The Digital Revolution and the Global E-Marketplace

Chapter 15

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Introduction

- This chapter looks at:
    - Innovations that led to the digital revolution
    - Convergence and the disruptive nature of Internet technology
    - E-commerce and web site categories
    - New products and services

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The Digital Revolution:
A Brief History

- 1937 to 1942: World's first electronic digital computer was developed at Iowa State University

- 1947: The transistor was invented

- 1950's: Invention of the silicon chip

- 1970's: The decade for companies like Atari, Commodore, and Apple

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The Digital Revolution:
A Brief History

- 1981: IBM introduced its first Personal Computer (PC)

- 1982: The 286 microprocessor was unveiled

- 1984: Apple introduced the Macintosh

- 1993: The creation of the Pentium processor

The Digital Revolution: Additional Milestones

- 1969: The Internet can trace its origins (Defense Advanced Research Projects Agency)

- 1972: E-mail was sent for the first time

- 1973: The creation of a cross-network protocol; the true birth of a network of networks or the Internet

- 1993: Tim Berners-Lee invented URL, HTML, and http Also the first commercial browser was created

- Web users 1993: 600,000; 2010: 1.5 billion

- Search engine market share: Google 64%, Yahoo! 20%   Bing, new in 2009

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Industry Convergence

1990
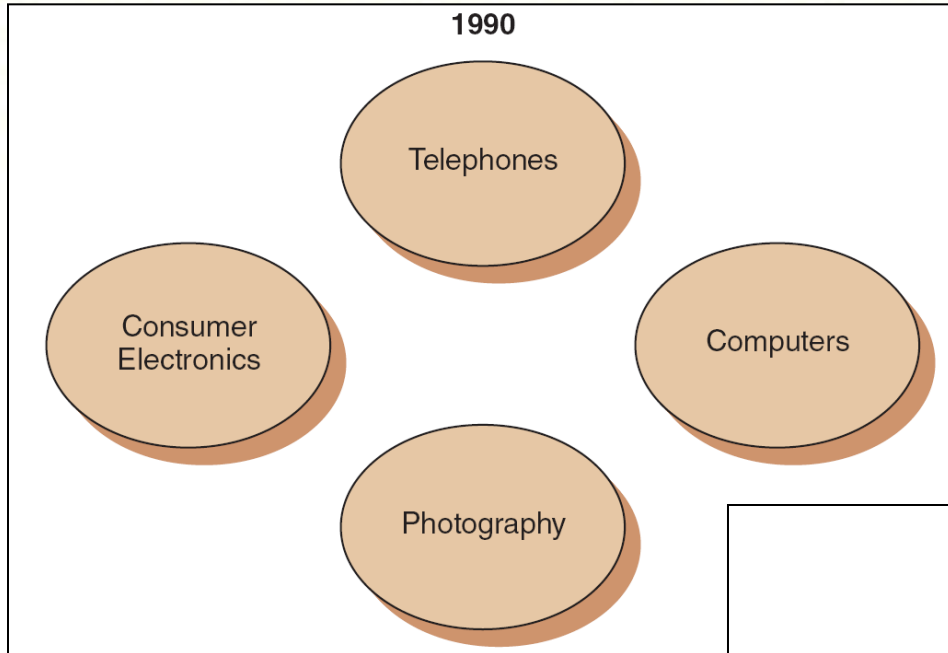
The coming together of previously separate industries and product categories

2010
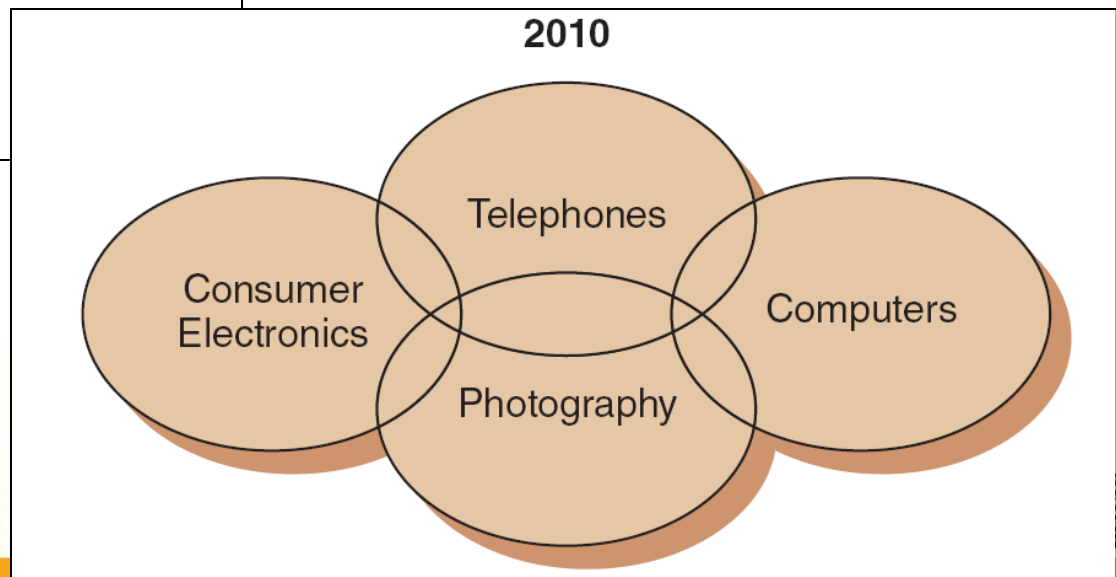
Value Networks and Disruptive Technologies

Binary Code

- Innovator's Dilemma
- Value network
- Sustaining Technologies
- Disruptive Technologies

Innovator's Dilemma

- Innovator's Dilemma
  - Staying committed to a current, profitable technology
  - Failing to provide adequate levels of investment to new and possibly risky technologies
  - Company is responding to the needs of established customers

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Value Network

- Found in every industry
- Cost structure that dictates the margins needed to achieve profitability
- Boundaries are defined by the unique rank ordering of the importance of various product attributes
- Each network has its own metrics of value

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Sustaining Technologies

- Incremental or radical innovations that improve product performance
- Most new technologies developed by established companies are sustaining in nature
- The vast majority of innovations are sustaining in nature

Disruptive Technologies

- Redefine performance
- New entrants to an industry
- Enable something to be done that was previously deemed impossible
- Enable new markets to emerge

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Global E-Commerce

- Every 48 hours, Yahoo records more than 24 terabytes of data about its users' online habits— equivalent to all the information contained in all the books in the Library of Congress

- Between 2003 and 2008, the number of Internet users in China increased from 68 million to   300 million; in Shanghai, Beijing and Guangzhou,   one-third of all residents use the Internet

- 37% of European adults—136 million people—shopped online in 2008

Global E-Commerce

- Divided into three broad categories
  - Business to Business (B2B)
  - Business to Consumer (B2C)
  - Consumer to Consumer
    (Peer to peer)

  Internet penetration
  - Korea 76.1% (highest)
  - U.S. 75%
  - China has 300 million users; largest e-commerce market
  - Western European online retail and travel sales will grow at 8% CAGR, 2008-2014
  - 37% (136 million) European adults shop online

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Technology Forecast

Travel booked over the Internet represents the largest e-commerce category. Revenues totaled $68 billion in 2005 and are expected to reach $104 billion by 2010.

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Web Sites

- Classified by purpose
  - Promotion sites to promote goods or services
  - Content sites that provide news and entertainment
  - Transaction sites allow consumers to purchase goods and services

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Categories of Web Sites

	Information/Support/ Service	Transactions
Domestic	**1** Simpson College *Washington Post*	**2** Netflix TiVo
Audience **Focus**	**3** Gucci Godin Guitars Procter & Gamble	**4** Amazon.com Dell eBay iTunes Music Store
Global		

Non-Transaction Web Sites

- Some products not suitable for internet sales i.e., McDonald's, P&G shampoo

- Some companies limit web site to promotion and information
  - Infrastructure for online sales $20-$30 million
  - Some products sell best when tried in stores
  - Luxury goods producers like Burberry, Prada, Gucci want a shopping experience that adds to the brand so web sites don't sell

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Web Sites

- Globally, the importance of being present on the Internet is recognized

- Managers may buy banner ads that are evaluated through click-through rates

- Paid search advertising

- The Long Tail—fringe sales aggregate to drive meaning income. Amazon, iTunes can offer esoteric products that brick and mortar stores find difficult to carry

Creating Web Sites

- Register a country-specific domain name
- Localize the web site in the native language and business nomenclature of the target market
- Reflect local culture, customs, and aesthetic preferences
- Privacy issues; EU's strict laws adopted by Canada, Australia, and Asia
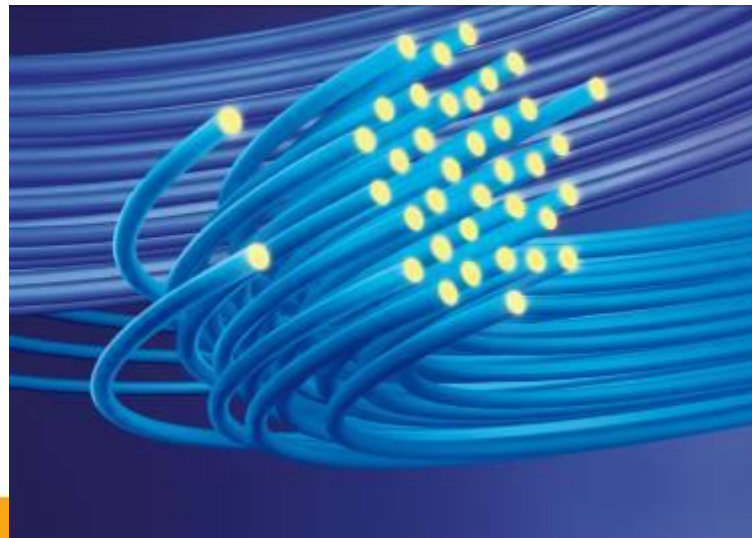- Create a distribution system

amazon.co.uk   **amazon.de**   **amazon.fr**   **amazon.co.jp**

Broadband

- Has sufficient capacity to carry multiple voice, data, or video channels simultaneously

- Bandwidth determines the range of frequencies that can pass over a transmission channel

Broadband

- Creates opportunities for streaming audio, video, and media

- Online gaming

- Online education

- Medical diagnosis

  and treatment

- E-Commerce

Mobile Commerce

- Term for conducting commercial transactions using wireless handheld devices such as PDA's, cell phones
- Wi-fi networks have limited range

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Mobile Commerce

- WiMAX range of miles but not used with mobile devices

- Bluetooth–uses less power than wi-fi, works well with cell phones and covers shorter distances than wi-fi

Smart Cell Phones

- One billion cellular handsets are sold annually

- New features like cameras provide an incentive for upgrades

- SMS—texting—is expected to move to digital TV, the Internet, and e-mail

- GPS allows for location-based advertising

Mobile Music

- Ringtone sales in 2006 were $6 billion
- iTunes downloads in 2006 reached 1 billion
- By 2011, worldwide mobile music purchases should reach $14 billion with Asia accounting for 40% of the market
- Online music spending in the U.S. is expected to reach $2.5 billion or 22% of music sales by 2011. Ringtones will account for another 12%.

Internet Phone Service

- The next big thing for the telecommunications industry

- Has the potential to render the current telecommunications infrastructure obsolete

- Currently only accounts for a small percentage of total global calling

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Digital Books and Electronic Reading Devices

- Amazon's Kindle, Sony's Reader Digital Book
- Kindle is test marketing the device with textbooks
- Piracy is a concern for many authors