WEEK 1

Five IT Megatrends in the Information Age : Mobile - Social Media - Internet of Things - Cloud Computing - Big Data. **Five IT Megatrends: 1.Mobile; Post-PC era,** Most people have their mobile phone within their reach 24/7, **Developing World,** Leapfrogging traditional PCs. - Primary means of accessing the Internet. **Implications of Increased Mobility,** - Ability to be connected anywhere, Ability to be connected to the right information at the right time, **Consumerization of IT,** - **"Bring Your Own Device" (BYOD),** - **The propensity for users' experiences with technology as consumers to impact their expectations regarding their technology experiences at work.** - Increased productivity, Increased flexibility, Increased satisfaction. **Social Media:** Share updates or pictures with friends and family, Encourage employees to share information or to work with their customers.Harness the power of the crowd (crowdsourcing) to get people to participate in innovation and other activities(e.g., Wikipedia, Amazon Mechanical Turk

3. Internet of Things: A broad category of devices (sensors, or meters) that are interconnected and can share data over the Internet, Potential for gathering useful data is limitless. - Applications for home automation, smart cities, smart metering, smart farming.-health. - Monitor home temperatures and remotely control thermostats, Monitor traffic patterns, Monitor soil moisture in golf courses and reduce the need for watering.Monitor machinery and make production more efficient.Jardiac monitors alert physicians of patients' health risks.**4. Cloud Computing: Web technologies enable using the Internet as the platform for software and storage.** - Functionality is accessed via a browser, Data/Functionality can be accessed from any device connected to the Web browser. **Many regard cloud computing as the beginning of the "fourth wave" of change.** Not only the applications but also the data reside in the cloud. **5. Big Data: Information that is too voluminous, too fast-moving, or too complex to be handled by traditional methods.** Data sets are continuously generated and growing exponentially.**Data analytics are becoming more data front internal and external sources.** IDC estimated that in 2011, 1.8 zettabytes of data (57 billion 32GB iPads) were generated and consumed.This number is forecast to grow by 50% per year.**Big Data Challenges: Data Quality,** Data Security, Data Governance, Data Storage, Data Processing, Data Analytics, Data Visualization, Data Sources, Data Integration, Data Standardization, Data Ownership, Data Ethics, Data Scientists, Data Silos, Data Volume, Data Velocity, Data Variety, Data Veracity, Data Value, Data Latency, Data Obfuscation, Data Redundancy, Data Decay, Data Proliferation, Data Storage Costs, Data Transfer Costs, Data Quality Issues, Data Ownership Issues, Data Security Issues, Data Privacy Issues, Data Compliance Issues, Data Ethics Issues, Data Scientist Issues, Data Silos Issues, Data Volume Issues, Data Velocity Issues, Data Variety Issues, Data Veracity Issues, Data Value Issues, Data Latency Issues, Data Obfuscation Issues, Data Redundancy Issues, Data Decay Issues, Data Proliferation Issues, Data Storage Costs Issues, Data Transfer Costs Issues

make sound and timely business decisions. - Trust - stemming from fragmentation of organization. The 12 business units share many customers - each unit was managed independently **Clarify strategy before planning the enterprise system** - Decentralized strategy - Individually improving customers served and products or commodities, the company that can offer the best customer often wins the order- Focused on 4 key cross-unit processes- Materials management, production planning, order management, and financial reporting- Focus is distinct from the organizational structure- Focused on 4 key cross-unit processes- Materials management, production planning, order management, and financial reporting- Focus is distinct from the organizational structure **Create competitive advantage with the enterprise system**- The system generated the real-time information necessary for connecting sales (demand) and production (supply) - **Create competitive advantage with the enterprise system**- Forecasts are based on customer demand- Production is based on the ability to supply the demand- Sales people can be capability.' **Fundamental changes to organizational structures - not just computer systems**- Combining all accounts-receivable and credit departments into one function- Consolidated each customer's activities into one account- Combining all unit's customer-service departments → gave customers one contact point- **Put the right people in place**- Computer systems without the right people don't change organizational behavior- A new demand manager position to orchestrate sales and production planning- Salespeople can guarantee orders six weeks ahead of production. **Large and broadly representative implementation team (60 persons)**- Business analysts, information technologists, "super users"- Representatives from all units affected by the system- Sales and customer service- Production- Finance- Purchasing **Unit-by-unit rollout enabled staffing the effort mainly with insiders**- Reduced implementation costs and boosted employees' understanding of the system **The implementation team**- Company knew the business and how it operated- Knew the system- Knew how to implement **Business process reengineering**- Clarify strategic and organizational needs and business implications of integration – before implementing- How might an enterprise system strengthen our competitive advantages?- How might it erode them?- What will be the system's effect on our organization culture?- Do we need to extend the system across all our functions or should we implement only certain modules?- Do we need to change our business strategy to take full advantage of the system's capabilities?- Do our business processes and our organization structure suit us better than an enterprise system? **Evolution of Enterprise Systems** ↓ **Internally focused systems**- Support functional areas, business processes, and decision making within an organization- Enterprise Planning Systems (EPS)- Integrated business processes- Supply chain management- Customer relationship management- Financial systems **Externally focused systems**- Coordinate business processes with customers, suppliers, business partners, and others who operate outside an organization's boundaries- Customer Relationship Management (CRM)- Focuses on managing customer information- Supply Chain Management (SCM)- Focuses on managing information about business partner relationships- Supply Chain Management (SCM)- Integrates the value chains of business partners within a supply chain, improving the coordination of suppliers, product or service production, and distribution. **ERP Core Components**: **Financials**: Allow organizations to manage corporate finance functions by automating financial supply chain management, financial analysis, and financial accounting management **Human capital management**: Allows organizations to manage their human resources by automating payroll, with functionality for employee transaction management and employee life cycle management. **Operations**: Empowers organizations to streamline operations with integrated functionality for managing product development, production, inventory, and customer orders **Analytics**: Provides organizations with the ability to create reports and analyses to support operational and strategic decision-making **Corporate services**: Allows organizations to optimize centralized and decentralized services for managing real estate, corporate travel, and incentives and commissions. **ERP Benefits** **Tangible benefits**- Improved inventory management- Improved cash management- Improved order management- Improved customer interaction- Reduced operating expenses- Reduced IS costs- Improved supplier integration- Improved compliance with standards, rules, and regulations. **Costs**- Travel and training costs for personnel- Ongoing customization and integration costs- Business process studies- Project governance costs **Business Process Management (BPM)** ↓ **A systematic approach to improving an enterprise's business processes to ensure that it operates efficiently and effectively and that it meets customer requirements.** **Internal improvement approaches by all or part of an organization whereby people evaluate their own work and attempt to streamline it operate critical**- **Focused on achieve dramatic improvements in one of three performance measures, such as quality, cycle time, or cost**- Business Process Reengineering (BPR) - The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance, such as cost, quality, service, and speed (Hammer and Champy, 1993) - Encompasses the envisioning of new work strategies, the actual process design activity, and the implementation of the change in all its complex technological, human, and organizational dimensions- Business process redesign (BPR) - Analyzing and redesigning business processes to make them more efficient and effective- Business Scheduling**:** Inventory and Safety Stock Planning**B. Supply Chain Execution (SCE)**- Puts the SCM planning into motion and reflects the processes involved in improving the collaboration between the company and its suppliers- Financial flows- Accounting- Product flows- Inventory- Information flows- Information about products and they move through the supply and to foresee external events- Analytics: Use of key performance indicators to monitor performance of the entire supply chain, including sourcing, planning, production, and distribution- Supply chain analytics- Analyzing supply chain data to improve business performance- Supply chain analytics- Analyzing supply chain data to improve business performance **Safety stock planning**: Assign optimal safety stock and target stock levels in all inventories in the supply network. **Distribution planning**: Optimize the allocation of available supplies to meet demand. **Supply network collaboration**: Work with partners across the supply network to improve accuracy of demand forecasts, reduce inventory buffers, increase fill rates, and lower the cost of transportation and distribution. **Demand management**: Improve forecasting by using point of sale data and other information from customers to predict demand. **Manufacturing execution**: Support production processes, taking into account capacity and material constraints. **Order promising**: Provide answers to customer relationship management queries regarding product availability, taking into account inventory, production capacity, and transportation capacity and constraints. **Transportation management**: Optimize transportation processes, taking into account transportation modes and constraints. **Warehouse management**: Support receiving, storing, and picking of goods in a warehouse. **Supply chain analytics**: Monitor key performance indicators to identify and address bottlenecks and other problems. **Supply Chain Planning (SCP)**- Involves the optimization of supply and demand effectiveness **Supply Chain Efficiency**- The extent to which a company's supply chain is focusing on minimizing procurement, production, and transportation costs- Companies that pursue a low-cost competitive provider strategy- **Supply Chain Effectiveness**- The extent to which a company's supply chain is focusing on maximizing customer service - Companies that pursue a differentiated strategy- **Supply Chain Planning Systems**- Analyze customer demand- Develop production plans- Develop a supply-chain optimization standard for the Web- Allows designers of Web documents to create their own fans, enabling the definition, transmission, validation, and interpretation of data between applications and between organizations **Extensible Business Reporting Language (XBRL)**- Provides a standard way for companies to file financial information with regulatory agencies and private companies to share financial information with each other, with industry analysts, and with shareholders **Radio Frequency Identification (RFID)**- The use of electromagnetic energy to transmit information between a tag and a reader- Analyze customer acquisition- Analyze customer acquisition- Optimize pricing- Make warehouse and inventory management- Greater distances and relatively inexpensive- Passive tags, up to a few feet (~$0.10); Active tags, hundreds of feet (~$5) **Customer Relationship Management (CRM)** ↓ **Today's empowered customers have many ways to obtain and spread information and opinions about companies**- **Companies search for ways to widen, lengthen, and deepen customer relationships** - **It is mistaken to think of CRM as just a software application**- Implementing CRM involves a company-wide business strategy- Requires important information flows- Through the introduction of reliable systems, processes, and procedures- **Three main objectives**- Attract potential customers- Create customer loyalty- Portray positive customer experiences **Pursue customer satisfaction and loyalty**- Customer satisfaction- Customer loyalty- Customer satisfaction is the foundation for fundamental business processes – marketing, sales, and support – for interacting with customer- Enables direction interaction with customers- Aids in the execution of CRM strategy- Analytical CRM - Systems that analyze customer information to make strategic business decisions- Provides a 360-degree view of the customer- Enables the analysis necessary to more effectively manage the sales, service, and marketing activities- Aids in the development of CRM strategy- **Collaborative CRM**- Systems for providing effective and efficient communication with the customer from the entire organization- Provides the communication capabilities of the CRM environment **Operational CRM** ↓ **Sales Force Automation (SFA)**- Automate the tasks of the sales force- Support sales force with information about customers- Support the sales force in managing customer history and preferences- **Customer Service and Support**- Modules that automate service request, complaints, product returns, and information requests- Help desks, call centers, customer relationship management (CEC)- Automate the handling of customer service and support requests- Automate the handling of customer service and support requests- Right messages are sent to the right people through the right channels- Analyze the effectiveness of marketing campaigns- Efficiently route the sales leads to the right salespeople **Analytical CRM** ↓ **Data warehouse**- Analyze customer information- Analyze customer information- Customer profiles- Optimizing pricing- Make warehouse and inventory management- Greater distances and relatively inexpensive- Passive tags, up to a few feet (~$0.10); 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