

LOG206: E-Business

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Notes

Module 1: Introduction

The digital revolution

The history of mankind is marked by occurrence of revolutions, that is, occurrence of abrupt and radical changes characterized by emergence of new technologies and novel ways of perceiving the world. Inevitably, such changes have always had profound impact on economic systems and social structures. The first Industrial Revolution was marked by the transition to new manufacturing processes in the period from about 1760 to sometime between 1820 and 1840. The second Industrial Revolution started in the late 19th century and into the early 20th century. It was marked by the advancements in manufacturing and production technology which enabled mass production, fostered by the advent of electricity and the assembly line. The two Industrial Revolutions marked a major turning point in history. Almost every aspect of daily life was influenced in some way, in particular, average income and population began to exhibit unprecedented sustained growth.

Between the late 1950's and 1970's, the world witnessed yet another revolution– the digital revolution (also called the Third Industrial Revolution). It was marked by the change from analog, mechanical, and electronic technology to digital technology. This was catalyzed by the development of semiconductors, mainframe computing, personal computing (1970s and 1980s), and the internet (1990s). The Digital Revolution paved way for the Information Age

The Digital Revolution the transition from analog, electronic, and mechanical technologies to the digital technology available today.

(also known as the Computer Age, Digital Age, or New Media Age). This is the period in human history is marked by the shift from traditional industry that the industrial revolution brought through industrialization, to an economy based on

information computerization. With the widespread diffusion of computers, the Internet, the World Wide Web, more and more of what a modern enterprise does each day involves the movement of electronic bits of information. Bits of customer information, bits of employee information, bits of product information, and indeed, when the product is information (music, video, still imagery, news, literature, etc.), bits of the product itself. The society has become knowledge-based being surrounded by a high-tech global economy that enables the manufacturing throughput and the service sector operate in an efficient and convenient way.

Entire industries have been transformed by the new digital reality. Whether it is in the field of music, photography, publishing, journalism, banking, finance, manufacturing, health care, education, entertainment—no segment of industry or government is untouched. Digital technologies continue to revolutionize the way we do everything. Entire industries have been

transformed by the new digital reality. The modern enterprise is becoming ever more "digital" in terms of what it is and what it does. One of the most salient aspects of the digital revolution is e-commerce. New economy brands like eBay, Alibaba, Facebook, Google and Amazon have become household names. Increasingly, global consumers are making their purchases online.

Given the increasing sophistication and integration of the digital technologies, it appears that

Industry 4.0 is the integration of real production with the virtual world – a world in which information technology is fully incorporated into production processes.

we are now at the beginning a fourth industrial revolution. This is characterized by much more ubiquitous and mobile internet, by smaller and more powerful sensors that have become cheaper, by artificial intelligence and machine learning. In this revolution, also labeled as the second machine

age, the effect of digital technologies is manifest at a full scale through automation and the making of unprecedented things. Around the world, traditional manufacturing industry is in the throes of a digital transformation that is accelerated by exponentially growing technologies (e.g. intelligent robots, autonomous drones, sensors, 3D printing). The trends witnessed now are not to be compared simply with greater level of production automation, a process that has, since the 1970s, been driven by developments in electronics and information technology. The current trends are characterized by disruptive approaches to development, production and the entire logistics chain. This marks the fourth era of industry, the so-called Industry 4.0, which introduces what has been called the “smart factory” in which cyber-physical systems monitor the physical processes of the factory and make decentralized decisions.

Summary

First came steam and the first machines that mechanized some of the work our ancestors did (1st Industrial revolution). Next was electricity, the assembly line and the birth of mass production (2nd Industrial revolution). The third era of industry came about with the advent of computers and the beginnings of automation, when robots and machines began to replace human workers on those assembly lines (3rd Industrial revolution). We have now entered Industry 4.0, in which computers and automation will come together in an entirely new way, with robotics connected remotely to computer systems equipped with machine learning algorithms that can learn and control the robotics with very little input from human operators (4th Industrial revolution).

Disruptive digital technologies

At the core of the digital revolution is the digital disruption, which is an effect that changes the fundamental expectations and behaviors in a culture, market, industry, technology or process that is caused by, or expressed through digital capabilities, channels or assets. Digital

A disruptive technology is one that shakes up an existing industry or creates a completely new industry by displacing an established technology

technologies are regarded as disruptive technologies because they significantly change the way businesses operate. While businesses often plan to make gradual improvements in order to improve efficiency, disruptive technologies can appear so suddenly that they

may not be able to fully plan for the change. As such, businesses that fail to keep pace may lose market share or may become irrelevant altogether. By enabling transformed business processes and new products, disruptive technologies change the bases of competition by changing the performance metrics along which firms compete.

A digital disruptors is any entity that effects the shift of fundamental expectations and behaviors in a culture, market, industry, technology or process that is caused by, or expressed through digital capabilities, channels or assets.

Digital disruption is altering traditional competitive dynamics in virtually every industry. Examples of companies that have significantly disrupted traditional industries include Airbnb, Lyft, Udacity, Uber, Amazon, to mention just a few. Since **digital business** is often a common component of many of the disruptions that occur across industries, the

companies behind them are regarded as digital disruptors. Note that not every new entrant in an industry is a disruptor, a fundamental shift is what defines a disruption.

Digital business

Digital technologies have altered society and continue impacting virtually all business functions and industries. It's partially what digital business is about. As digital technologies offer new

Digital business refers to the application digital technologies and media to improve the competitiveness of their organization through optimizing internal processes with online and traditional channels to market and supply

ways to connect, collaborate, conduct business and build bridges between people, it touches the core of all business functions and even the ways organizations are managed. As mobile, social, cloud, and big data come together, there is an emergence

of digital business strategy, that is, the ability to leverage digital technologies to transform the customer value equation and drive competitive advantage. Digital business promises to deliver in an unprecedented convergence of people, business, and things that disrupts existing business models. In other words, digital business is the creation of new business designs by blurring the digital and physical worlds.

Three key areas of enterprises that can benefit from digital technologies

The main areas where these technologies can have a positive impact on your business are customer experience, operational processes and business models.

Customer Experience

Technology is increasingly empowering customers. At the same time, digital technologies allow enterprises to meet customer demands in new ways. They enable businesses to create better experiences for customers in a number of ways, by helping you to:

- Understand geographies and market segments

- Innovate products that meet changing customer demands
- Digitally-enhanced selling
- Build communities and loyalty
- Offer new products on a timely basis
- Understand behavior and preferences of customers through analytics
- Deliver a unified customer experience across multiple platforms.
- Facilitate self service
- Provide fast and transparent problem resolution (e.g. handling customer complaints)

Operational Processes

Through digital technologies firms are also realizing very strong benefits from transforming internal processes. Digital technology will radically transform the way your business operates. You can automate tasks, empower your employees to work independently and integrate far more effectively with partners and suppliers. You'll also benefit from:

- Agile product development cycles
- Maximum economies of scale
- Modular manufacture to reduce wastage
- Improved performance. Resulting from data-driven decision making, faster times to market and reduced drag caused by legacy systems.
- Happier, more productive employees. Digital technology enables people to work remotely, collaborate and share knowledge more easily and understand customers better.

Business Models

Digitalization transforms business models in three ways.

- Digitally modified businesses. These are businesses that have been 'remastered' with digital elements that improve areas such as customer experience and operational processes.
- New Digital businesses. This involves introducing entirely new digital business models, such as Uber, AirBnB and Facebook.
- Globalised businesses. This involves making an enterprise "digitally global", thanks to digital technology that enables services and knowledge to be cross-culturally shared. Global digital presence allows a domestic enterprise to remain competitive in a shrinking world.

Benefits of digital business

Tangible benefits

- Increased sales from new sales leads giving rise to increased revenue
- Marketing cost reductions

- Supply chain cost reductions
- Administrative cost reductions from more efficient routine processes

Intangible benefits

- Enhancement of the brand image
- More rapid and responsive marketing communications, including PR
- Faster product development lifecycle
- Improved customer service
- Meeting customer expectations of digital services
- Feedback from customers on products
- Better management of marketing information and customer info

E-commerce

One of the most prominent application of digital technologies is e-commerce. New economy brands like eBay and Amazon that engage in e-commerce have become household names and rival the sales of even some of the largest retail businesses. Ecommerce (e-commerce) or electronic commerce is the purchasing, selling, and exchanging of goods and services over computer networks (such as the Internet) through which transactions or terms of sale are performed electronically. For the most part today it entails the use of the Internet and the World Wide Web to mediate transactions between an organisation and any third parties. Contrary to popular belief, ecommerce is not just on the Web. In fact, ecommerce was alive and well in business to business transactions before the Web back in the 70s via EDI (Electronic Data Interchange) through VANs (Value-Added Networks). E-commerce is not restricted to online buying and selling of products, it also includes pre-sale and post-sale activities across the supply chain. Thus, non-financial transactions such as customer support and requests for further information are also considered as part of e-commerce.

Dimensions of e-commerce

EC takes several forms depending on the degree of digitization (the transformation from physical to digital) of the following elements:

- (1) the product (service) sold
- (2) the process
- (3) the delivery agent (or intermediary)

Each of the above elements can be physical or digital which in turn determines levels of EC as follows:

- (1) Brick-and-mortar organizations. These are old-economy organizations (corporations) that perform most of their business off-line, selling physical products by means of physical agents

- (2) Virtual (pure-play) organizations. These organizations that conduct their business activities solely online
- (3) Click-and-mortar (click-and-brick) organizations. These organizations conduct some e-commerce activities, but do their primary business in the physical world.

Types of e-commerce

There are several different types of e-commerce and many different ways to characterize them. A common way to classify EC is by considering the nature of the transactions or the relationship among the participants. Based on transaction alternatives e-commerce can be classified as:

Business-to-consumer (B2C)

E-commerce model in which businesses sell to individual shoppers. It applies to any business organization that sells its products or services to consumers over the Internet. Examples: Amazon.com, elkjop.no, zalando.no etc. With smartphone apps and traffic continuing to see year-over-year growth, B2C companies have been shifting attention to mobile users and capitalizing on the popular technology. Throughout the early 2010s, B2C companies were rushing to get out mobile apps, just as they were with websites decades earlier.

Business-to-business (B2B).

This model describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. Company websites allow interested parties to learn about a business's products and services and initiate contact. Online product and supply exchange websites allow businesses to search for products and services and initiate procurement through e-procurement interfaces. Specialized online directories providing information about particular industries, companies and the products and services they also facilitate business to business transactions.

Consumer-to-business (C2B).

E-commerce model in which individuals use the Internet to sell products or services to organizations or individuals seek sellers to bid on products or services they need. It is similar to the B2C model, however, the difference is that in this case the consumer is the seller and the business organization is the buyer. In the C2B model, businesses profit from the willingness of consumers to name their own price or contribute data or marketing to the company, while consumers profit from flexibility, direct payment, or free or reduced-price products and services. Example: a website owner is paid to review the product or service through blog posts, videos or podcasts another example is when a consumer gives a useful idea for new product development.

Consumer-to-consumer (C2C)

E-commerce model in which consumers sell directly to other consumers. C2C transactions generally involve products sold through a classified or auction system, and the products sold are often used or secondhand. The C2C market is projected to grow in the future because of its cost-effectiveness. The cost of using third parties is declining and the amount of products for sale by consumers is steadily rising.

Government-to-Consumer (G2C) model

In this model, the government transacts with an individual consumer. Example: provision of local government services over the internet

Consumer-to-Government (C2G) model

In this model, an individual consumer interacts with the government. Example: a consumer can pay his income tax or house tax online.

Government-to-Business (G2B) model

This model involves transactions between a government and business organizations. For example the government plans to build a fly over. For this, the government requests for tenders from various contractors. Government can do this over the Internet.

Business-to-Government (B2G) model

In this model, private sector firms conduct transact with the governments or government agencies over the Internet. B2G networks or models provide a way for businesses to bid on government projects or products that governments might purchase or need for their organizations.

Government to government (G2G)

Under this model transactions are performed between government agencies, departments or organizations. Facilitate increased efficiency and communication between parts of a government. G2G initiatives can improve transaction speed and consistency, and at the same time reduce the time employees have to spend on tasks.

Other types (subsets) of E-commerce

E-commerce can also be classified based on the platform used to mediate the transactions. This depends on the importance of a particular platform in facilitating e-commerce. Platforms that have become increasingly important in ecommerce include mobile devices and social networks.

Mobile commerce

The use of mobile devices such as smartphones and tablets to enable online transactions. It involves the use of cellular and wireless networks to connect mobile devices to the internet. Once connected consumers can conduct transactions such as banking, stock trades etc. Different from desktop computers mobile devices, follow you wherever you go.

Social E-commerce

Refers to the e-commerce that is enabled by social networks and online social relationships.

The growth of social commerce is driven by a number of factors including:

- Popularity of social sign-on
- Network notification
- Online collaborative shopping tools

If you have an e-commerce store, social media should be a big part of your business strategy in promoting your brand and your products. Companies that have perfected social selling can get their products in front of millions of people.

Buy-side vs. Sell-side E-commerce

Buy-side e-commerce are e-commerce transactions between a purchasing organisation and its suppliers. Sell-side e-commerce are e-commerce transactions between an organisation and its customers.

Different types of sites for sell-side e-commerce

Transactional e-commerce sites

These sites enable purchase of products online. They also provide information for consumers who prefer to purchase products offline. They include retail sites, travel sites and online banking services. Examples: amazon.com, elkjop.no etc

Services-oriented relationship-building website

These provide information to stimulate purchase and build relationship, particularly where products are not suitable for sale online. The main contribution is through encouraging offline sales and generating enquiries or leads from potential customers. Example: Audi.com

Brand-building sites

Provide an online experience to support the brand. Products are not typically available for online purchase. Their main focus is to support the brand by developing an online experience of the brand. Example: nike.com

Media sites

Provide information, news or entertainment about a range of topics. This information is available both on the site and through links to other sites. Media sites can have diverse sources of revenue including advertising, commission-based sales and sale of customer data. Example: tv2.no, cnn.com, blogs

Social network sites (SNS)

A site that facilitate peer-to-peer communication within a group or between individuals through providing facilities for user-generated content (UGC) and to exchange messages and comments between different users. Example: Facebook, LinkedIn, Twitter

Exam questions

- a. Briefly explain what is meant by each of the following:
 - b. Disruptive technologies
 - d. E-commerce
 - e. Mobile commerce
 - h. Digital business
 - i. Buy-side e-commerce
 - j. Sell-side e-commerce
2. Focusing on the functions, describe different types of sell-side e-commerce sites
3. Imagine that you are about to start a company that will offer e-commerce services. What are the typical benefits that online services provide to customers/consumers?
4. Considering the nature of the relationship among the participants, distinguish different types of e-commerce. Give example for each type of e-commerce identified?
5. Imagine that you have been hired as a business development manager for a “brick-and-mortar” retail store here in Molde. Which arguments would you use to persuade your employer approve your proposal for going digital?

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