to build more comprehensive systems, and in part because nearly all attention is being paid to survival and growth, not back office administration. Whatever the cause, small firms end up with a hodge-podge of information systems that do not talk with each other or share information easily. The management information required is “there” in a number of systems, but not easily captured and used by managers. SAP’s enterprise system pulls together the information being produced by this hodge-podge of old systems and can display and analyze the data in a modern, integrated, fashion for managers.

### 2. What is meant by “visibility into the workflow” and why is it important to FreshDirect's success? What are exception screens and how are they used?

Many firms, and many managers, do not have a good understanding of how work is accomplished in their firms. They may know how many resources go into a business process, and what is produced by a business process, but they often do not have any intimate knowledge of what happens in-between input and output. Often there are no measures of how the process is working, the steps in the process, and where failures occur. “Visibility into the workflow” is an effort to map out the entire business process in some detail and track information produced at each stage of production.

### 3. What has been the impact on employees of the changes brought about by the SAP ERP system and associated business intelligence applications?

According to the video, employees feel much more empowered to answer customer questions, trace orders, and fix mistakes than in the past. Likewise with managers who not feel they understand and control the work process.

### 4. How is FreshDirect's use of its database related to its brand image? What is the most important element of their brand?

The key to FreshDirect’s brand is trust by the consumer that the firm will in fact deliver the groceries on time, to the correct location, with the correct items in the order, and with a quality higher than the local markets. SAP’s database and business intelligence software make it possible for the firm to achieve these objectives, and in that sense, strengthen FreshDirect’s brand.

## Case 2: Business Intelligence Helps the Cincinnati Zoo

### 1. Why was Cincinnati Zoo losing opportunities to increase revenue?

Management did not have enough information about what influences customer behavior and spending to devise marketing campaigns to attract more business. Managers also lacked detailed information for analyzing operations.

### 2. Why was replacing legacy point-of-sale systems and implementing a data warehouse essential to an information system solution?

The Zoo’s data were maintained in 4 different systems, and some of the data was only accessible manually. The data could not be combined to develop an overall picture of the company.

### 3. Visit the Cognos Web site and describe the business intelligence tools that would be the most useful for the Cincinnati Zoo.

IBM Cognos provides a toolset for querying and reporting, analysis, [scorecarding](http://en.wikipedia.org/wiki/Balanced_scorecard), dashboarding, and monitoring events and metrics. The software includes capabilities for planning, scenario modeling, real–time monitoring, collaboration, and predictive analytics.

### 4. How did the Cincinnati Zoo benefit from business intelligence? How did it enhance operational performance and decision making?

The Zoo now has the detailed data and analytical tools to understand visit, usage, and spending patterns of individual customers. Managers can make better decisions about how to target marketing and promotions specifically to each customer segment. The business intelligence system also provides information and insights for improving operations, such as optimizing staffing in light of changing weather conditions or extending store hours for ice cream stands. Food sales increased 30.7 percent and retail sales increased 5.9 percent.

# Chapter 13: Building Information Systems

## Case 1: IBM: Business Process Management in a Service-Oriented Architecture

### 1. How would you define "business process management" based on this video and text reading? How would you compare it to business process re-engineering, continuous improvement, and total quality management approaches?

Business Process Management (BPM) is an approach to business which aims to continuously improve business processes. In this sense it shares a great deal with total quality management which seeks to improve the quality of business processes by decreasing error and rejection rates, improving customer satisfaction, and reducing costs. However, business process management is a bit broader, concerned with quality, but expanding beyond that include efficiency, cost, benefits to the firm, and the ability of managers to measure and control business processes.

### 2. What are the major objectives of BPM?

More complete and timely measures of process effectiveness; better measurement of a process in terms of resources used and time to make decision (or process the document). Greater management understanding and control of business processes; greater flexibility due to the ability to change the process as conditions warrant; ability to adapt to changing business conditions.

### 3. What is the significance of a "service oriented architecture?" What difference does this make for implementation, cost, and flexibility of the BPM tools?

An SOA allows the IT department to use data from legacy systems and import this data into the BPM software. This reduces implementation costs and speeds up the development process. Firms do not have to completely rebuild their underlying transaction processing systems. Also, the BPM software comes with precoded, predefined modules that can be plugged into each firm’s implementation of the BPM as needed. All this without significant programming effort. In addition, the applications can be re-organized as the business process changes.

### 4. Why is it important that the BPM software produces a Business Process Execution Language (BPEL) model for the IT department?

The BPEL model is developed by the business process designers (equivalent really to systems analysts who really understand the business requirements and the information requirements). These designers determine what are the business rules and logic. The designers need a tool that can translate these business requirements into a set of explicit directions to the IT department who must develop the technical foundation for the system, and must convert the business rules into a set of decision tables which govern the flow of the work.

### 5. What is the utility of “key performance indicators” (KPI)?

KPIs are determined by the process designers as the key measures of process performance that the system must deliver to managers. The KPIs become the measures that managers use to know if they are succeeding, within budget and target, in the business operation. Generally, KPIs are displayed to middle and senior managers on portal dashboards in their client or desktop computers.

### 6. Why is it important for managers to be able to “drill down” into the data and system?

Being able to drill down allows managers to understand why changes in the KPIs are occurring. In other words, the drill down capability enhances management understanding, and improves management decision making because it will be based on a real time information, not second guesses, or received wisdom.

## Case 2: IBM Helps the City of Madrid With Real-Time BPM Software.

### 1. List some of the factors that complicated the efforts of emergency crews (primarily fire, police, and medical personnel) in responding to the Madrid attack.

The attacks took place simultaneously at four different locations; it is a crowded urban city with much congestion; the number of calls for emergency help could easily overwhelm a response system; the scale and power of the attack was unprecedented, and not planned for.

### 2. What was the problem with the existing communication system?

There was no single system. In the past, there were three different communication systems: one for the police, another for fire, and another for medical and ambulance services. As a result, there was no way to know the demand for police, firemen, and medical personnel. Or to coordinate with one another resulting in misallocation of responder resources, e.g. too many police, not enough medical, or vice versa.

### 3. Describe the new system that was put in place after the attacks.

The new system is a single system that evaluates in-coming calls, and assigns response teams based on the nature of the event, and continues to follow and evaluate the response until the event issues have been addressed. The system operates in real time, and uses a city map as one device to coordinate resources, plus a database that keeps track of the event and response.

### 4. Describe the business process of the new emergency response center.

The process begins with a call for assistance. Telephone personnel at the center codify, locate, and prioritize the call within one minute. Once complete, emergency personnel decide what the best response to the problem is, and allocate emergency response teams accordingly. The same people track he response and the results in real time. The emphasis is on reducing emergency response times, and placing the correct balance of emergency personnel on site.

### 5. What is the response time goal and what progress has been made?

Emergency service providers believe that the faster teams can get to the site, the better the result. Police, fire, and medical personnel around the world accept this notion. The Madrid City managers claim a 25 percent reduction in response times over several years, with 81 percent of event response times now below 8 minutes, compared to 47 percent in 2008.

## Case 3: Rapid Application Development with Appcelerator

### 1. What are “rich Internet applications” and why are they important today?

Rich Internet applications are those which require interaction with the user, often contain video, audio, and images, and do not require continual page turning (calling for a new screen for every user action) for the user to interact with the application. Instead, these applications rely on AJAX and other techniques to provide a more realistic or "rich" user experience. These types of applications are increasingly expected by Internet users and make for much more powerful consumer experiences.

### 2. How can Titanium speed up the application development process?

Titanium speeds up the application development process by using standard languages and techniques, open-source tools like Java, Python, and PHP, and the ability to code the app once, and deliver on multiple platforms.

### 3. Why is it important that Titanium is an “open-source” tool?

In using an open-source platform, business customers (who would be paying fees for commercial versions) benefit from a community of developers who continuously improve and build the software tools for no charge to the business firms. Also, the resulting products blend easily with corporate environments using standard tools like HTML, Java, and Apache server (Linux).

### 4. Why is it important to deliver on different platforms?

Today, consumers and business people migrate across platforms from desktops to tablets and smartphones. At times, they use all three platforms nearly simultaneously. Therefore, it is important that users have a consistent experience across all platforms, and that firms deliver apps that work on all platforms

# Chapter 14: Managing Projects

## Case 1: Blue Cross Blue Shield: Smarter Computing Project

### 1. How does BCBS say it wants to serve customers better?

Adjudicate claims faster, provide benefits faster, and provide the service at a cheaper price. The video does not say what “cheaper” means.

### 2. What are the major obstacles to providing health described in the video?

Balancing customer needs, government mandates, and making insurance affordable.

### 3. What system difficulties did BCBS face?

Multiple systems, many containing the same or similar background information on members. Multiple entry points meaning that many different people could work with the records on one system.

### 4. What does the video mean by “multiple truths” or developing a system with a “single source of truth?”

With multiple systems containing the same data, and multiple data entry points and people, it’s possible to develop different versions of a single member, e.g. a member with a different name in one system than another, or a different address.

### 5. What are the key benefits of using IBM’s WebSphere to build a single database? In terms of project management issues, described in the book chapter, what did using IBM provide to the BCBS group in charge of building the system?

IBM brought expertise and knowledge to the project which reduced the risk of completing the project on time and on budget. Direct business benefits were providing customers and provides a consistent user experience in dealing with the company, with reliable and efficient business processes.

## Case 2: NASA Project Management Challenges

### 1. Why are individuals so important to the NASA project teams?

In a team ultimately tasks are assigned to individuals. If they are not competent they can't deliver for the team what is needed. The project stumbles and fails until incompetent people are removed.

### 2. What is the Lessons Learned Program and how might it relate to better project management at NASA?

The Lessons Learned Program originally start in the U.S. Army as a post-operations frank discussion among officers and soldiers about what went right, and what went wrong in an operation. A document is produced from these meetings and operating procedures for the next operation are changed accordingly to avoid mistakes. The Lessons Learned Program at NASA has a similar mission to identify errors and mistakes, change procedures for the project and team, and move forward.

### 3. Why is individual accountability so important for managing risks in NASA projects? Doesn't the team shoulder the responsibility for achieving success?

Accountability for teams begins with accountability for individuals. The work of teams is performed by truly competent individuals. That’s why the video interviewers keep emphasizing the importance of “quality people” on your team because you “can’t do it all yourself.”

### 4. What are the key competencies of a good project manager according to the NASA managers?

Basic elements would include knowledge and commitment to the overall goal of the project, as well as the goals of the unit he or she is leading. And respect from other members of the team.

Project managers have to be good at risk management and understand how to mitigate risk down to the level of the individual. PMs need to ask themselves and their team members, “Would you fly this shuttle.” In addition, a PM needs to know how to break down very large goals (such as build a new landing module) into achievable sub-goals and projects, and then put together the teams by selecting individuals who have the skills and competency to achieve the objectives of each team.

### 5. Is "leadership" the same as being a good project manager?

No. Leadership involves convincing team members they can achieve the objective, and that you are the "right" person to lead this effort because of your own special qualities of competence, know-how, and ability to communicate. Some good project managers are also good leaders. Some good project managers are technically very competent but not good leaders. Ideally, good project management and leadership skills come together in a single person.

### 6. What does leadership integrity have to do with the success of a project?

The position of authority occupied by the project manager/leader depends on individuals on the project team believing that the leader is making decisions on the basis of mission accomplishment, what's best for the mission objective, and not out of personal or bureaucratic considerations.

# Chapter 15: Managing Global Systems

## Case 1: Daum Runs Oracle Apps on Linux

### 1. What efforts is Daum making to expand globally? In what countries does it maintain a presence?

Daum maintains presences in Japan, China, and the U.S. Thus, it's important for them to maintain an infrastructure that is standardized across all of its various offices and departments.

### 2. Why was Oracle a good fit for Daum?

Oracle was a good fit for Daum because of its comprehensive suite of e-business applications that were useful across Daum's enterprise. Relying on a larger vendor like Oracle was important to Daum so that they could handle all of their IT system solutions through one company.

### 3. Describe the benefits of Linux as opposed to other operating systems.

Linux runs as smoothly as other Unix-based ERP systems at a fraction of the cost. Also, Oracle's systems already run on Linux, making it easier for the two companies to interact.

### 4. What kind of broadband infrastructure does South Korea have? What does this mean for Daum?

South Korea has an advanced broadband infrastructure, often considered the best in the world. As a result, Daum is in a strong strategic position to capitalize on the frequent Internet usage of its users. However, the company must maintain a strong infrastructure to handle the content demands of site visitors.

### 5. What more can Daum do to gain ground on its competitors?

Daum is optimistic about its future prospects in South Korea, but expanding further into the markets of other countries will help its bottom line.

## Case 2: Lean Manufacturing and Global ERP: Humanetics and Global Shop

### 1. What are some of the software modules used by Humanetics? Pick one of these modules and describe how this module could firm compete and meet customer requirements?

The video mentions that the firm uses job tracking, inventory, estimating, bill of materials, account, and advanced planning and scheduling modules. Students should pick one of these modules and try to estimate how it would help Humanetics.

### 2. What does the video say is the payback that Humanetics has received from using Global Solutions?

The video mentions that the ERP system has enabled its global expansion, and increased the ease of use of its manufacturing systems over time.

### 3. What role does the “global shop document control” capability play in the globalization of the firm?

This capability allows the firm to design its products in one central location, and then share them across all of its production facilities including China. This ensures the product will meet specification regardless of where it is produced.

### 4. How does the firm use Global Solutions to monitor and increase productivity among its workers?

The ERP system tracks the attendance, down time, and time-on-task of all employees, and can rather precisely understand how much value each employee is adding to production, and the revenue each employee generates as a result.

## Case 3: Monsanto uses Cisco and Microsoft to Manage Globally

### 1. How many Fortune 100 companies use Cisco WAAS services?

About half of Fortune 100 companies use Cisco WAAS services. Cisco reports that 54 of the 100 use some form of these services. This isn't a surprise, as Cisco is a company with sufficient size and global reach to meet the needs of a company large enough to be in the Fortune 100.

### 2. Why is it important to Monsanto that employees worldwide be able to use their Monsanto Connection portal with ease?

Because Monsanto is a global company with employees around the world, it's important that all of those employees be able to use the company portal to facilitate effective collaboration.

### 3. What is the role of SharePoint in the portal? What is the role of WAAS in the portal?

SharePoint is the platform on which the portal is based. WAAS is the technology that allows users to more quickly acquire the materials they need via the portal. Both are essential to the proper function of Monsanto Connection.

### 4. Find other companies that use SharePoint and Cisco WAAS services and briefly describe their experience with those systems.

For Cisco WAAS, you can find other examples of positive implementation at NBC, Sprint, Siemens, Yokogawa, ADC Telecom, Rehau, Bissell, and many more on the Cisco site. Similarly, the Microsoft site has a listing (http://www.microsoft.com/sharepoint/prodinfo/evidence.mspx) of companies using Microsoft SharePoint, including Energizer, Hawaiian Airlines, and TV Guide.

### 5. For a company as large as Monsanto, why were Microsoft and Cisco attractive choices for their IT needs?

Microsoft and Cisco are both similarly large companies with the ability to meet the significant needs of Monsanto. Choosing a smaller, less established company might still work out, but with Microsoft and Cisco, Monsanto chose proven commodities with track records of working with large global

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