

Information Technology for Management

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Introduction to Information Technology

**(Information Society & Business
in Digital Business)**

جامعه اطلاعاتی و مدیریت

- نیاز به سیستم اطلاعاتی مهمترین نیاز مدیران در عصر حاضر است.
- هیچ سازمانی نمی تواند بدون اطلاعاتی که در خارج از سازمان وجود دارد به حیات خود ادامه دهد.
- همه مدیران نیاز به جهانی شدن در عصر حاضر را احساس کرده اند و خود را نیازمند ارتباطات و همکاری های جهانی می دانند تا بتوانند سیاست های استراتژیکی سازمان را تعیین کنند.

جامعه اطلاعاتی و تجارت

- در اقتصاد دیجیتالی مبتنی بر کاربردهای ICT ارتباط بین تولید کنندگان و مصرف کنندگان بیشتر می شود.
- مفاهیم جدیدی چون کسب و کار الکترونیک و تجارت الکترونیک تعریف می شود.
- مشتری گرایی بیشتر می شود و محصولات و خدمات کاملا سفارشی و مبتنی بر سلیقه هر یک از مشتریان ارائه می گردند.
- برخورداری از اطلاعات بیشتر و امکان انتخاب بهتر و خرید ارزان تر از دیگر ره آوردهای ICT می باشد

جامعه اطلاعاتی و آموزش

- یادگیری به عنوان یکی از نیازهای اساسی انسان تحت تاثیر روش های نوین ناشی از کاربردهای ICT قرار گرفته است
- آموزش شبکه ای ، کلاس های مجازی ، دانشگاه اینترنتی و آموزش از راه دور موضوعاتی است که از کاربردهای ICT در زمینه آموزش محسوب می شود
- برخی از مزایای استفاده از ICT در این زمینه عبارتند از :
 - حذف عواملی چون دوری فاصله
 - عدم نیاز به جا به جایی اساتید
 - کاهش کلی هزینه ها
 - افزایش کیفیت آموزشی

جامعه اطلاعاتی و جنگ

- در عصر اطلاعات مفاهیم سنتی جنگ رایج در عصر صنعت جای خود را به مفاهیم جدیدی داده است؛ به گونه ای که تحت عناوینی چون جنگ دیجیتالی و یا جنگ اطلاعات از آن یاد می شود.
- همانگونه که جنگ های «موج اول» یا دوران کشاورزی برای سرزمین و جنگ های «موج دوم» یا دوران صنعتی برای کنترل ظرفیت تولید بود، جنگ های «موج سوم» یا دوران اطلاعات برای کنترل دانش و اطلاعات است.

جامعه اطلاعاتی و کار

- عصر اطلاعات با ویژگی های خاص خود، ماهیت کار و اشتغال را دستخوش تغییر و تحولات فراوانی می کند
- برخی از این تغییر و تحولات عبارتند از :
 - از بین رفتن برخی از مشاغل
 - تغییر برخی از مشاغل
 - ایجاد مشاغل جدید
 - ایجاد پدیده دور کاری
 - تخصصی تر شدن مشاغل و پر اهمیت شدن ارتقا روز افزون سطح مهارت کارکنان
 - مشاوره شغلی هوشمند و گسترش بازار کار

جامعه اطلاعاتی و حکومت

- فناوری اطلاعات حکومت ها و نهادهای اجرایی را تحت تاثیر قرار می دهد
- در گذشته نظارت لحظه‌ای بر اجرای قانون، رای گیری سراسری کم هزینه، دادرسی ارزان و ... میسر نبود ، اما امروزه به مدد ICT نهادهای مختلف حکومت از امکانات زیر بهره برده است ، بگونه ای که دولت های الکترونیک تشکیل شده اند

جامعه اطلاعاتی و فرهنگ

- دسترسی سریع و ارزان به اطلاعات موجب نشر سریع اخبار، رویدادها و ارتقای آگاهی های عمومی در جامعه می شود.
- امکان یادگیری در هر زمان و هر مکان یک آموزش همه جانبه را برای کلیه اقشار جامعه فراهم می کند.
- بنابر این فناوری اطلاعات و ارتباطات و بطور کلی تشکیل جامعه اطلاعاتی در توسعه فرهنگ جامعه تاثیر بسزایی دارد.

جامعه اطلاعاتی و شهرهای الکترونیکی

- فناوری اطلاعات در مدیریت و خدمات شهری نیز تاثیر زیادی را خواهد گذاشت.
- "شهر الکترونیک" یا "شهر هوشمند" نتیجه تاثیر ICT بر ابعاد مختلف شهری می باشد
- برخی از مزایای چنین شهری عبارتند از:
 - افزایش بهره وری و کیفیت در ارائه خدمات شهری
 - حذف بروکراسی و افزایش رضایت شهروندان
 - افزایش نقش مردم در تصمیم سازی های شهری
 - حفظ محیط زیست و کاهش آلودگی و ترافیک
 - امکان بازدید و استفاده از نمایشگاه ها ، موزه ها ، کتابخانه ها بدون حضور فیزیکی

مشکلات فناوری اطلاعات در صنایع کشور

شناخت ناکافی

- حتی واژه فناوری اطلاعات برای برخی مدیران باتجربه صنایع ما، کلمه‌ای نامانوس است.
- فناوری اطلاعات و ارتباطات، عمری چندان طولانی در کشور ما ندارد و به دلیل همین سابقه کوتاه، اعتماد و اقبال به آن در بین مدیران باتجربه کاهش می‌یابد.
- تغییرات پیوسته و پرسرعت فناوری اطلاعات عامل دیگر ناآشنایی صاحبان صنایع با فناوری اطلاعات است.
- سرعت این تغییرات، خود شبهه‌ای از پیچیدگی نیز ایجاد می‌کند و در مجموع سبب تردید مدیران صنایع در آشنایی و بهره‌برداری از IT می‌شود.
- عدم ارایه شفاف و صحیح توانایی‌ها و امکانات مدیریتی IT از طرف صاحبان این صنعت به صنایع دیگر عامل بسیار مهم دیگر این شناخت ناکافی است.

شناخت ناکافی (ادامه)

- نگرشی فناوری زده بین مدیران کلیه صنایع ما و به خصوص مدیران صنعت IT، سبب شده است تا تنها تکنولوژی‌هایی نظیر Web based ،Platform Independent J2EE ،applications ،DBMS های توزیع شده و... به عنوان مواد تشکیل دهنده فناوری اطلاعات به مدیران صنایع دیگر معرفی شود.
- آنچه در فناوری اطلاعات اهمیت دارد، یک دید و نگرش اطلاعاتی و ارتباطی نوین برای مدیریت بهینه‌تر منابع سازمان اعم از مالی و انسانی و ماشین‌آلات و غیره است و این نگرش در نهایت منجر به کاهش هزینه‌ها و افزایش درآمدهای سازمان و در نتیجه افزایش سودآوری می‌شود.

سوء سابقه

- وجود تعامل‌های منفی گذشته و سوابق ناخوشایند برخی اشخاص یا شرکت‌های فعال در این حوزه،
 - فعالیت‌های غیر مهندسی
 - نداشتن دانش لازم
 - در اختیار نداشتن توان فنی اجرای پروژه‌ها
 - کمبودهای قوانین حفظ حقوق پدیدآورندگان آثار نرم‌افزاری
 - رعایت نکردن تعهدات، به‌خصوص در بحث‌های پشتیبانی و اعمال تغییرات
 - نتایج ضعیف برخی سیستم‌های اطلاعاتی
- روی آوردن به ارایه‌دهندگان خارجی راه‌حل‌های نرم‌افزاری،
 - نبود انطباق لازم با شرایط بومی
 - عدم شناخت شرکت‌های عرضه‌کننده راه‌حل از محیط و شرایط کاری سازمان‌های ایرانی

نگاه فانتزی

- در باور بسیاری مدیران و مخاطبان آنها، فناوری اطلاعات کالایی لوکس و فانتزی تصور میشود که مخارج زیادی برای سازمان به همراه دارد و صرفاً خاصیت نمایشی برای سازمان به همراه می‌آورد.

– نبود باور و اعتقاد به توانایی‌های فناوری اطلاعات در رفع مسایل و مشکلات سازمان

نسخه برداری

- تولید محصولاتی که فاصله زیادی از الزامات و نیازهای مختلف صنایع کشور دارد،
– توجه بیش از اندازه و گاه الگوبرداری مستقیم از راه‌حل‌های مشابه خارجی.
- نظیر پروژه‌های توسعه سامانه‌های برنامه ریزی منابع سازمانی

نبود زیر ساخت های کلان

- در دسترس نبودن زیرساخت‌های لازم در سطح کلان و ملی، از دیگر دلایل کم‌اقبالی به فناوری‌های اطلاعاتی و ارتباطی است.
 - برای مثال یکی از مزایای نرم‌افزارهای اطلاعاتی امروزی، یکپارچگی اطلاعات و در اختیار گذاشتن توان تصمیم‌سازی مدیریتی براساس این اطلاعات یکپارچه است.
- یکی از کارخانه‌های این سازمان در منطقه‌ای واقع است که حتی خط تلفن معمولی نیز مشکلات مختلف دارد و طبیعتاً امکان برقراری هیچ نوع ارتباط داده‌ای مقرون به صرفه و قابل اعتماد وجود ندارد.
- شعبه‌ای از این سازمان در شهری واقع است که برای استفاده از امکانات شبکه ملی دیتا، نیازمند کسب مجوزهای بسیار و صرف زمان و هزینه معتنا به است.
- نصب نرم‌افزار بر روی سیستم‌عامل و ارتباط آن با پایگاه‌های داده‌ای که به دلیل غیرمجاز بودن نسخه مورد استفاده، امکان هیچ نوع پشتیبانی فنی ندارند.

فقدان راه حل های تخصصی

- عمومی بودن راه حل های ارایه شده در حوزه IT و نداشتن دقت لازم به بحث های تخصصی هر صنعت
- نبود شناخت کافی از پیچیدگی های صنایع مختلف و مدون سازی تجربیات موفق در حوزه این صنایع در استفاده از فناوری اطلاعات

پیچیدگی

- فناوری اطلاعات، دانش، فناوری و دیدگاهی است که در سطوح و بخش‌های مختلف از زیرساخت‌های ارتباطی گرفته تا ابزارهای تصمیم‌گیری مدیریت معنا می‌شود.
- چند بخشی بودن IT، علاوه بر پیچیدگی ظاهری، مشکلاتی را در کشور ما دامن زده است که سبب ایجاد پیچیدگی‌های واقعی نیز گشته‌اند.
 - سازمان و صنعت مقصد، غالباً بدون آنکه تخصصی در زمینه فناوری اطلاعات داشته باشد و بی‌آنکه نیازی هم به این تخصص داشته باشد، برای رفع مشکلات خود و بهره‌برداری از توانمندی‌های IT، بناچار همزمان در چند حوزه مختلف و با چند پیمانکار متفاوت، درگیر اجرای زیرساخت‌های اطلاعاتی و ارتباطی می‌شود.
- این امر علاوه بر دغدغه‌های مدیریت چند پروژه همزمان، سازمان را در یافتن مسوول واقعی حل مشکلات در هنگام نیاز نیز سر در گم می‌کند.

پیچیدگی (ادامه)

- مرتبط بودن این حوزه‌های مختلف با هم و تاثیرگذاری هر یک بر دیگری و در مجموع بر شانس موفقیت پروژه‌های فناوری اطلاعات سازمان عامل دیگر این پیچیدگی است.
 - لزوم وجود دیدگاه کلان مدیریتی و راهبردی در سازمان در زمینه فناوری اطلاعات نظیر مبنا قرار دادن سند جامع فناوری اطلاعات
 - مشکل کمبود مشاورانی باتجربه که مدیران ارشد سازمان مقصد را در این راستا یاری کنند
- فراگیری و چند حوزه‌ای بودن این زیرساخت، به ناچار کل سازمان را درگیر می‌کند و موفقیت اجرای آن مستلزم همکاری پیوسته بخش‌ها و سطوح مختلف سازمان خواهد بود
 - ایجاد نگرانی در مدیران ارشد به دلیل درگیر شدن همزمان واحدهای سازمانی
 - نیاز به توان مدیریتی فوق‌العاده‌ای برای مدیریت و کنترل تغییرات
- مشکل درگیری مدیران در بحث‌های فروش، تولید و پخش، توسعه واحدهای تولیدی و مشغولیت‌های تخصصی دیگر

متخصصان مورد نیاز فناوری اطلاعات

۱- متخصصان نرم افزار شامل:

- متخصص پایگاه داده

- متخصص سیستم عامل

- برنامه نویس

۲- متخصصان شبکه و سخت افزار

۳- تحلیلگران سیستم

۴- متخصصان علم مدیریت

اهداف درس

هدف از این درس ارائه یک دید کلی نسبت به نحوه مدیریت فناوری اطلاعات و ارتباطات است که مباحث زیر را در بر میگیرد:

- **جنبه های عملی شامل:** یادگیری برخی مسائل تکنیکی و فنی حوزه فناوری اطلاعات و نرم افزارهای مناسب حوزه
- **مفاهیم تئوریک شامل:** زمینه های مرتبط در حوزه استراتژی سازمانی بر محور فناوری اطلاعات، چالشها، برنامه ها، منابع، سازماندهی، امنیت، قراردادها و پروژه ها، نقشه راه و ریسک فناوری اطلاعات می باشد.

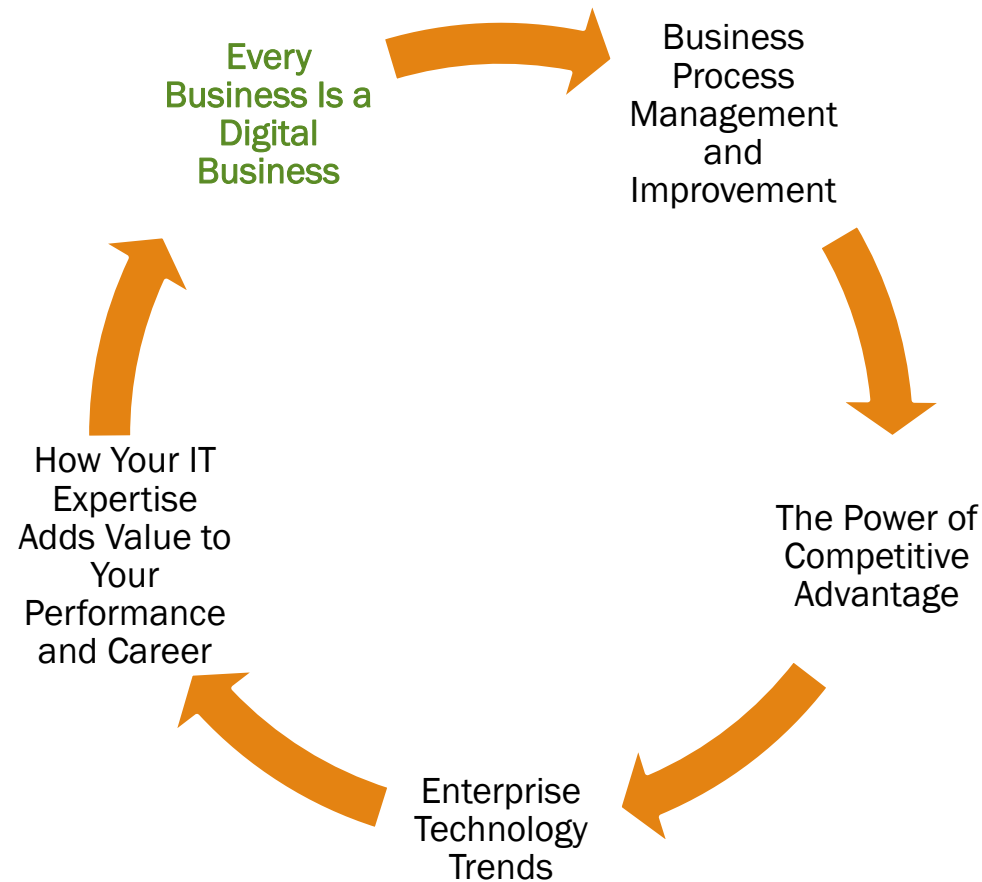
سرفصل مطالب

- Digital Technology Creates New Levers for Growth and Improved Performance
- Data Governance, IT Architecture, and Cloud Strategies
- Data Management, Big Data, and Business Intelligence
- Digital Networks and the Triple Bottom Line
- Cybersecurity, Risk Management, and Financial Crime
- Internet Technologies and Search Strategies
- Social Media Strategies and Metrics
- Retail, Mobile and E-Commerce
- Tactical and Operational Support Systems
- Strategic Enterprise Systems
- Data Visualization and Geographic Systems
- IT Strategy and Balanced Scorecard
- Project Management and SDLC

Resources

- Information Technology for Management: Transforming Organizations in the Digital Economy, by Efraim Turban and Linda Volonino, Wiley, 7th Edition.
- Information Technology for Management: Advancing Sustainable, Profitable Business Growth, by Turban, Volonino, Wood, O.P. Wali, Wiley, 2015.
- Introduction to Information Technology: by Turban, Rainer, Potter, Wiley, 2006.
- From business strategy to Information Technology Roadmap: A Practical Guide for Executives and Board Members. Productivity Press. By: Pham, T., Pham, D. K. and Phan, A. T.
- Managing Information Technology, by Carol V. Brown, Daniel W. DeHayes, Jeffrey Slater, Wainright E. Martin, William C. Perkins, Prentice Hall, 7th Edition, 2011.

Learning Objectives



Every Business Is a Digital Business

- **Digital Business**
 - A **social, mobile**, and **Web**-focused business.
- **Business Model**
 - How a business **makes money**.
- **Digital Business Model**
 - Defined how a business **makes money digitally**.
- **Customer Experience (CX)**
 - About building the digital **infrastructure** that allows **customers** to do whatever they want to do, through **whatever channel** they choose to do it.
- **Cloud Computing**
 - A **style of computing** in which **IT services** are delivered **on-demand** and accessible **via the Internet**.

Every Business Is a Digital Business

- **Why develop digital business models?**
 - Deliver an **incredible customer experience**
 - Turn a **profit**
 - Increase **market share**
 - **Engage their employees**
- **How does the customer experience (CX) measure up?**
 - There is a strong relationship between the **quality** of a firm's CX and **brand loyalty**, which in turn **increases revenue**.

Every Business Is a Digital Business

Twitter dominates the reporting of news and events as they are happening.

Facebook became the most powerful sharing network in the world.

Location-aware technologies track items through production and delivery to reduce wasted time and inefficiency in supply chains and other business-to-business (B2B) transactions.

Smartphones, tablets, other touch devices, and their apps reshaped how organizations interact with customers—and how customers want businesses to interact with them.

Every Business Is a Digital Business

- **Cloud Computing**
 - Resource acquisition is “as needed” and **without upfront investments.**
 - Resources **no** longer dependent on **buying that resource.**
- **Machine-to-Machine (M2M) Technology**
 - Objects that **connect themselves to the Internet** with **sensor-embedded devices** are commonly referred to as the ***Internet of Things* (IoT).**

Every Business Is a Digital Business

- **Big Data**
 - Commonly defined as **high-volume, mostly text data**
 - **Studied by data scientists** in the field of data science
- **Data Science**
 - Managing and **analyzing** massive sets of data for purposes such as **target marketing, trend analysis**, and the creation of individually tailored products and services.

Every Business Is a Digital Business

- **Social-Mobile-Cloud (SoMoClo)**
 - **Huge data centers accessible via the Internet and forms the core by providing 24/7 access to storage, apps, and services.**
 - Handheld and **wearable devices** and their users form the **edge of the cloud.**
 - Social channels connect the **core and edge, creating integration of technical and services infrastructure needed for digital business.**

Every Business Is a Digital Business

- **Social-Mobile-Cloud (SoMoClo) cont.**
 - Makes it possible to **meet the expectations** of employees, customers, and business partners.
 - Provides **customers' interests** and preferences to **create new products** and services and allows **quick response** to changes in usage patterns as they occur.
 - **Mobiles are now an extension of individuals' body and mind.**

Every Business Is a Digital Business

1. What are the benefits of cloud computing?

With cloud computing, IT services are delivered via the Internet on-demand. Some benefits are faster application deployment, no need for upfront hardware costs, a flexible capacity for changing computing requirements, and the ability to add, or reduce, server space on-demand.

2. What is machine-to-machine (M2M) technology? Give an example of a business process that could be automated with M2M.

Machine-to-machine (M2M) technology enables sensor-embedded products to share reliable real-time data via radio signals. M2M is also referred to as the Internet of Things (IoT) and is widely used to automate business processes in industries ranging from transportation to health care. By adding sensors to trucks, turbines, roadways, utility meters, heart monitors, vending machines, and other equipment they sell, companies can track and manage their products remotely.

Every Business Is a Digital Business

3. Describe the relationships in the SoMoClo model.

The SoMoClo model refers to **social, mobile, and cloud** technologies and their relationships, creating the technical infrastructure for digital business. At the **core** is the cloud, providing **24/7** access to storage, apps, and services. Handhelds and wearables, such as **Google Glass, Pebble, and Sony Smartwatch**, and their users form the edge. **Social channels** connect the core and edge.

Every Business Is a Digital Business

4. Explain the cloud.

The cloud consists of huge data centers accessible via the Internet which provides 24/7 access to storage, apps, and services.

5. Why have mobile devices given consumers more power in the marketplace?

The social influences of a connected society impact advertising and marketing. Positive, or negative, influences on social media can impact consumer buying. Being mobile, consumers can check endorsements and prices on the spot when contemplating a purchase. Customer loyalty, and therefore revenue, increasingly is dependent upon a business exploiting mobile technology, such as location-aware services, apps, alerts, and social networks.

Every Business Is a Digital Business

6. What is a business model?

A business model is the means by which a company expects to, and does, make money.

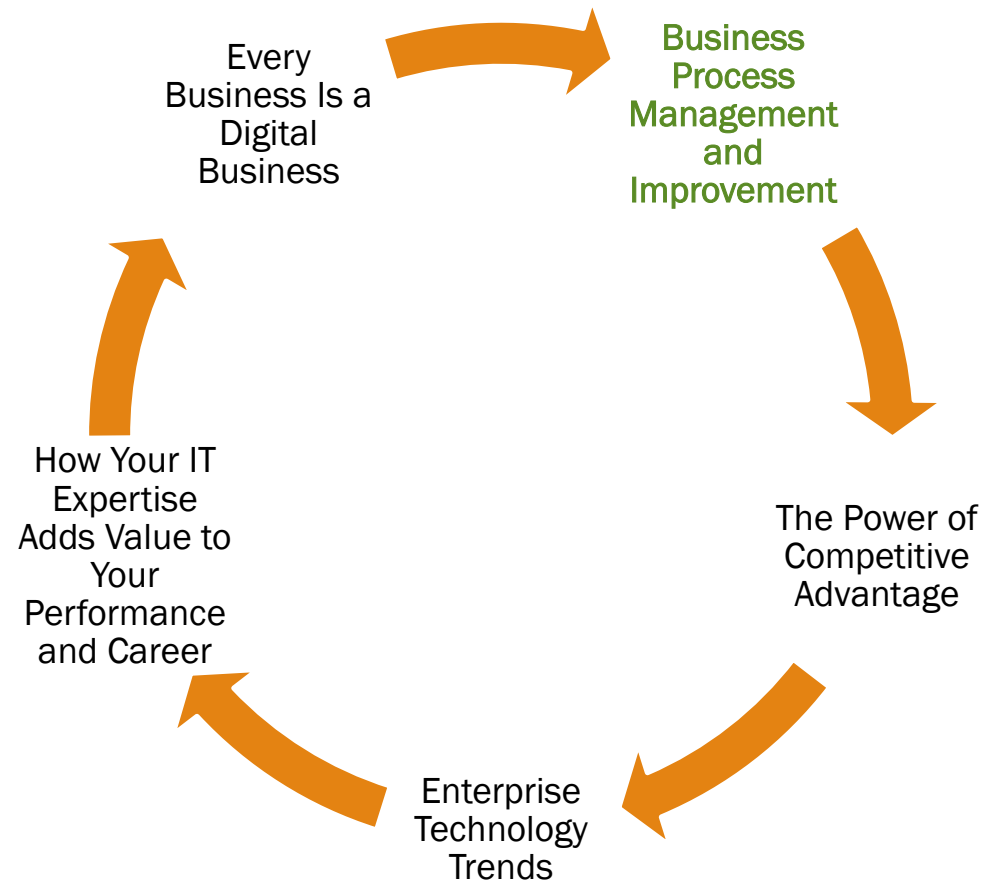
7. What is a digital business model?

A digital business model defines how a business makes money digitally.

8. Explain the Internet of Things.

The Internet of Things refers to a set of capabilities enabled when physical things are connected to the Internet via sensors. Sensors allow for the sharing of real-time data as well as the tracking, monitoring, and management of products remotely.

Learning Objectives



Business Process Management and Improvement

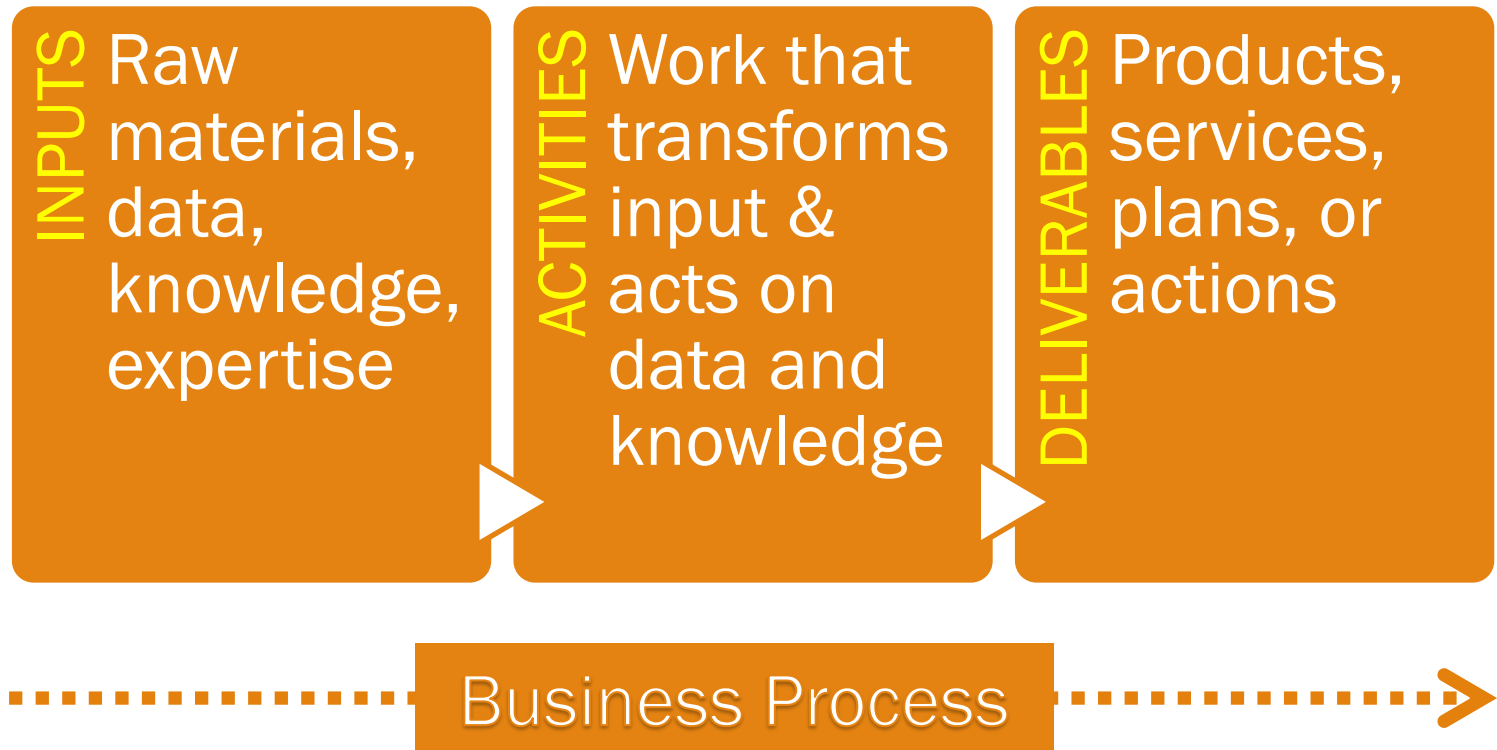
- **Business Process**
 - **Series of steps** by which an organization coordinates and organizes tasks to get work done.
- **Process**
 - **Activities** that convert **inputs into outputs** by doing work.
- **Deliverables**
 - **Outputs** created **through work** toward a desired benefit or **expected performance improvement**.
- **Performance**
 - A **result of processes** where **maximizing efficiency** over one's competitors is a critical success factor.

Business Process Management and Improvement

BUSINESS PROCESS COMPONENTS



Business Process Management and Improvement



Business Process Management and Improvement

- **Business Process Characteristics**
 - **Formal Processes or Standard Operating Procedures (SOP)**: documented and have well-established steps.
 - **Informal Processes**: typically **undocumented, undefined, or are knowledge-intensive.**
 - Range from slow, rigid to fast-moving, adaptive.

Business Process Management and Improvement

- **Process Improvement**
 - Continuous examination to determine whether they are still necessary or operating at peak efficiency by eliminating wasted steps called **Business Process Reengineering** (BPR).
 - Digital technology enhances processes by:
 - **Automating manual procedures**
 - **Expanding data flows** to reach more functions and **parallel sequential activities**
 - Creating innovative business processes to **create new models**

Business Process Management and Improvement

- **Process Management**
 - Consists of methods, tools, and technology to support and continuously improve business processes also known as *Business Process Management* (BPM).
 - BPM **software is used to map processes** performed manually, by computers, or to design new processes.
 - BPM requires buy-in from a broad cross section of the business, the right technology selection, and highly **effective change management to be successful.**

Business Process Management and Improvement

1. **What is a business process? Give three examples.**
 - **Business processes are series of steps by which organizations coordinate and organize tasks to get work done. In the simplest terms, a process consists of activities that convert inputs into outputs by doing work.**
 - **Answers may vary. Some examples of common business processes are:**
 - Accounting: Invoicing; reconciling accounts; auditing
 - Finance: Credit card or loan approval; estimating credit risk and financing terms
 - Human resources (HR): Recruiting and hiring; assessing compliance with regulations; evaluating job performance
 - IT or information systems: Generating and distributing reports and data visualizations; data analytics; data archiving
 - Marketing: Sales; product promotion; design and implementation of sales campaigns; qualifying a lead
 - Production and operations: Shipping; receiving; quality control; inventory management
 - Cross-functional business processes: Involve two or more functions, for example, order fulfillment and product development

Business Process Management and Improvement

2. What is the difference between business deliverables and objectives?

Objectives define the desired benefits or expected performance improvements. They do not and should not describe what you plan to do, how you plan to do it, or what you plan to produce, which is the function of processes. This last item, what you plan to produce, are deliverables.

3. List and give examples of the three components of a business process.

- The three components of a business process are inputs, activities, and deliverables.
- Inputs are those items needed to produce the deliverables. These may be raw materials, data, knowledge, or expertise.
- Activities are the work that transforms inputs and acts upon data and knowledge in order to produce deliverables.
- Deliverables are the products, services, plans, or actions which result from business processes.

Business Process Management and Improvement

4. Explain the differences between formal and informal processes.

- Formal processes are documented and have well-established steps. Order taking and credit approval processes are examples.
- Informal processes are typically undocumented, have inputs that may not yet been identified, and are knowledge-intensive.

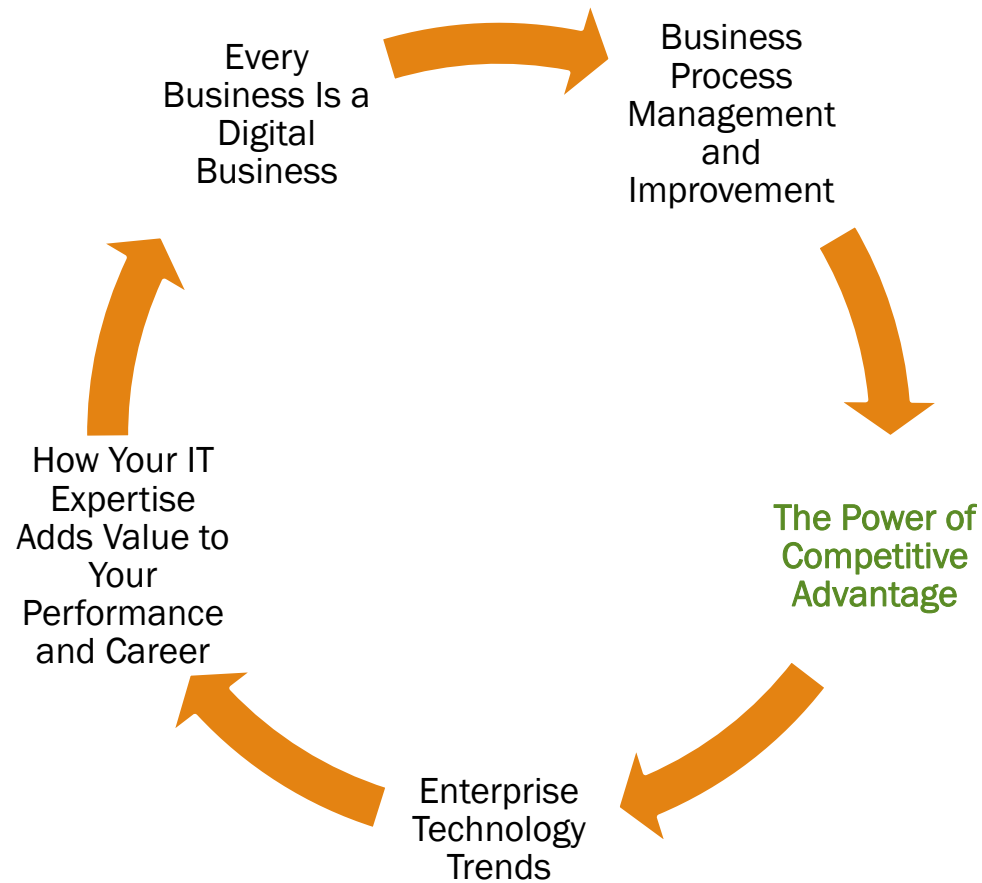
5. What is a standard operating procedure (SOP)?

A standard operating procedure (SOP) is a well-defined and documented way of doing something. An effective SOP documents who will perform the tasks; what materials to use; and where, how, and when the tasks are to be performed.

6. What is the purpose of business process management (BPM)?

Business process management (BPM) consists of methods, tools, and technology to support and continuously improve business processes. The purpose of BPM is to help enterprises become more agile and effective by enabling them to better understand, manage, and adapt their business processes.

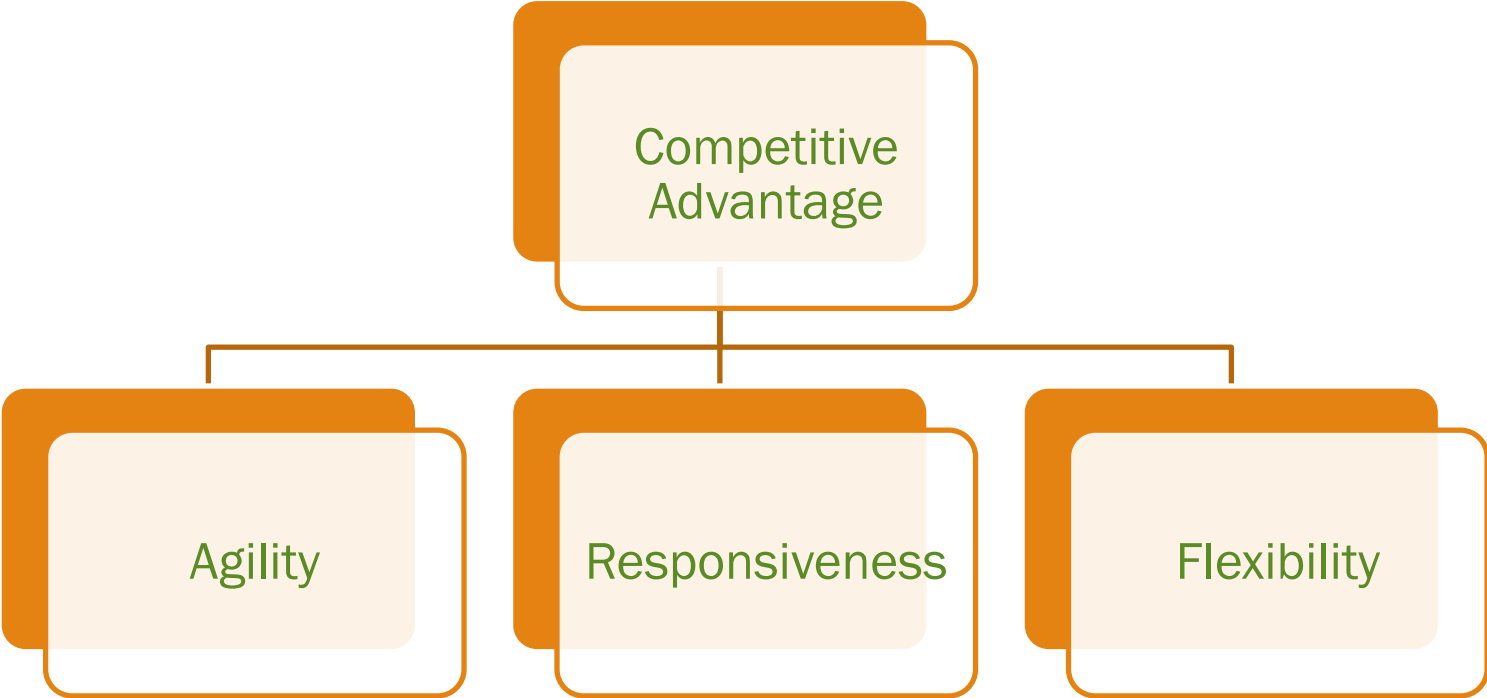
Learning Objectives



The Power of Competitive Advantage

- **IT Consumerization**
 - The migration of consumer technology into enterprise IT environments.
 - Caused by **personally owned IT becoming a capable and cost-effective solution** for expensive enterprise equivalents.

The Power of Competitive Advantage

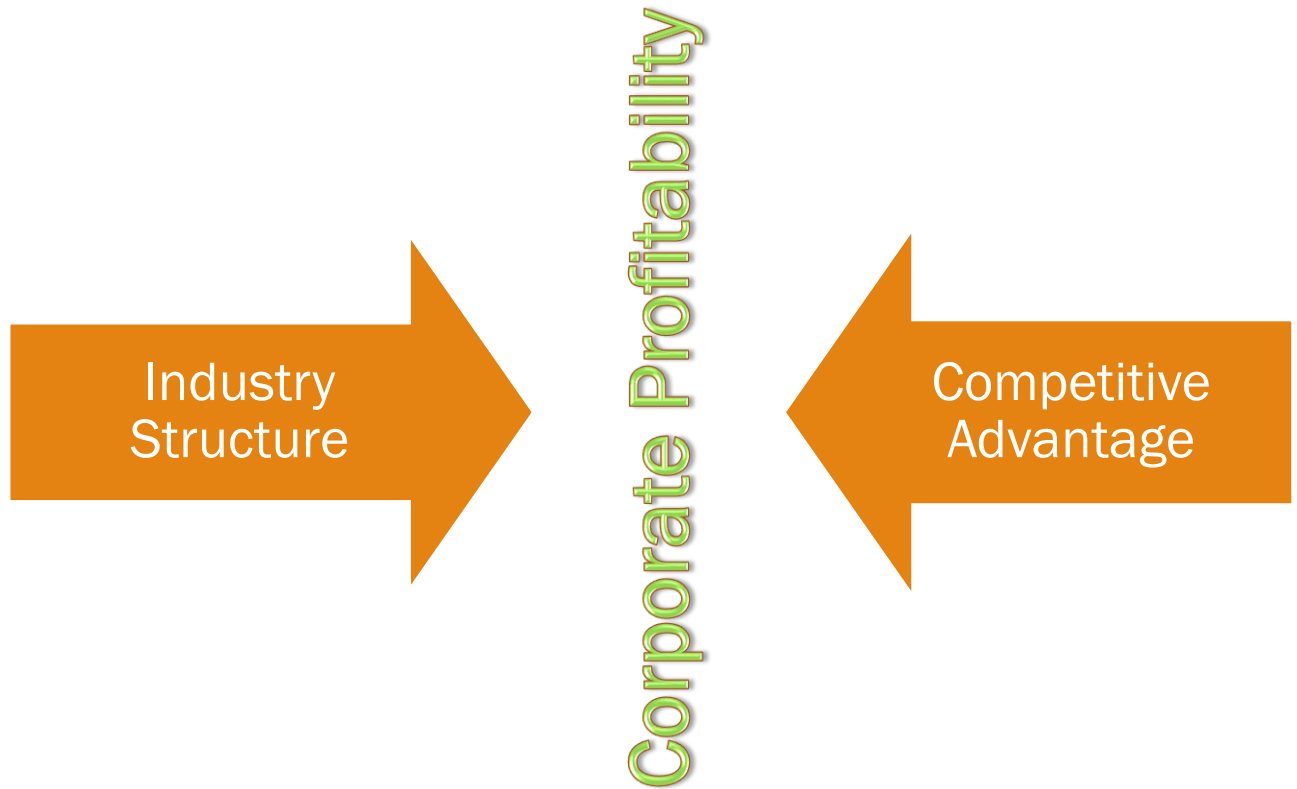


The Power of Competitive Advantage

- **Agility**
 - The ability to respond quickly
- **Responsiveness**
 - IT capacity can be easily scaled up or down as needed
- **Flexibility**
 - The ability to quickly integrate new business functions or to easily reconfigure software or applications.

IT agility, flexibility, and mobility are tightly interrelated and fully dependent on a organization's IT infrastructure and architecture.

The Power of Competitive Advantage



The Power of Competitive Advantage

- **Industry Structure**
 - An industry's structure determines the **range of profitability of the average competitor** and can be very **difficult to change**.
- **Competitive Advantage**
 - An edge that enables a company to **outperform its average competitor**. Competitive advantage can be sustained only by continuously pursuing new ways to compete.
 - **Gartner Group**: the difference *that matters to customers*.

IT competitive advantages are generally short-lived.

The Power of Competitive Advantage

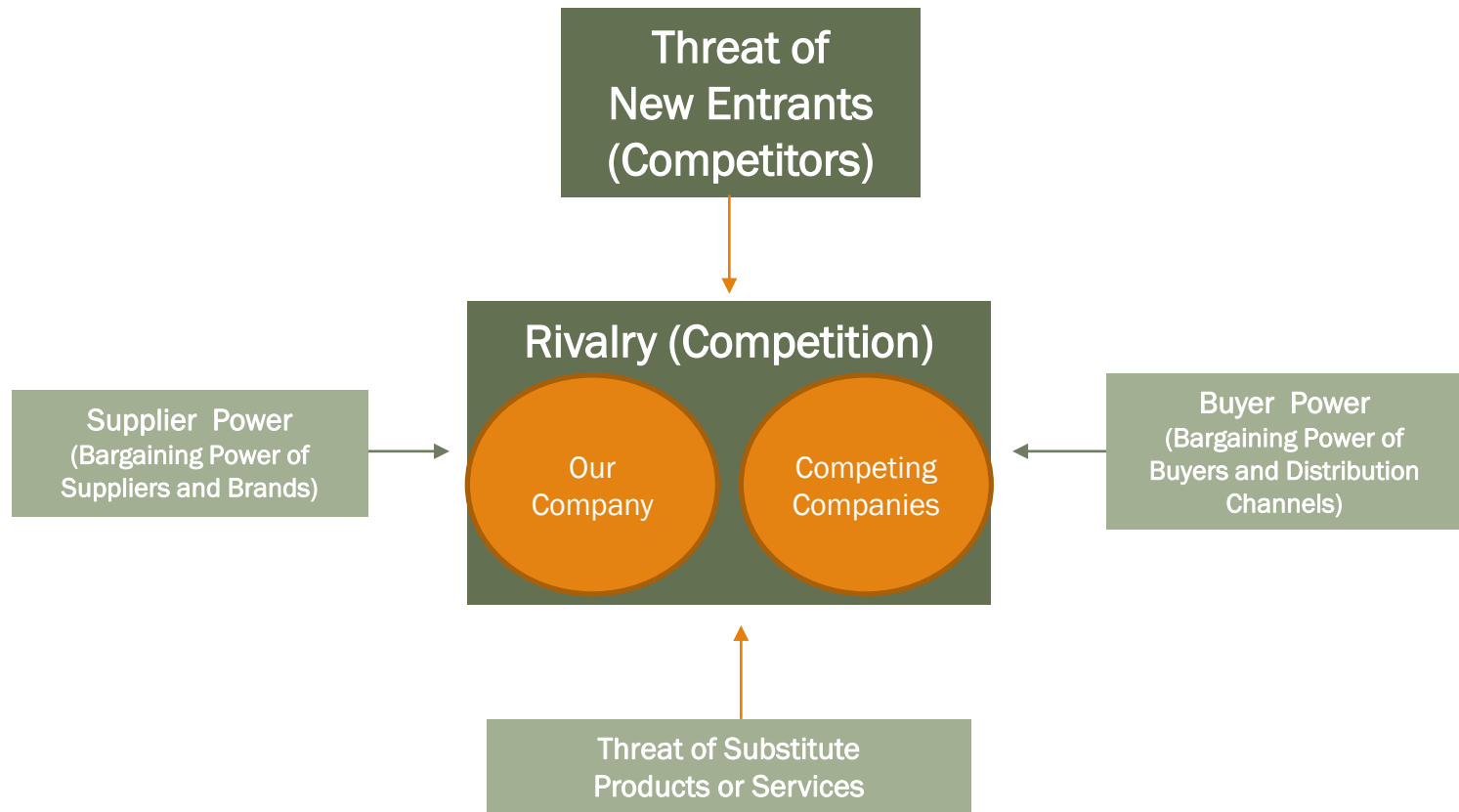
- **SWOT**
 - **Strengths:** **Reliable processes;** agility; motivated workforce
 - **Weaknesses:** **Lack of expertise;** competitors with better IT infrastructure
 - **Opportunities:** A developing market; **ability to create a new market or product**
 - **Threats:** **Price wars** or other fierce reaction by competitors; obsolescence

The Power of Competitive Advantage

- **Strategic Planning**
 - A **series of processes** in which an organization selects and **arranges its businesses or services to keep the organization healthy** or able to function even when unexpected events disrupt one or more of its businesses, markets, products, or services.
- **Strategy**
 - The plan for **how a business will achieve its mission, goals, and objectives** including questions such as:
 - What is the **long-term business** direction?
 - What is the **overall plan for deploying** resources?
 - What **trade-offs are necessary**?
 - How **do we achieve competitive advantage** over rivals in order to achieve or maximize profitability?

The Power of Competitive Advantage

Porter's Competitive Forces Model



The Power of Competitive Advantage

Basis of the Competitive Forces Model

PROFIT = TOTAL REVENUES minus TOTAL COSTS

Profit is increased by increasing total revenue and/or decreasing total costs.
Profit is decreased when total revenues decrease and/or total costs increase.

PROFIT MARGIN = SELLING PRICE minus COST OF THE ITEM

Profit margin measures the amount of profit per unit of sales, and does not take into account all costs of doing business.

The Power of Competitive Advantage

Porter's Competitive Forces Strategies

Strategies for Competitive Advantage			
Cost leadership	Differentiation	Niche	Growth
Alliance	Innovation	Operational effectiveness	Customer orientation
Time	Entry barriers	Customer or supplier lock-in	Increase switching costs

The Power of Competitive Advantage

- **Primary Activities**

- Business activities directly involved in the production of goods involving the purchase of materials, the processing of materials into products, and delivery of products to customers.

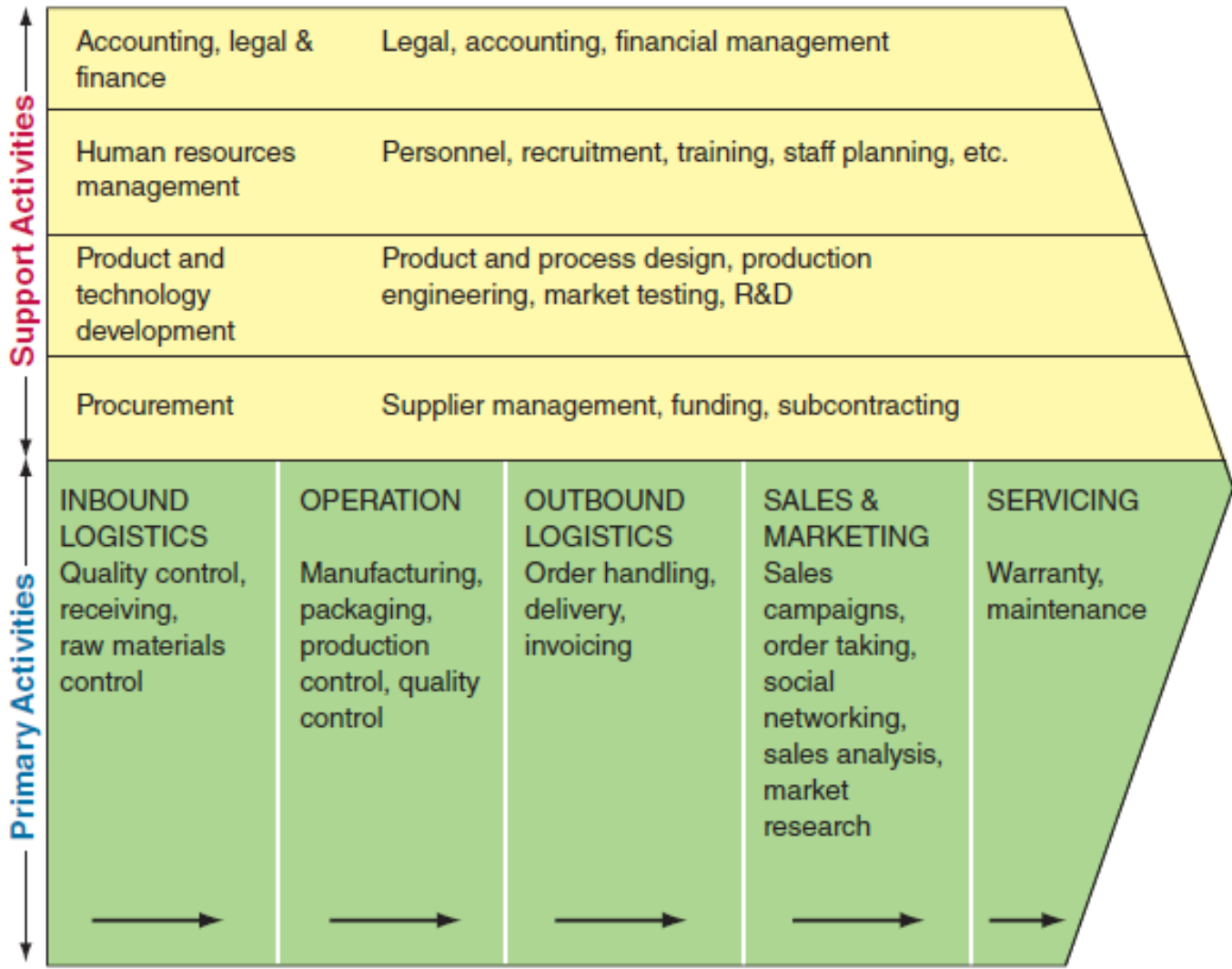
1. Inbound logistics
2. Operations
3. Outbound logistics
4. Marketing and sales
5. Services

The Power of Competitive Advantage

- **Support Activities**

- Applied to any or all of the primary activities which may also support each other.
 1. Infrastructure, accounting, finance, and management
 2. Human resource management (HR)
 3. Technology development, and research and development (R&D)
 4. Procurement or purchasing

The Power of Competitive Advantage



Business Process Management and Improvement

1. What are the characteristics of an agile organization?

- An agile organization has the ability to respond or adapt quickly.
- Organizations depend on IT agility and responsiveness to be able to adapt to market conditions and gain a competitive edge. That competitive advantage is short-lived if competitors quickly duplicate it.
- Responsiveness means that IT capacity can be easily scaled up or down as needed, which essentially requires cloud computing. Closely related to IT agility is flexibility. Flexibility means having the ability to quickly integrate new business functions or to easily reconfigure software or apps.

2. Explain IT consumerization.

IT consumerization is the migration of consumer technology into enterprise IT environments. This shift has occurred because personally owned IT is as capable and cost-effective as its enterprise equivalents.

3. What are two key components of corporate profitability?

The two key components of corporate profitability are industry structure and competitive advantage. Industry structure determines the range of profitability of an average competitor in that sector and can be very difficult to change.

Business Process Management and Improvement

4. Define competitive advantage.

Competitive advantage is the edge that enables a company to outperform its average competitor. Competitive advantage can be sustained only by continually pursuing new ways to compete. IT can be an enabler of competitive advantage. Competitive advantage is the difference between a company and its competitors on matters pertinent to customers—such as quality of service/product, and value for money.

5. Describe strategic planning.

Strategic planning is a series of processes in which an organization selects and arranges its businesses or services to keep the organization healthy or able to function even when unexpected events disrupt one or more of its businesses, markets, products, or services. Strategic planning involves environmental scanning and prediction, or SWOT analysis, for each business relative to competitors in that business' market or product line.

Business Process Management and Improvement

6. Describe SWOT analysis.

- In general, strategic analysis is the scanning and review of the political, social, economic and technical environment of the organization. Then the company would need to investigate competitors and their potential reactions to a new entrant into their market. Equally important, the company would need to assess its ability to compete profitably in the market and impacts of the expansion on other parts of the company.
- The purpose of this analysis of the environment, competition, and capacity is to learn about the strengths, weaknesses, opportunities, and threats (SWOT) of the expansion plan being considered. SWOT analysis, as it is called, involves the evaluation of strengths and weaknesses, which are internal factors; and opportunities and threats, which are external factors. Examples are:
 - Strengths: Reliable processes; agility; motivated workforce
 - Weaknesses: Lack of expertise; competitors with better IT infrastructure
 - Opportunities: A developing market; ability to create a new market or product
 - Threats: Price wars or other fierce reaction by competitors; obsolescence
 -
- SWOT is only a guide and should be used together with other tools such as Porters' Five Forces Analysis Model. Porters' models are described in the next section. The value of SWOT analysis depends on how the analysis is performed. Here are several rules to follow:
 - Be realistic about the strengths and weaknesses of your organization
 - Be realistic about the size of the opportunities and threats
 - Be specific and keep the analysis simple, or as simple as possible
 - Evaluate your company's strengths and weaknesses in relation to those of competitors (better than or worse than competitors)
 - Expect conflicting views because SWOT is subjective, forward-looking, and based on assumptions
 - SWOT analysis is often done at the outset of the strategic planning process.

Business Process Management and Improvement

7. Explain Porter's five-forces model, and give an example of each force.
 - According to Porter's competitive forces model, there are five major forces that influence a company's position within a given industry and the strategy that management chooses to pursue. Other forces, including new regulations, affect all companies in the industry, and have a rather uniform impact on each company in an industry. According to Porter, an industry's profit potential is largely determined by the intensity of competitive forces within the industry. The five major forces in an industry affect the degree of competition, which impact profit margins and ultimately profitability. These forces interact so while you read about them individually, their interaction determines the industry's profit potential. For example, while profit margins for pizzerias may be small, the ease of entering that industry draws new entrants into that industry. Conversely, profit margins for delivery services may be large, but the cost of the IT to support the service is a huge barrier to entry into the market.
 - Here is an explanation of the five industry (market) forces.

Business Process Management and Improvement

1. Threat of entry of new competitors. Industries that have large profit margins attract others (called entrants) into the market to a greater degree than small margins. It's the same principle as jobs—people are attracted to higher paying jobs, provided that they can meet or acquire the criteria for that job. In order to gain market share, entrants typically sell at lower prices or offer some incentive. Those companies already in the industry may be forced to defend their market share by lowering prices, which reduces their profit margin. Thus, this threat puts downward pressure on profit margins by driving prices down.

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- This force also refers to the strength of the barriers to entry into an industry, which is how easy it is to enter an industry. The threat of entry is lower (less powerful) when existing companies have ITs that are difficult to duplicate or very expensive. Those ITs create barriers to entry that reduce the threat of entry. An example of an industry difficult to enter might be that of a new car sales dealership, as these are controlled by the manufacturer.

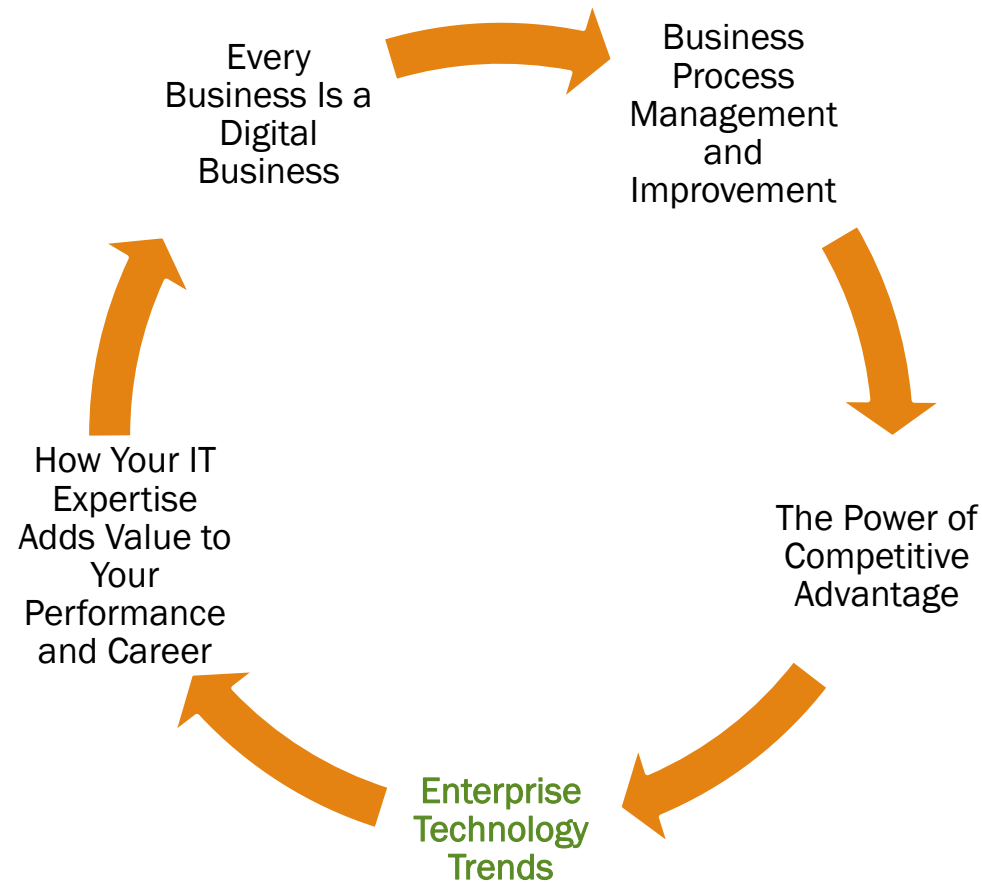
2. Bargaining power of suppliers. Bargaining power is high where the supplier or brand is powerful; e.g., Apple, Microsoft, and auto manufacturers. Power is determined by how much a company purchases from a supplier. The more powerful company has the leverage to demand better prices or terms, which increase its profit margin. Conversely, suppliers with very little bargaining power tend to have small profit margins.

3. Bargaining power of customers or buyers. This force is the reverse of the bargaining power of suppliers. Examples are Wal-Mart and government agencies. This force is high where there are a few, large customers or buyers in a market.

4. Threat of substitute products or services. Where there is product-for-product substitution, such as Kindle for Nook, there is downward pressure on prices. As the threat of substitutes increases, profit margin decreases because sellers need to keep prices competitively low.

5. Competitive rivalry among existing firms in the industry. Fierce competition involves expensive advertising and promotions; intense investments in research and development (R&D), or other efforts that cut into profit margins. This force is most likely to be high when entry barriers are low; the threat of substitute products is high, and suppliers and buyers in the market attempt to control. That's why this force is placed in the center of the model.

Learning Objectives



Enterprise Technology Trends

- **Shifting focus**
 - More mobile business apps, fewer docs on desktops
 - More socially engaged – but subject to regulation
 - More near-field communication (NFC) and radio frequency identification (RFID) technologies

Enterprise Technology Trends

- **Shifting security issues**
 - Move to *mobile* raises data security **issues**
 - A more transient workforce means **higher risk for data** (due to loss or theft)
 - **Customer ignorance toward restrictions or regulations** (particularly finance and healthcare)

Enterprise Technology Trends

1. What was the significance of Apple's introduction of the iPhones music store?

The iTunes store was the first representation of Apple's future outside of its traditional computing product line and a breakthrough that forever changed the music industry.

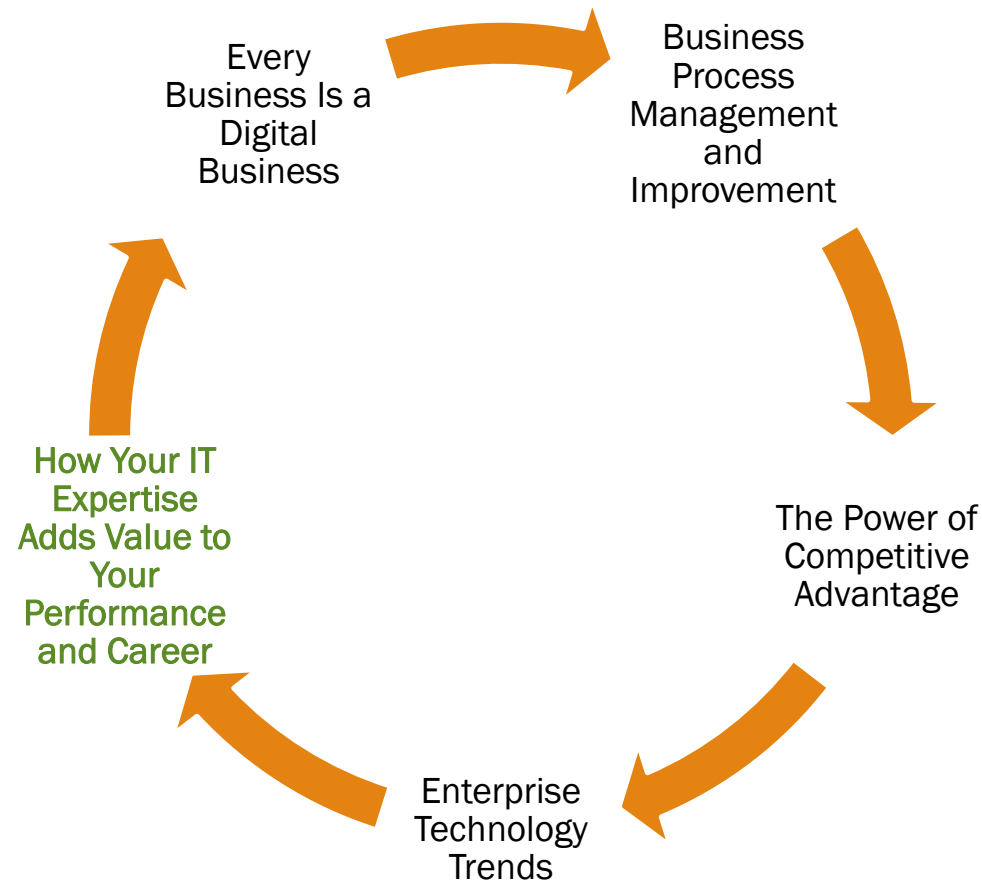
2. What are three IT trends?

The three trends are 1) direction away from the traditional desktop and documents era and toward mobile business apps in the cloud; 2) to be more socially engaged, within restrictions of regulation; and 3) more near-field communication technology.

3. What are three business applications of NFC?

Answers may vary. Some examples are: payment / validation of products, such as airline boarding passes with a touch of an NFC smartphone; tracking products in their supply chain; validating authenticity of high-end goods before purchase; accessing of marketing offers on goods to be purchased; the tracking of livestock; and, the tracking and payment of tolls on toll roads without requiring human interaction.

Learning Objectives

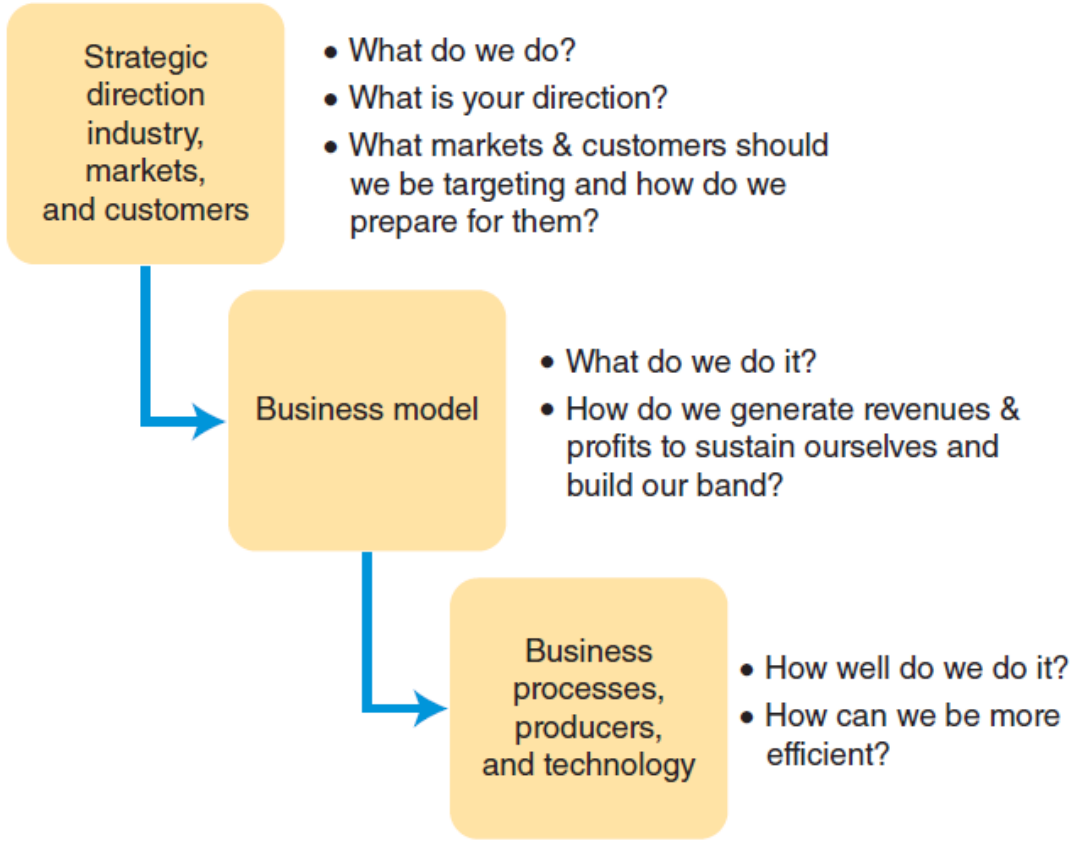


How Your IT Expertise Adds Value to Your Performance and Career

- **Emerging Technology Roles:**
 - Chief Technology Officer
 - Chief Information Officer
 - IT Project Management
 - Data-related roles (streaming, management, analytics, development, analysis, and more)
- **Expanded Traditional Roles:**
 - Knowledge workers
 - Entrepreneurs
 - Managers
 - Business leaders

How Your IT Expertise Adds Value to Your Performance and Career

Key Strategic and Tactical Questions



How Your IT Expertise Adds Value to Your Performance and Career

1. Why is IT a major enabler of business performance and success?

Digital technology creates markets, businesses, products, and careers. Exciting IT developments are changing how organizations and individuals do things. New technologies, such as 4G or 5G networks, embedded sensors, on-demand workforces, and e-readers point to ground-breaking changes. CNN.com has created a new market whose impacts are yet to be realized. Visit report at ireport.com/, where a pop-up reads “report is the way people like you report the news. The stories in this section are not edited, fact-checked or screened before they post.”

How Your IT Expertise Adds Value to Your Performance and Career

2. Explain why it is beneficial to study IT today.

- According to the U.S. Department of Labor, and the University of California Los Angeles (UCLA), the best national jobs in terms of growth, advancement, and salary increases in 2013 are in the fields of IT, engineering, health care, finance, construction, and management. It is projected that these job categories will see above-average national growth over the next several years. The U.S. Department of Labor projections are generally 6–10 years in reference. With big data, data science, and M2M, companies are increasing their IT staff. In addition, many new businesses are seeking more programmers and designers. Data security threats continue to get worse. The field of IT covers a wide range that includes processing of streaming data, data management, big data analytics, app development, system analysis, information security, and more.
- Job growth is estimated at 53 percent by 2018, according to the U.S. Department of Labor; and salaries in many IT jobs will increase by 4 to 6 percent. The lack of skilled IT workers in the U.S. is a primary reason for the outsourcing of IT jobs

3. Why are IT job prospects strong?

Answers may vary. IT managers play a vital role in the implementation and administration of digital technology. Workers with specialized technical knowledge and strong communications and business skills, as well as those with an MBA with a concentration in an IT area, will have the best prospects. Job openings will be the result of employment growth and the need to replace workers who transfer to other occupations or leave the labor force (Bureau of Labor Statistics, 2012–2013).

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