Course „Economics and Business Management"
Prof. Dr. Marius Dannenberg

Chapter 1
Understanding the contemporary economics and business environment

Syllabus: "Economics and Business Management"

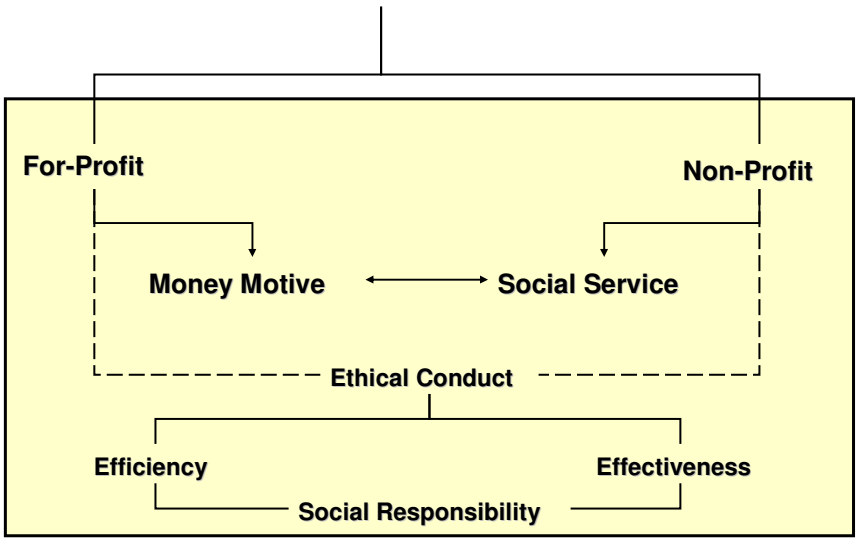
Chapter Outline

- **The Concept of Business and the Concept of Profit**
- **Economic Systems Around the World**
- **The Economics of a Market System**
- **A Short History of Business in the U.S. and Germany**
- **Organizational Boundaries and Environments**
- **The Economic Environment**
- **The Global Economy in the 21st Century**
- **The Technological Environment**
- **The Political-Legal Environment**
- **The Sociocultural Environment**
- **The Business Environment**

The Concept of Business and the Concept of Profit

- Business **is an organization that provides goods or services to earn profits**
- Profits **represent the difference between a business's revenues and its expenses**

What Is a Business?



Categories of Business

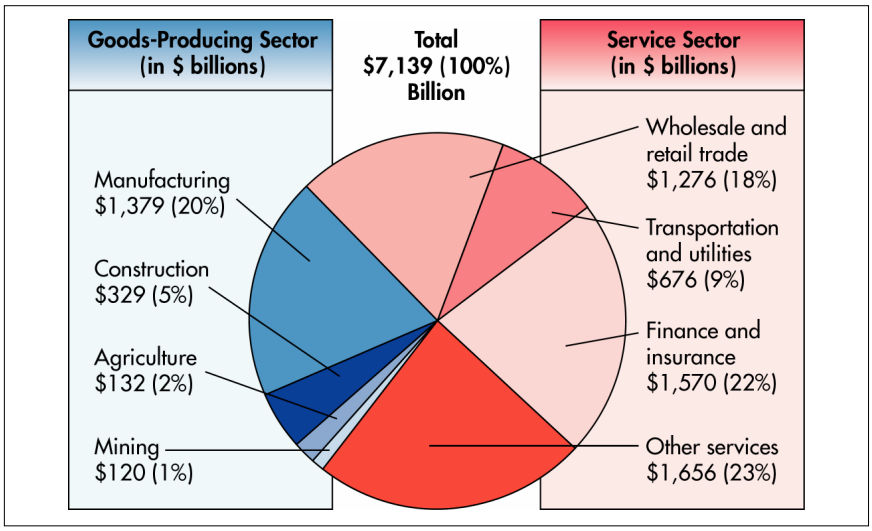
Producing Goods

Capital Intensive

Providing Services

Labor Intensive

Growth in the Service Sector

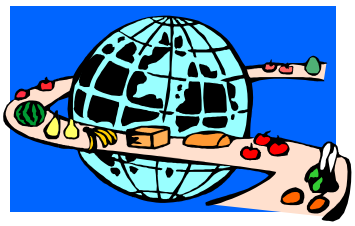


Why Is the Service Sector Growing?

- **More disposable income**
- **Changing demographics and lifestyles**
- **Complex goods and technologies**
- **Need for professional advice**
- **Low barriers to entry**

Economic Systems Around the World

An *economic system* is a nation's system for allocating its resources among its citizens.



The word *Economy* . . .

Comes from a Greek word for "one who manages a household."

Microeconomics

- **Microeconomics is the study of the choices made by consumers, firms, and government, and how their choices affect the market for a particular good or service**
- **Microeconomics focuses on the analysis of individual economic units**
- **Microeconomic analysis can be used to:**
  1. **Understand how markets work and predict changes**
  2. **Make personal and managerial decisions**
  3. **Evaluate the merits of public policies.**

Macroeconomics

- **Macroeconomics** is the study of the nation's economy as a whole
- Macroeconomic analysis can be used to:
  - Understand how a national economy works
  - Understand the grand debates over economic policy
  - Make informed business decisions

The Diverse Fields of Economics

Examples of microeconomic and macroeconomic concerns

	Production	Prices	Income	Employment
Microeconomics	Production/Output in Individual Industries and Businesses How much steel How many offices How many cars	Price of Individual Goods and Services Price of medical care Price of gasoline Food prices Apartment rents	Distribution of Income and Wealth Wages in the auto industry Minimum wages Executive salaries Poverty	Employment by Individual Businesses & Industries Jobs in the steel industry Number of employees in a firm
Macroeconomics	National Production/Output Total Industrial Output Gross Domestic Product Growth of Output	Aggregate Price Level Consumer prices Producer Prices Rate of Inflation	National Income Total wages and salaries Total corporate profits	Employment and Unemployment in the Economy Total number of jobs Unemployment rate

Why Study Economics and Business Management?

- **Probably the most important reason for studying economics is** *to learn a way of thinking.*
- **Economics involves the study of societal and global affairs concerning resource allocation.**
- **Economics is helpful to us as voters. Voting decisions require a basic understanding of economics.**
- **Money and financial systems are an important component of the economic system, but are not the most fundamental issue in economics.**

The Method of Economics and Business Management

- **Positive economics studies economic behavior without making judgments. It describes what exists and how it works. Positive economics concerns the forces that affect economic activity, and predicts the consequences of alternative actions. It is the focus of most modern economic reasoning.**

- **Normative economics, also called policy economics, analyzes outcomes of economic behavior, evaluates them as good or bad, and may prescribe courses of action. Normative economics answers the question, What ought to be? Most economists shy away from normative questions.**

The Method of Economics

Positive economics includes:

- **Descriptive economics, which involves the compilation of data that describe phenomena and facts.**
- **Economic theory that involves building models of behavior. A theory is a statement or set of related statements about cause and effect, action and reaction.**

Empirical economics refers to the collection and use of data to test economic theories.

Theories and Models

- **A** *theory* **is a general statement of cause and effect, action and reaction. Theories involve models, and models involve variables.**
- **A** *model* **is a formal statement of a theory. Models are descriptions of the relationship between two or more variables.**
- Ockham's razor **is the principle that irrelevant detail should be cut away. Models are simplifications, not complications, of reality.**
- **A** variable **is a measure that can change from observation to observation.**
- **Using the** *ceteris paribus,* **or** *all else equal, assumption***, economists study the relationship between two variables while the values of other variables are held unchanged.**
- **The ceteris paribus device is part of the process of abstraction used to focus only on key relationships.**

Theories and Models

In formulating theories and models we must avoid two pitfalls:

- **The** *Post Hoc Fallacy***: It is erroneous to believe that if event A happened before event B, then A caused B.**
- **The** *Fallacy of Composition***: It is erroneous to believe that what is true for a part is also true for the whole. Theories that seem to work well when applied to individuals often break down when they are applied to the whole.**

The Economic Way of Thinking

- **Economists use** simplifying assumptions **to eliminate irrelevant details and focus on what really matters. Assumptions are an aid to the analytical process.**
- **Simplifying assumptions do not have to be realistic.**
- **We use maps, for example, to get us from point A to point B knowing that the map is not an accurate description of the road ahead, but only an abstraction of reality.**

The Economic Way of Thinking

Most of the economic analysis in this lecture is based on two assumptions:

- **We'll assume that people act in their own self-interest, without considering their actions on other people.**
- **We'll assume that people make informed decisions.**

Economic Policy

Criteria for judging economic outcomes:

- *Efficiency*, **or allocative efficiency. An efficient economy is one that produces what people want at the least possible cost.**
- *Equity*, **or fairness of economic outcomes.**
- *Growth*, **or an increase in the total output of an economy.**
- *Stability*, **or the condition in which output is steady or growing, with low inflation and full employment of resources.**

What Is Economics and Business Management?

Economics **is the study of the choices made by people who are faced with scarcity.**

- **Scarcity** is a situation in which resources are limited but can be used in different ways; so one good or service must be sacrificed for another.

Society's Choices

The decisions of producers, consumers and government determine how an economic system answers three fundamental questions:

1. **What products do we produce?**
2. **How do we produce these products?**
3. **Who consumes the products?**

Factors of Production (Traditional View)

Factors of production are the resources that are used to produce goods and services:

Natural resources:
The things created by acts of nature such as land, water, mineral, oil and gas deposits, renewable and nonrenewable resources.

Labor:
The human effort, physical and mental, used by workers in the production of goods and services.

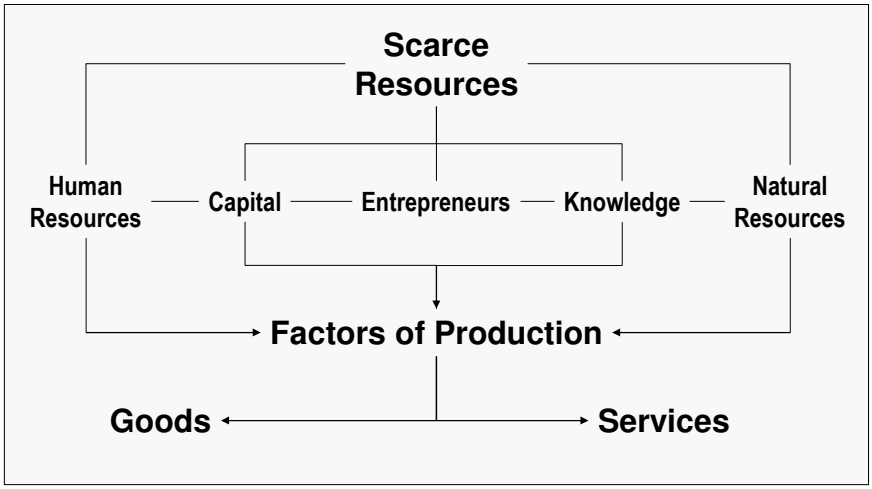
Physical capital:
All the machines, buildings, equipment, roads and other objects made by human beings to produce goods and services.

Factors of Production (Modern View)

Factors of production are the resources that are used to produce goods and services:

(1) Natural resources: The things created by acts of nature such as land, water, mineral, oil and gas deposits, renewable and nonrenewable resources.
(2) Labor: The human effort, physical and mental, used by workers in the production of goods and services.
(3) Physical capital: All the machines, buildings, equipment, roads and other objects made by human beings to produce goods and services.
(4) Human capital: The knowledge and skills acquired by a worker through education and experience.
(5) Entrepreneurship: The effort to coordinate the production and sale of goods and services. Entrepreneurs take risk and commit time and money to a business without any guarantee of profit.

What Is an Economic System?



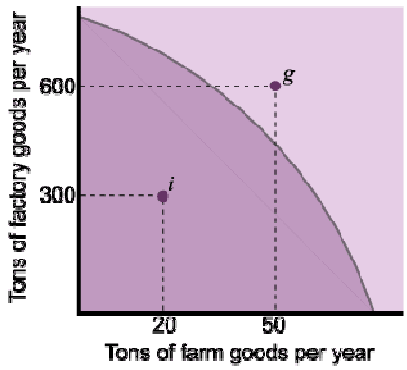
The Production Possibilities Frontier (PPF) Curve

- **The PPF curve shows the possible combinations of goods and services available to an economy, given that all productive resources are fully and efficiently employed.**

The Production Possibilities Frontier (PPF) Curve

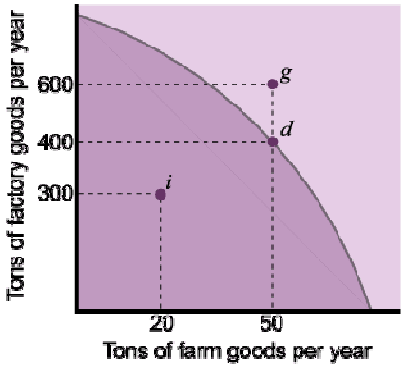
- **When the economy is at point "*i*", resources are not fully employed and/or they are not used efficiently.**

The Production Possibilities Frontier (PPF) Curve



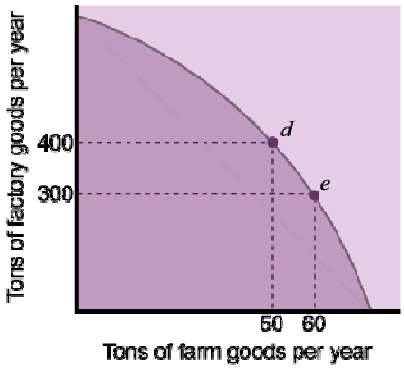
- **Point "*g*" is desirable because it yields more of both goods, but not attainable given the amount of resources available.**

The Production Possibilities Frontier (PPF) Curve



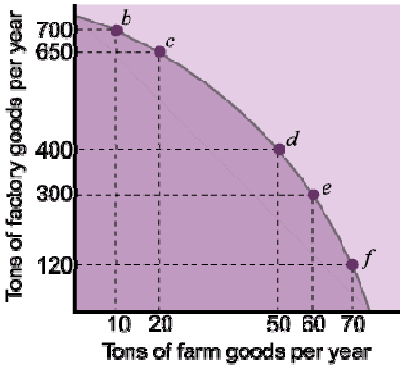
- **Point "*d*" is one of the possible combinations of goods produced when resources are fully and efficiently employed.**

Scarcity and the Production Possibilities Curve



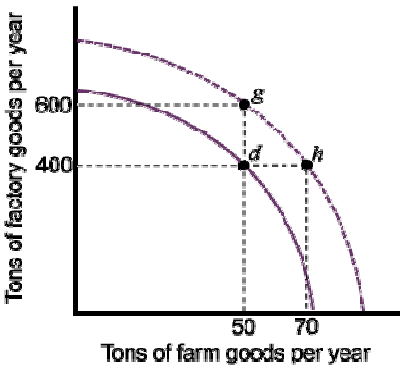
- **To increase the amount of farm goods by 10 tons, we must sacrifice 100 tons of factory goods.**

The Production Possibilities Frontier (PPF) Curve



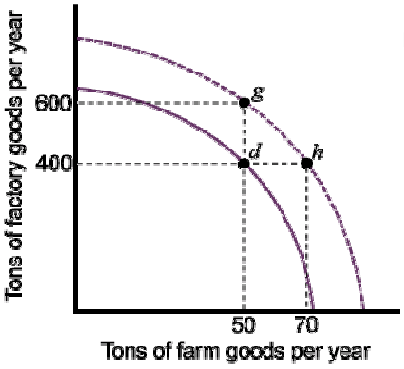
- **The PPF curve is bowed out because resources are not perfectly adaptable to the production of the two goods.**
- **As we increase the production of one good, we sacrifice** progressively more **of the other.**

Shifting the Production Possibilities Frontier Curve



- **To increase the production of one good without decreasing the production of the other, the PPF curve must shift outward.**

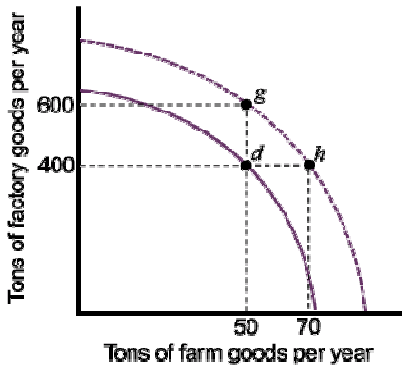
Shifting the Production Possibilities Frontier Curve



The PPF curve shifts outward as a result of:

1. **An increase in the economy's resources, or**
2. **A technological innovation that increases the output obtained from a given amount of resources.**

Shifting the Production Possibilities Frontier Curve



- **From point "*d*", an additional 200 tons of factory goods or 20 tons of farm goods are now possible (or any combination in between).**

The Economic Problem

- The economic problem: **Given scarce resources, how, exactly, do large, complex societies go about answering the three basic economic questions?**
- *Economic systems* **are the basic arrangements made by societies to solve the economic problem. They include:**
  - **Command economies**
  - **Laissez-faire economies**
  - **Mixed systems**

The Economic Problem

- **In a** *command economy*, **a central government either directly or indirectly sets output targets, incomes, and prices.**
- **In a** *laissez-faire economy*, **literally from the French: "allow (them) to do," individual people and firms pursue their own self-interests without any central direction or regulation. The central institution of a laissez-faire economy is the** *free-market system*.
- **A** market **is the institution through which buyers and sellers interact and engage in exchange.**

Laissez-Faire Economies: The Free Market

- *Consumer sovereignty* **is the idea that consumers ultimately dictate what will be produced (or not produced) by choosing what to purchase (and what not to purchase).**
- *Free enterprise:* **under a free market system, individual producers must figure out how to plan, organize, and coordinate the production of products and services.**
- **The** *distribution of output* **is also determined in a decentralized way. The amount that any one household gets depends on its income and wealth.**
- **The basic coordinating mechanism in a free market system is price.** *Price* **is the amount that a product sells for per unit. It reflects what society is willing to pay.**

Mixed Systems, Markets, and Governments

Markets are not perfect, and governments play a major role in all economic systems in order to:

- **Minimize market inefficiencies**
- **Provide public goods**
- **Redistribute income**
- **Stabilize the macroeconomy**
- **Promote low levels of unemployment**
- **Promote low levels of inflation**

Types of Economic Systems

Planned Economies

- **Communism**

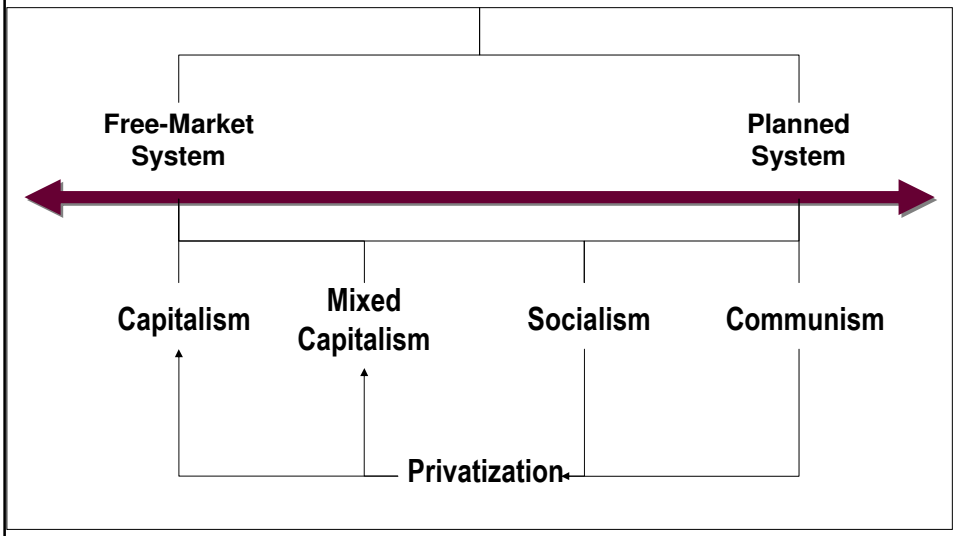
Market Economies

- **Market**
  - ***Input and Output Markets***
- **Capitalism**

Mixed Market Economies

- **Privatization**
- **Socialism**

Types of Economic Systems



Economic Systems

- Market capitalism
- Centrally planned socialism
- Centrally planned capitalism
- Market socialism

Economic Systems

	Resource Allocation: Market	Resource Allocation: Command
Private Resource Ownership	Market Capitalism	Centrally Planned Capitalism
State	Market Socialism	Centrally Planned Socialism

Market Capitalism

Economic system in which individuals and firms allocate resources:

- **Production resources are privately owned**
- **Consumers decide what goods are desired and firms determine what and how much to produce**
- **Role of state is to promote competition and protect consumers**

Centrally Planned Socialism

Opposite of market capitalism

State holds broad powers to serve the public interest; decides what goods and services are produced and in what quantities

Consumers can spend on what is available

Government owns entire industries

Demand typically exceeds supply

Centrally Planned Capitalism

Economic system in which command resource allocation is used extensively in an environment of private resource ownership

Examples:

- Sweden
- Japan

Market Socialism

Economic system in which market allocation policies are permitted within an overall environment of state ownership

Examples:

- **China**
- **India**

Degrees of Economic Freedom

Rankings of economic freedom among countries

- **Ranges from "free" to "repressed"**

Variables considered include such things as:

- **Trade policy**
- **Taxation policy**
- **Banking policy**
- **Wage and price controls**
- **Property rights**

Degrees of Economic Freedom

Free	Repressed
▪ Hong Kong	▪ Bosnia
▪ Singapore	▪ Vietnam
▪ Ireland	▪ Laos
▪ New Zealand	▪ Iran
▪ United States	▪ Cuba
▪ United Kingdom	▪ Libya
▪ Netherlands	▪ North Korea
▪ Australia	▪ Congo
▪ Switzerland	

Stages of Market Development

High income countries
Upper-middle income countries
Lower-middle income countries
Low income countries

Categories developed by The World Bank

Big Emerging Markets (BEMs)

China	Mexico
India	Argentina
Indonesia	South Africa
South Korea	Poland
Brazil	Turkey

Low Income Countries

GNP per capita of $785 or less

Characteristics

- Limited industrialization
- High percentage of population involved in farming
- High birth rates
- Low literacy rates
- Heavy reliance on foreign aid
- Political instability and unrest

Lower Middle Income Countries

- GNP per capita between $786 and $3,125
- Sometimes called less-developed countries (LDCs)
- Characteristics
- Early stages of industrialization
- Cheap labor markets
- Factories supply items such as clothing, tires, building materials, and packaged foods
- 3 BEMs: Poland, Turkey, Indonesia

Upper Middle Income Countries

GNP per capita between $3,126 to $9,655

Characteristics

- Rapidly industrializing
- Rising wages
- High rates of literacy and advanced education
- Lower wage costs than advanced countries

Sometimes called newly industrializing economies (NIEs)

3 BEMs: Argentina, Brazil, Mexico, South Africa

High Income Countries

GNP per capita above $9,656

Sometimes referred to as post-industrial countries

Characteristics

- **Importance of service sector, information processing and exchange, and intellectual technology**
- **Knowledge as key strategic resource**
- **Orientation toward the future**

G-8 Countries

Leaders from these high income countries work to establish prosperity and ensure monetary stability:

- **United States**
- **Japan**
- **Germany**
- **France**
- **Britain**
- **Canada**
- **Italy**
- **Russia**

OECD: Organization for Economic Cooperation and Development

29 nations each with market-allocation economic systems

Mission: to enable its members to achieve the highest sustainable economic growth and improve the economic and social well-being of their populations

http://www.oecd.org

The Triad

Dominant economic centers of the world

- Japan
- Western Europe
- United States

Expanded Triad

- Pacific Region
- North America
- European Union

Balance of Payments

Record of all economic transactions between the residents of a country and the rest of the world:

- Current account – record of all recurring trade in merchandise and services, private gifts, and public aid between countries
  - trade deficit
  - trade surplus
- Capital account – record of all long-term direct investment, portfolio investment, and capital flows

Leading Exporters and Importers

Exporters	Importers
United States	United States
Germany	Germany
Japan	United Kingdom
China	France
France	Japan
United Kingdom	Netherlands
Canada	Canada
Italy	Italy

Private Enterprise and Competition in a Market Economy

Private enterprise is an economic system that allows individuals to pursue their own interests without undue governmental restriction. Four elements:

- ***Private Property Rights***
- ***Freedom of Choice***
- ***Profits***
- ***Competition***

A Short History of Business in the U.S.

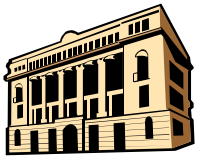
The landscape of U.S. business has evolved over the course of many decades.

The Factory System and the Industrial Revolution

Major mid-18th century change in production characterized by a shift to the factory system, mass production and the specialization of labor

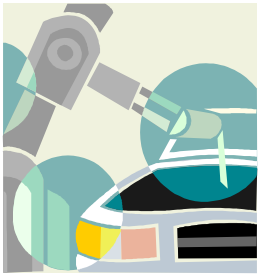
Laissez-Faire and the Entrepreneurial Era

Period during the 19th century in which improvements in the U.S. banking system and the nation's infrastructure and the rise of the entrepreneur on a grand scale were hallmarks

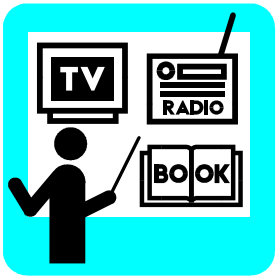


The Production Era

Period during the early 20th century in which U.S. business focused primarily on improving productivity and manufacturing efficiency



The Marketing Era



Post-World War II period in which production continued to increase, technology advanced and the standard of living rose

The Global Era

Period throughout the 1980s in which the continuation of technological advances in production, computer technology, information systems and communications capabilities was experienced

The Internet Era

Ways the Internet affects business:

- **The Internet will give a dramatic boost to trade in all sectors of the economy.**
- **The Internet will help to level the playing field between larger and smaller enterprises regardless of their products.**
- **The Internet holds considerable potential as an effective and efficient networking mechanism.**

The New Economy

	Old Economy	New Economy
General Characteristics	•Physical Assets •Cost Control	•Intellectual Assets •Adding Value
Technology	•Mechanical	•Information
Workforce	•Job-Specific Skills	•Transferable Skills •Lifelong Learning
Geography	•Close to Resources	•Near to Collaborators •Near to Competitors
Capital	•Debt Financing	•Venture Capital

Organizational Boundaries and Environments

All businesses – regardless of their size, location or mission – operate within a larger external environment.

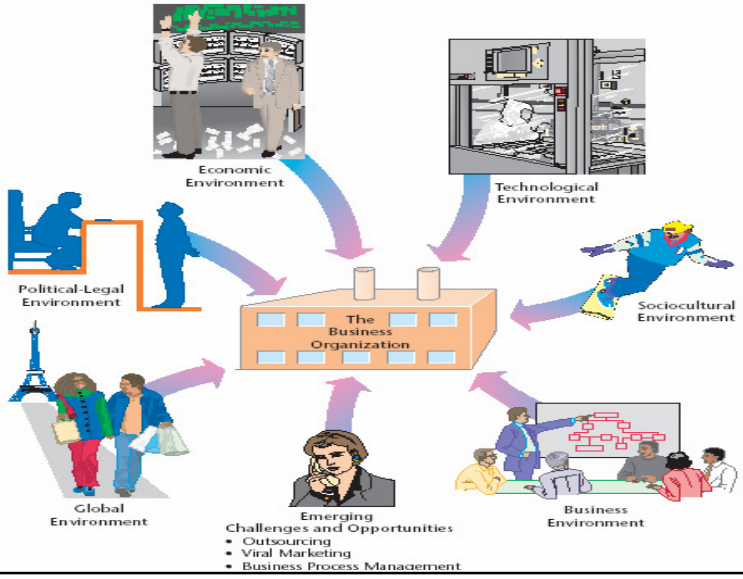
What Is the External Environment?

- Everything outside an organization's boundaries that might affect it

What Is an Organizational Boundary?

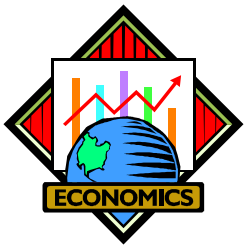
- That which separates the organization from its environment

Dimensions of the External Environment

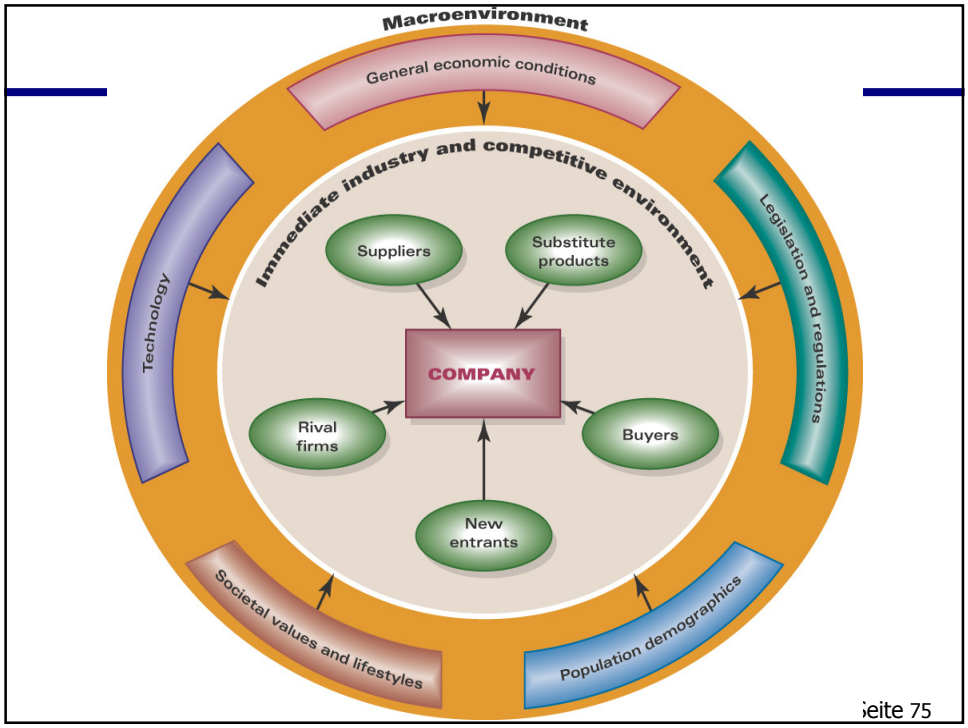


What Is the Economic Environment?

- **Conditions of the economic system in which an organization operates**



The Components of a Company's Macroenvironment



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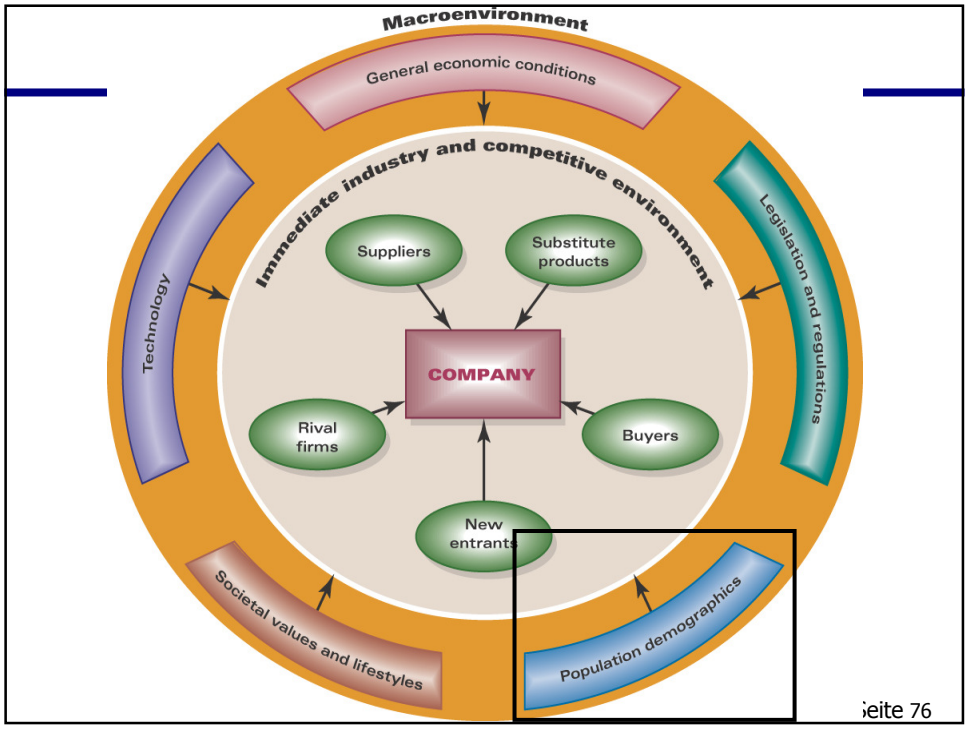

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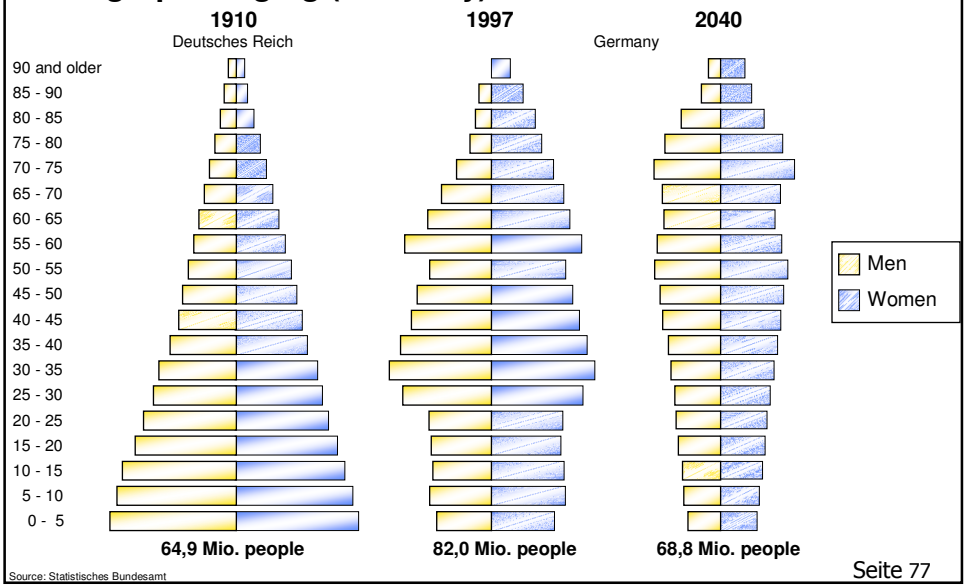
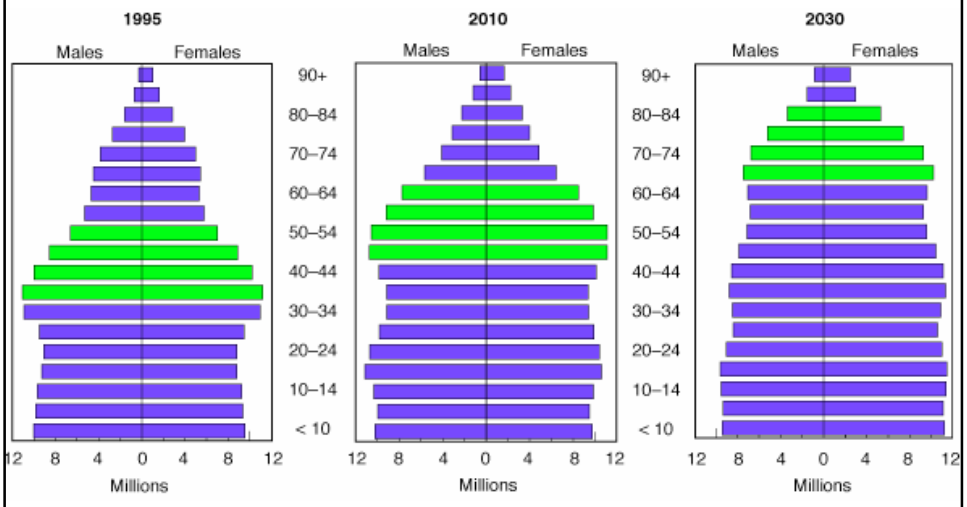
Demographic Aging (Germany)

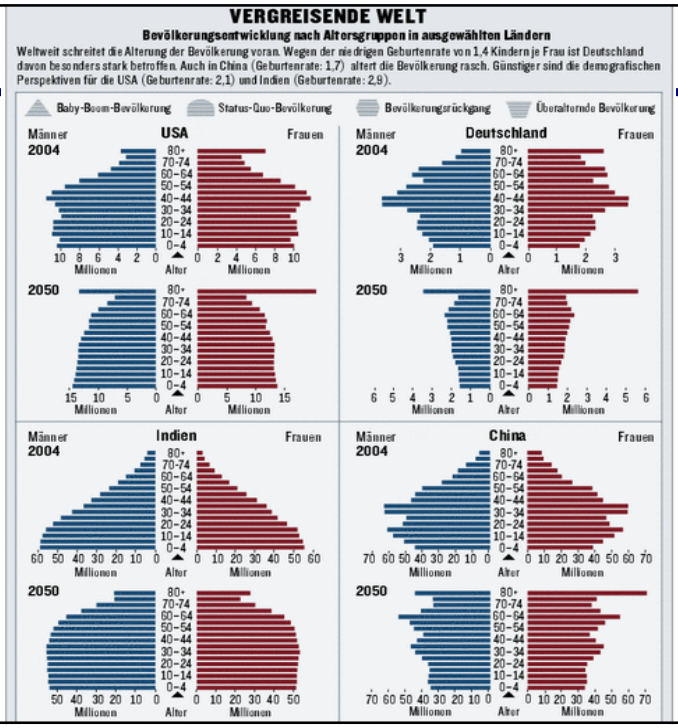


Source: Statistisches Bundesamt

Demographic Aging (USA)



Source: U.S. Census Bureau



Quelle: Wirtschaftswoche

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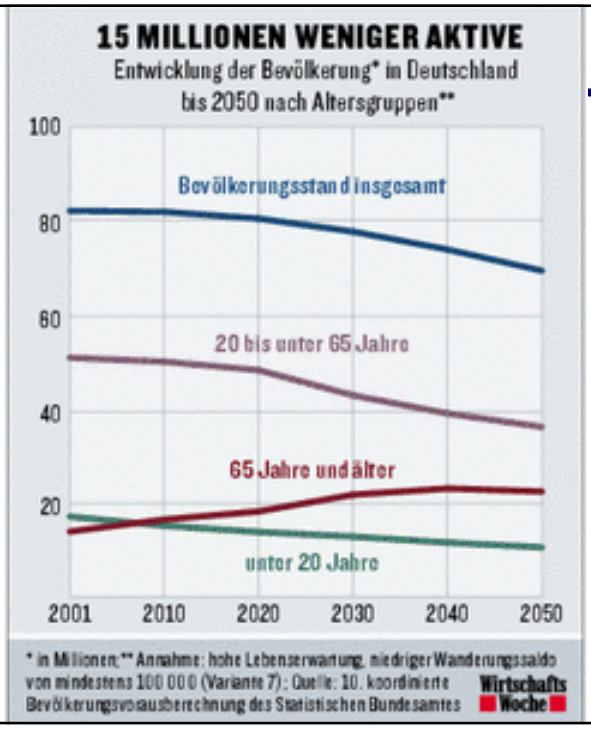

Quelle: Wirtschaftswoche

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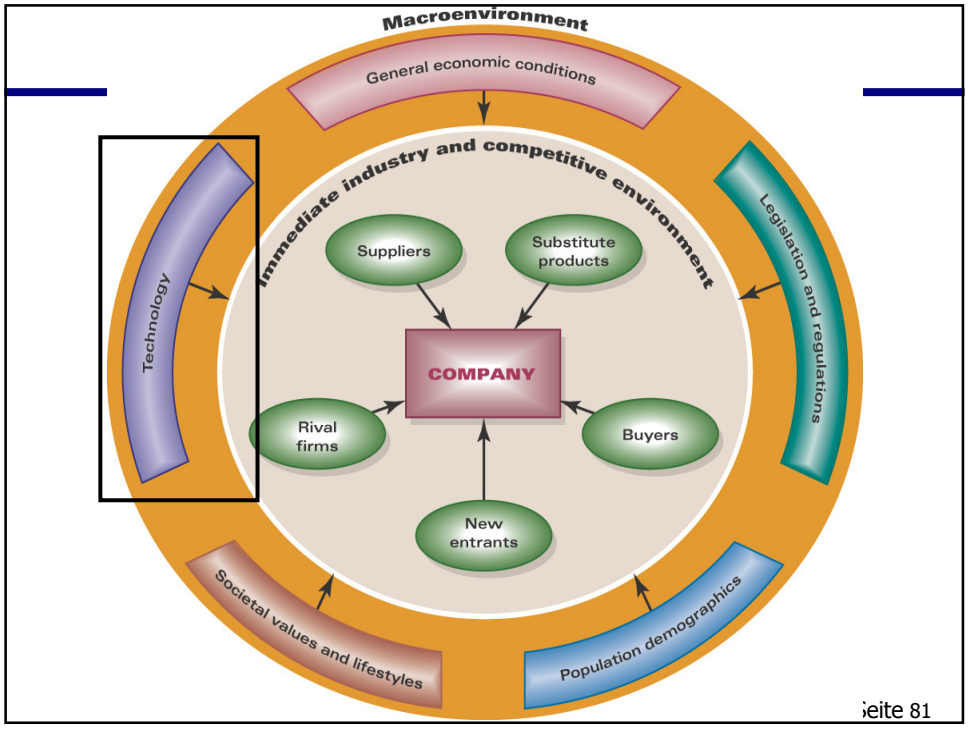

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Management Challenges in the New "Connected" Millennium

Connecting Technologies
- Computer
- Information
- Communication
- Transportation

Connections with Customers
- Connecting more selectively
- Connecting for life
- Connecting Directly

Connections with Marketing Partners
- Connecting with other company departments
- Connecting with suppliers and distributors
- Connecting through strategic alliances

Connections with the world around us
- Global Connections
- Connections with values and responsibilities
- Broadened connections

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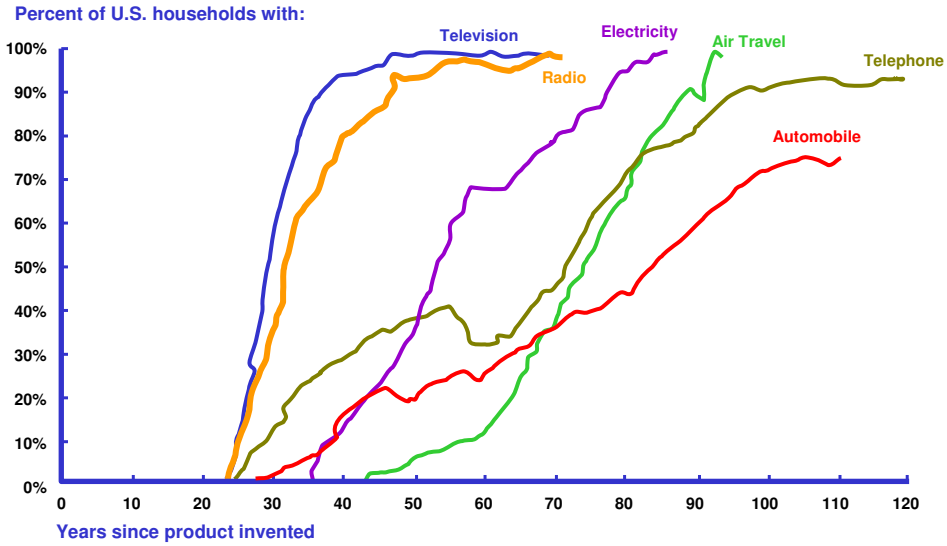
Strategic Mistakes

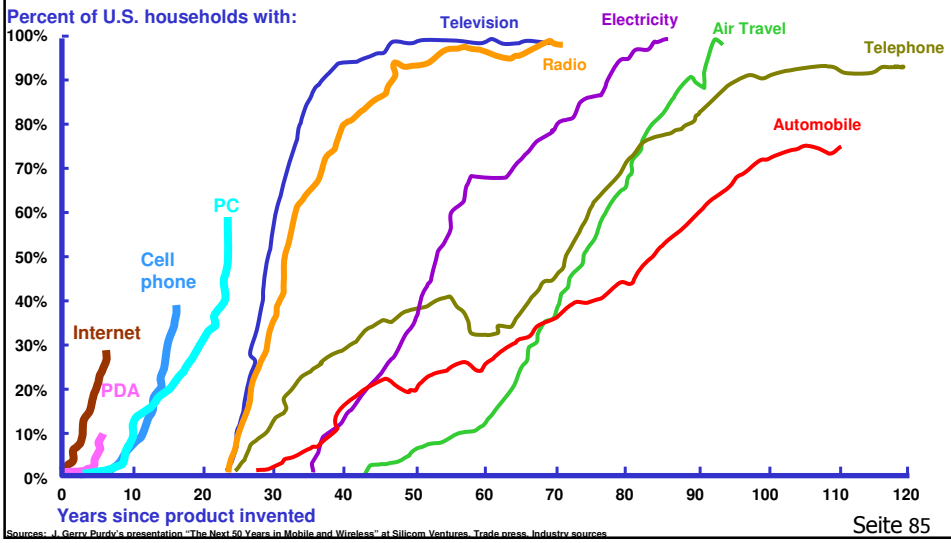
- ***"This "telephone" has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."*** **(Western Union internal memo, 1876)**
- ***"But what [is a microchip] good for?"*** **(Engineer at the Advanced Computing Systems Division of IBM, 1968)**
- ***"Dell has a great business model, but that dog won't scale."*** **(John Shoemaker, head of Sun's server division, 2000)**

Adoption Rate Of Industrial Age Technologies



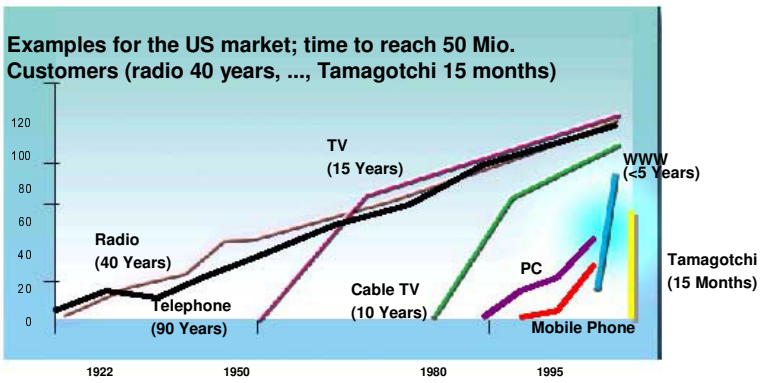
Sources: J. Gerry Purdy's presentation "The Next 50 Years in Mobile and Wireless" at Silicom Ventures, Trade press, Industry sources

Adoption Of Information Age Technologies (Relative To Industrial Age Tehnologies)



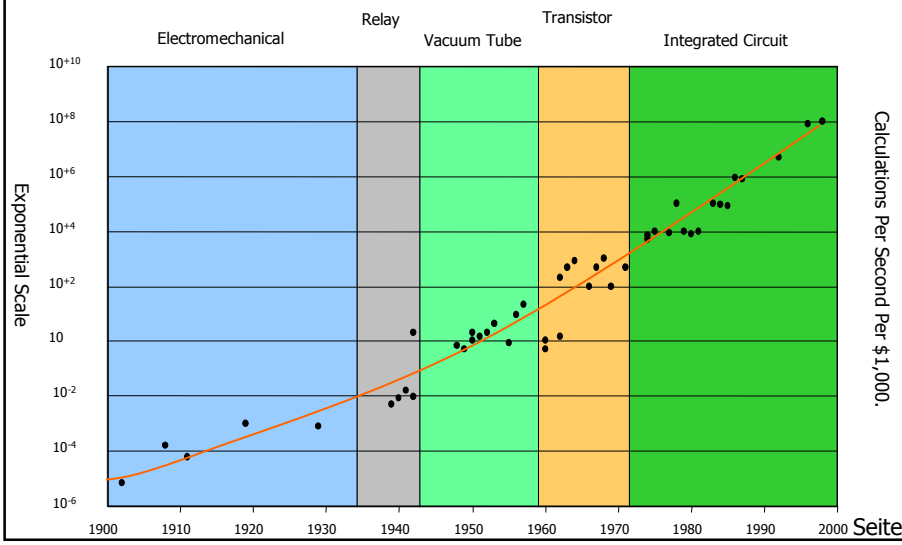
Sources: J. Gerry Purdy's presentation "The Next 50 Years in Mobile and Wireless" at Silicom Ventures, Trade press, Industry sources

Adoption Of Information Age Technologies (Relative To Industrial Age Tehnologies)



Source: Siemens

Technology Laws and Innovation Continue: Moore's Law – The Fifth Paradigm



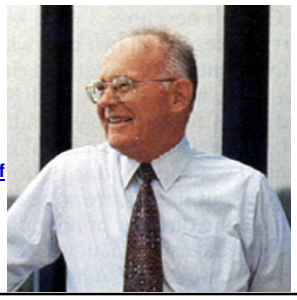
Seite 87

Innovationspotentiale der IT: Moore's Law

What is Moore's Law and why is it important here?

- **Every eighteen months, for the foreseeable future, chip density (and hence computing power) will double while cost will remain constant (Gordon Moore, late 1960's)**
- **The technology that is the driving force behind the digital economy and Moore's law is being shown to be conservative**
- **What did Intel announce recently?**
  - **3,6 GHZ, Pentium 4 chips**

http://info.astrian.net/jargon/terms/m/Moore_s_Law.html
http://www.intel.com/research/silicon/mooreslaw.htm
ftp://download.intel.com/research/silicon/moorespaper.pdf
http://www.intel.com/labs/eml/



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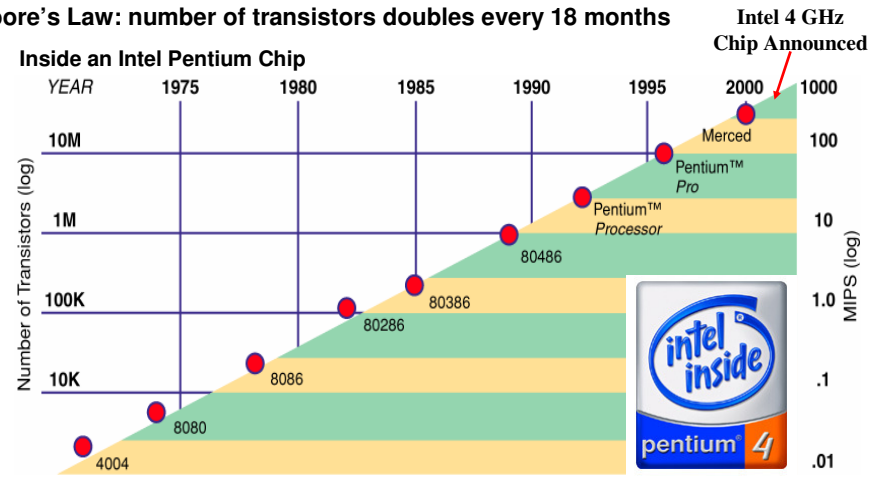
Innovationspotentiale der IT: Moore's Law

Moore's Law: number of transistors doubles every 18 months



Source: Paul Tallon, 2001

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Moore's Law

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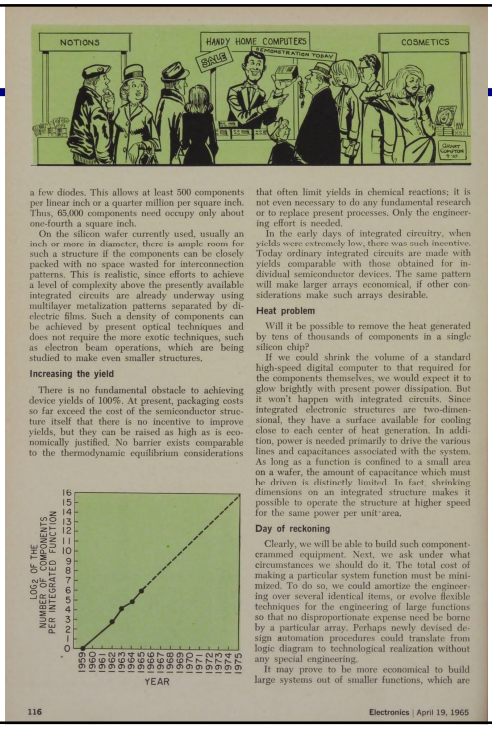
Moore's Law



NOTIONS

HANDY HOME COMPUTERS

COSMETICS

a few diodes. This allows at least 500 components per linear inch or a quarter million per square inch. Thus, 65,000 components need occupy only about one-fourth a square inch.

On the silicon wafer currently used, usually an inch or more in diameter, there is ample room for such a structure if the components can be closely packed with no space wasted for interconnection patterns. This is realistic, since efforts to achieve a level of complexity above the presently available integrated circuits are already underway using multilayer metalization patterns separated by dielectric films. Such a density of components can be achieved by present optical techniques and does not require the more exotic techniques, such as electron beam operations, which are being studied to make even smaller structures.

Increasing the yield

There is no fundamental obstacle to achieving device yields of 100%. At present, packaging costs so far exceed the cost of the semiconductor structure itself that there is no incentive to improve yields, but they can be raised as high as is economically justified. No barrier exists comparable to the thermodynamic equilibrium considerations that often limit yields in chemical reactions; it is not even necessary to do any fundamental research or to replace present processes. Only the engineering effort is needed.

In the early days of integrated circuitry, when yields were extremely low, there was such incentive. Today ordinary integrated circuits are made with yields comparable with those obtained for individual semiconductor devices. The same pattern will make larger arrays economical, if other considerations make such arrays desirable.

Heat problem

Will it be possible to remove the heat generated by tens of thousands of components in a single silicon chip?

If we could shrink the volume of a standard high-speed digital computer to that required for the components themselves, we would expect it to glow brightly with present power dissipation. But it won't happen with integrated circuits. Since integrated electronic structures are two-dimensional, they have a surface available for cooling close to each center of heat generation. In addition, power is needed primarily to drive the various lines and capacitances associated with the system. As long as a function is confined to a small area on a wafer, the amount of capacitance which must be driven is distinctly limited. In fact, shrinking dimensions on an integrated structure makes it possible to operate the structure at higher speed for the same power per unit area.

Day of reckoning

Clearly, we will be able to build such component-crammed equipment. Next, we ask under what circumstances we should do it. The total cost of making a particular system function must be minimized. To do so, we could amortize the engineering over several identical items, or evolve flexible techniques for the engineering of large functions so that no disproportionate expense need be borne by a particular array. Perhaps newly devised design automation procedures could translate from logic diagram to technological realization without any special engineering.

It may prove to be more economical to build large systems out of smaller functions, which are

116 Electronics | April 19, 1965

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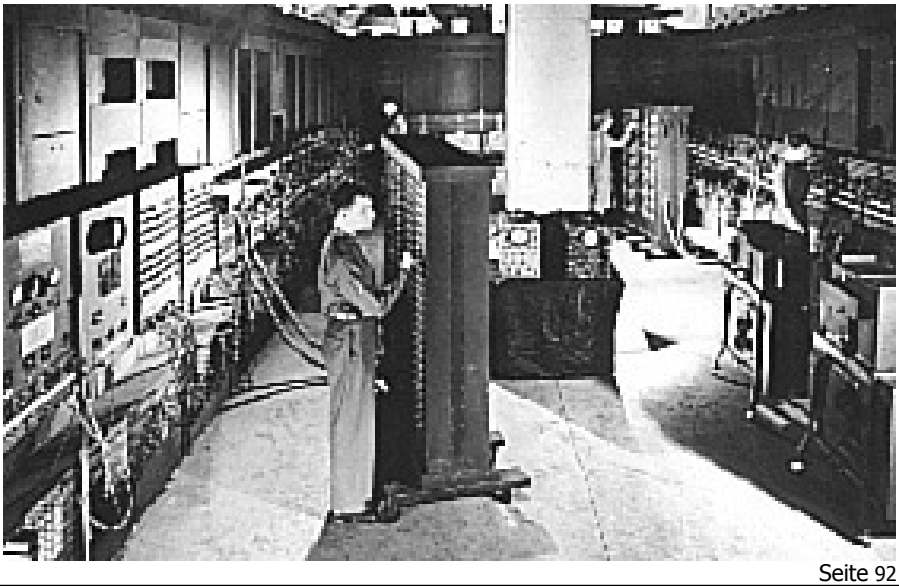
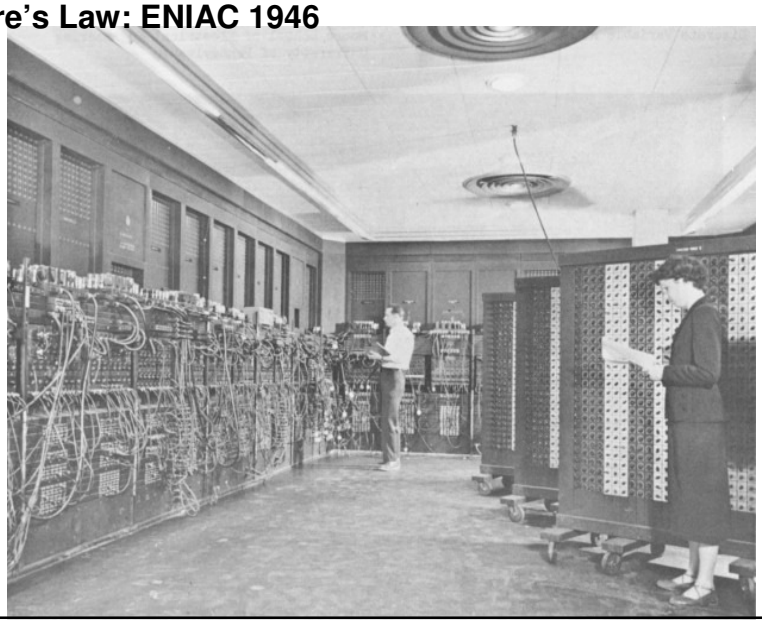
Moore's Law: ENIAC 1946



Seite 92

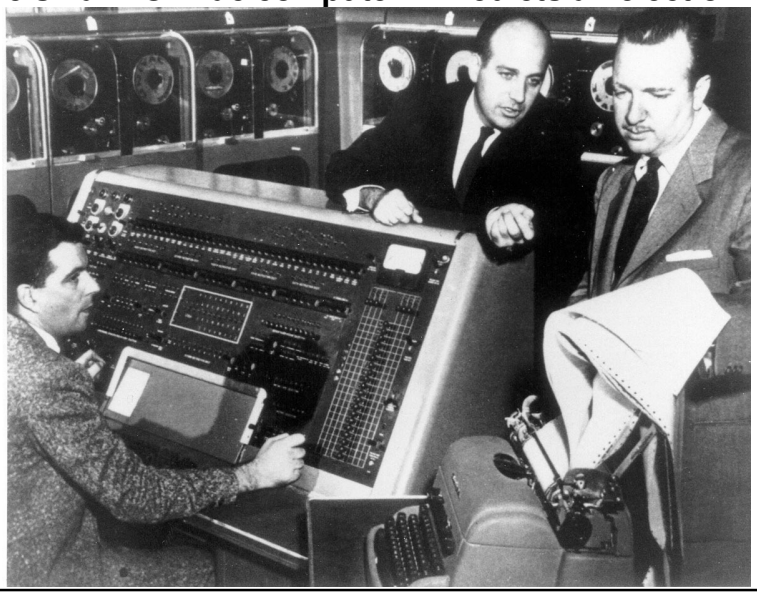
Moore's Law: ENIAC 1946



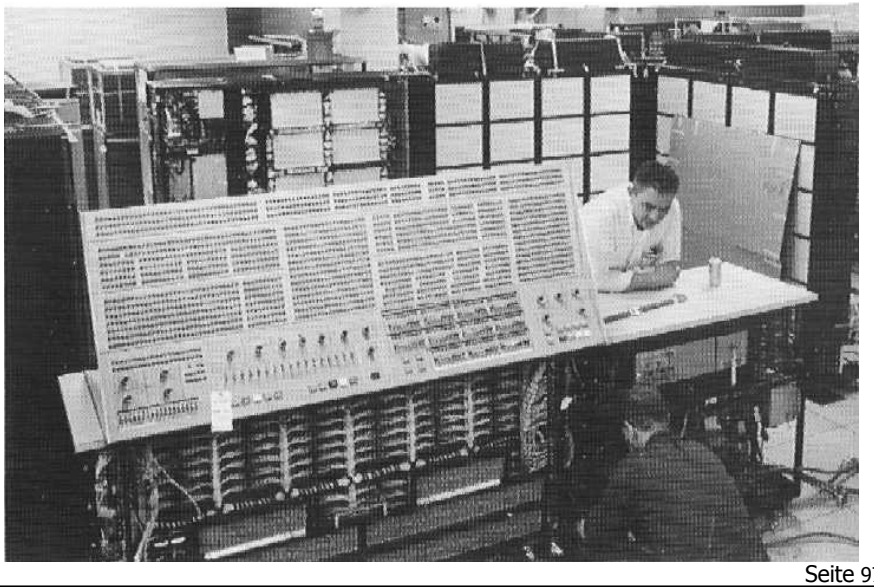
IBM 701

IBM 701: Gets even bigger (1951)

Moore's Law: Univac computer – Predicts an election 1952

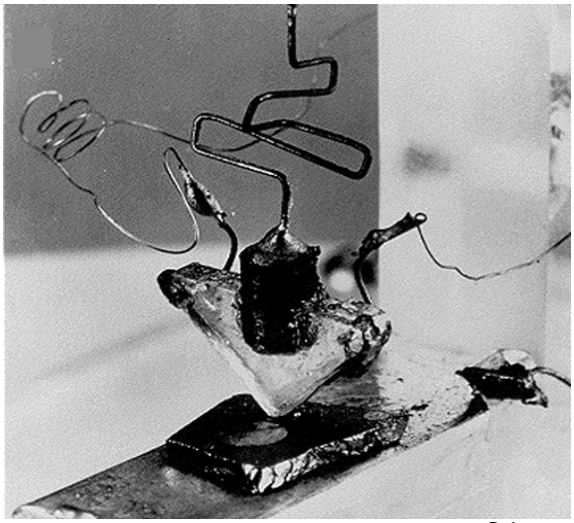


Moore's Law: IBM 360/91 1969



Moore's Law: Transistors and Integrated Circuits

First transistor invented by Bell Labs in 1947. Made of the semi-conductor germanium.



Moore's Law: Transistors and Integrated Circuits

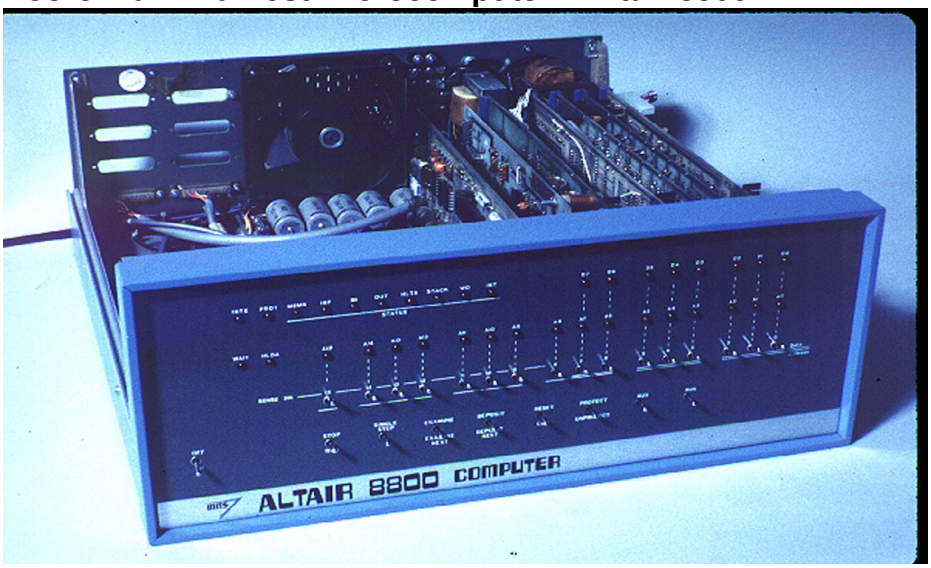
- First transistor invented by Bell Labs in 1947. Made of the semi-conductor germanium.
- The first integrated circuits were invented at Texas Instruments and Fairchild Semiconductor around 1958.
- Gordon Moore and Robert Noyce left Fairchild to found Intel in 1968.
- The Microchip: "But what ... is it good for?" (Engineer at the Advanced Computing Systems Division of IBM, 1968, commenting on the microchip)

Moore's Law: The Microprocessors

Intel's first general purpose microprocessor was developed for a calculator produced by Japanese company Busicom in 1971.

It was the Intel 4004

Moore' Law: Earliest microcomputer – Altair 8800



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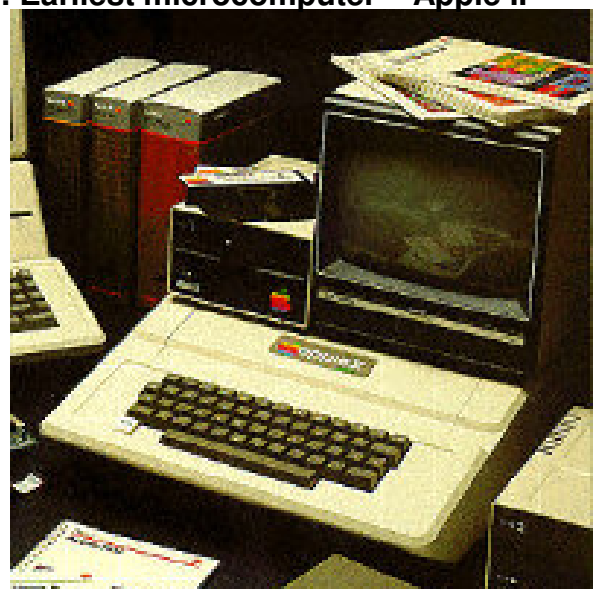
Moore' Law: Earliest microcomputer – Apple II



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Moore's Law: The IBM PC

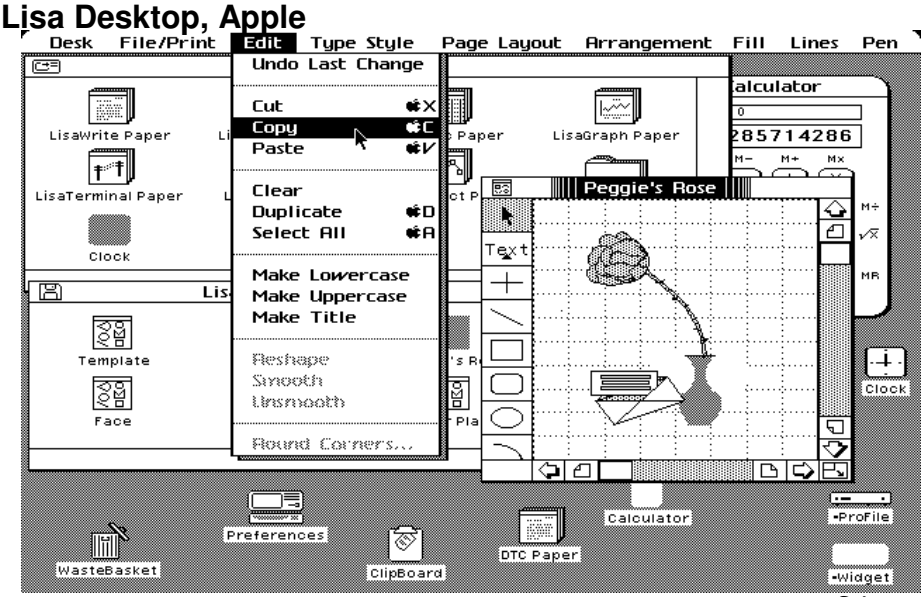
- In 1978 Intel sold the 8088 microprocessor to IBM for the first IBM PC (model 5150) which was launched in 1981 for $2.880 (US).
- It ran at 4.77 MHz, had 64K of RAM and used a single-sided 160K 5.5" floppy.

Star, Xerox, 1981

Moore's Law: Development of PC technology

Apple Lisa:
CPU speed: 5 Mhz
Motherboard RAM: 512 k
Maximum RAM: 2MB (via 3rd party upgrade)
Floppy: Internal 871k 5.25"
HD: 5 MB external (10MB in some configurations of Lisa 2/MacXL)
CD-ROM: none
Monitor: 12" 720 x 360 built-in (B/W)
Sound Input/Output: Continuously Variable Slope Demodulator (CVSD)
Ethernet: none
Weight: 48 lbs. Dimensions: 15.2" H x 18.7" W x 13.8" D
Min System Software: LisaOS
Max System Software: LisaOS/MacWorks
Introduced: January 1983
Terminated: August 1986

Lisa Desktop, Apple



Moore's Law: Development of PC technology

Apple Mcintosh:
CPU speed: 8 Mhz
Motherboard RAM: 128 k
Maximum RAM: 128 k
Floppy: 400 k
HD: none
CD-ROM: none
Monitor: 512x342 9" B/W built-in
Sound Output: mono 8 bit
Sound Input: none
Ethernet: none
Weight: 16.5 lbs.
Dimensions: 13.6" H x 9.6" W x 10.9" D
Introduced: January 1984
Terminated: October 1985

Moore's Law: Development of PC technology

Apple iMac:
CPU: PowerPC 750
CPU speed: 350Mhz
Maximum RAM: 1 GB
Built-in 128-bit 2D/3D ATI RAGE 128 VR (2X AGP)
Bus speed: 100 Mhz
USB: 2
Floppy: none
HD: 6 GB ATA-33
CD-ROM: 24x
Monitor: 15" RGB 24 bit (millions of colors) at 1024x768
Sound Output: stereo 16 bit (Harman Kardon Odissey)
Sound Input: stereo 16 bit (built in mono mic)
Ethernet: 10/100B-T
Airport: Optional card
Weight: 40 lbs. Dimensions: 15" H x 15" W x 17.1" D
Min System Software: 8.6
Max System Software: 10.1.3
Introduced: October 1999
Terminated: July 2000

Moore's Law: Development of PC technology

Apple iMac Flat Panel:
CPU: PowerPC 7450
CPU speed: 700/800 Mhz
Maximum RAM: 1 GB
VRAM: 32MB NVIDIA GeForce2 MX (2X AGP)
Bus speed: 100 Mhz
USB: 3
FireWire: 2
Floppy: none
HD: 20/40 (700 Mhz)/60 (800 Mhz) GB ATA-66
Optical: CD-RW/Combo (700 Mhz)/SuperDrive (800Mhz)
monitor: 15" LCD, 24 bit (millions of colors) at 1024x768
Sound Output: stereo 16 bit, Pro Speaker out
Sound Input: built in mono mic
Ethernet: 10/100B-T
Airport: Optional card
Weight: 21.3 lbs.
Dimensions: 12.95" H x 15.1" W x 10.6" D
Min System Software: 9.2.2
Max System Software: 10.1.3
Introduced: January 2002
Terminated: August 2004

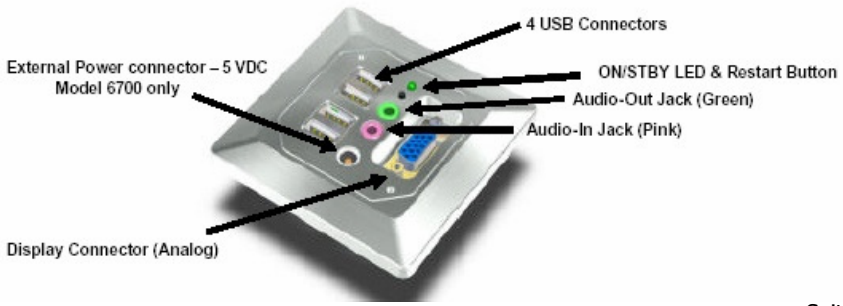
Moore's Law: Development of PC technology

Apple iMac G5 (M9250LL/A):
CPU: Power PC G5
CPU speed: 1,8 GHz
Maximum RAM: 2 GB
Graphics: NVIDIA GeForce FX 5200 Ultra, 64MB DDR SDRAM, AGP 8X
Bus speed: 600 MHz
USB: 3 (USB 2.0, 2 USB 1.1 (on keyboard)
FireWire: 2
HD: 160 GB ATA
Optical: 20-inch (viewable) widescreen TFT active-matrix LCD, 1680 x 1050 pixels, millions of colors
Sound Output: built in stereo speakers
Sound Input: Built-in microphone
Networking: Built-in 10/100BASE-T Ethernet and 56K V.92 modem
Wireless: AirPort Extreme ready (based on 802.11g specification; IEEE 802.11b Wi-Fi certified); internal Bluetooth module available as build-to-order option
Weight: 25.2 lbs. (11,4 kg)
Dimensions: 18.6" (47,2 cm) H x 19.4" (49,3 cm) W x 7.4" (18,9 cm) D
System Software: Mac OS X version 10.3 "Panther"
Introduced: September 2004
Terminated:

Network Computers and Terminals: Jack-PC

- Chip PC unveiling the ground-breaking Jack-PC, a versatile thin client computer fully integrated into the existing wall LAN jack in 2005.
- This unique concept of “computer in-the-wall” unfolds important advantages. Neatly embedded into enterprise LAN infrastructure, it is fully managed with new Users easily and quickly added and configured remotely
- The Jack-PC thin client computers operate in a Server-Based-Computing environment and quickly convert existing enterprise LAN jacks into fully-operatable computers without installing additional cabling.
- Catching ZERO desk space, the computer mounts unobtrusively inside a standard wall socket. The computer module is secured inside the wall and behind the faceplate, lessening exposure to damage, disconnection, or theft.
- Chip PC provides the Jack-PC thin client computers with a fully managed Windows XP-compatible desktop interface
- Minimize installation space and wiring -just connect the display, keyboard and mouse.
- No exposed /removable components.

Network Computers and Terminals: Jack-PC



http://chippc.com/products/thinclients/jackpc/

Moore's Law: Development of portable computer technology

- Osborne 1. Introduced in 1981 as the first portable computer for $1,795 US (around $2,500 in Canada). Weighed 25 lbs.
- Had 64K of RAM, 2 single-sided 90K floppies and an 8 bit Z-80 processor with a 4MHz clock speed. The display was a 5 inch monochrome screen.
- There was no hard drive. An independent power supply (large battery) was extra. Came bundled with a suite of software (Wordstar, dBase II, Supercalc, C- Basic, CP/M OS

Moore's Law: Development of portable computer technology

IBM 5100 Portable Computer:

Price $14,275

Memory 32K

No hard drive

Weight: 50 pounds

Moore's Law: Development of portable computer technology

Dell Latitude 8200:

Price $ 2,357

Memory 512MB

60GB Hard Drive

Weight: 5 pounds

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Moore's Law: Development of portable computer technology

JVC MP-XP 7230:

Price $ 2,099

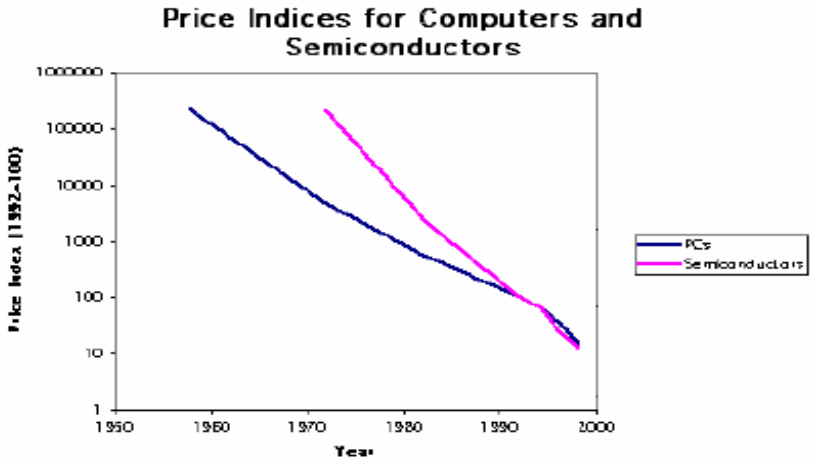
Memory 384MB

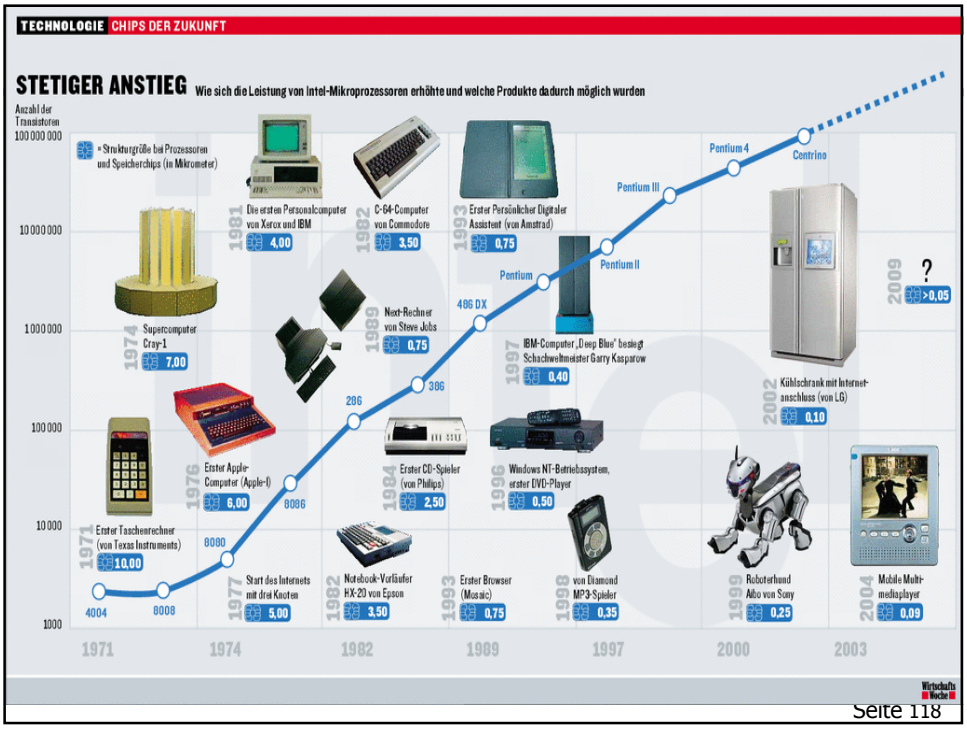
40GB Hard Drive

Weight: 2 pounds

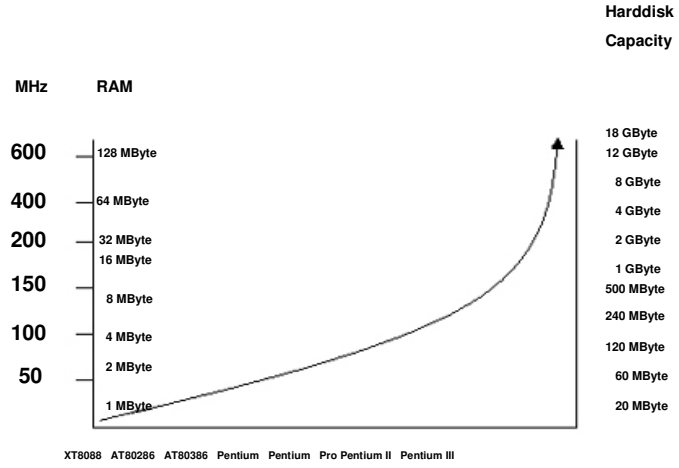
Seite 116

Moore's Law: Today's computers have 66,000 times computing power, at the same cost, as the computers of 1975

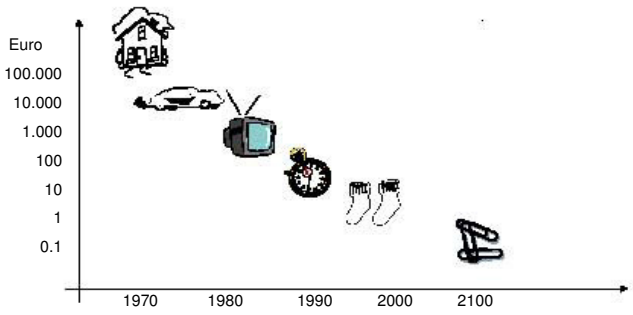




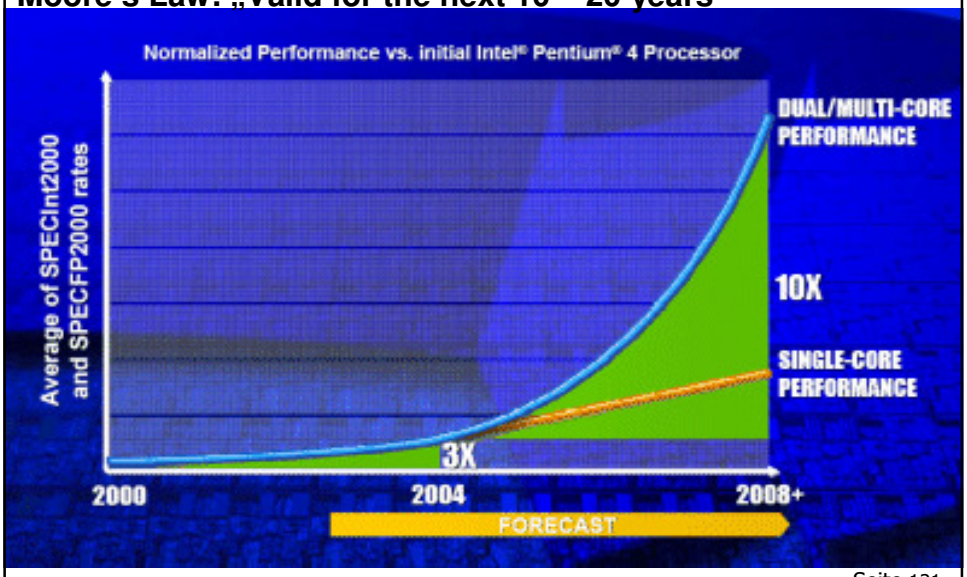
Development computing and storage power



Development of prices for RAM and harddisk storage



Moore‘s Law: „Valid for the next 10 – 20 years“



http://www.heise.de/newsticker/meldung/54021

ENIAC vs Intel Core Duo Chip

DOWNSIZING AND UPGRADING

The inception of computing inspired a remarkable race for faster, smaller, lighter, cheaper hardware.

	ENIAC	Intel Core Duo chip
Debut	1946	2006
Performance	5,000 addition problems/sec	21.6 billion ops/sec
Power use	170,000 watts	31 watts max
Weight	28 tons	negligible
Size	80' w x 8' h	90.3 sq. mm.
What's inside	17,840 vacuum tubes	151.6 M transistors
Cost	$487,000	$637

Potential of Information Technology: Trends in Computing

Moore's Law still going strong

- Smaller, more computing devices every 18 months

Miniaturization continues

- 100Gb per square inch hard disk density
- 128MB memory on a single chip

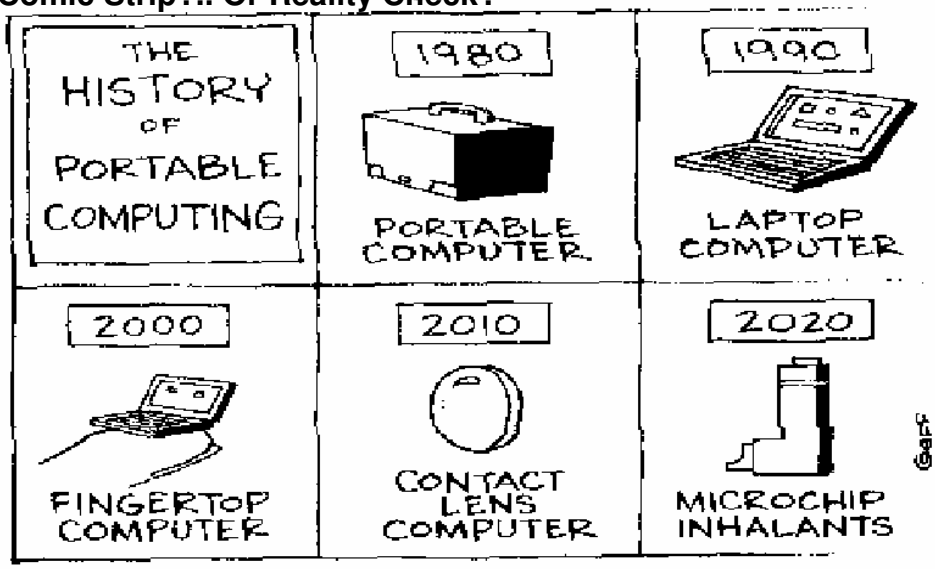
Dramatic innovation towards longer battery time

- Low power CPUs from Intel, Transmeta, AMD
- Fuel Cell battery (1 month cell phone usage) in the horizon

Smaller, lighter PC, PDA, phone designs enabling new networking scenarios

- TVs on Cell phones, Wearable computers, digital cash, eBooks

Comic Strip?.. Or Reality Check?

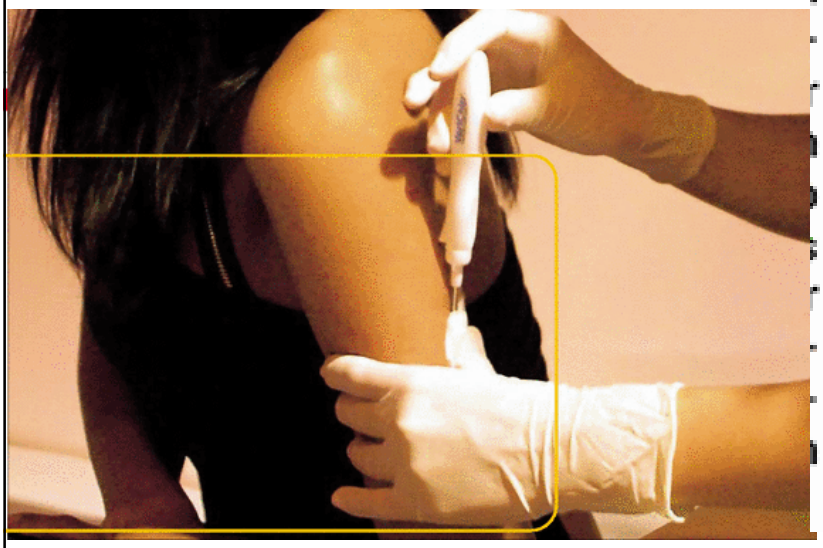


RFID: VeriChip

- The tech: Applied Digital subsidiary VeriChip's VeriMed system implants rice-size radio frequency identification (RFID) chips under a patient's skin.
- When a patient carrying the chip arrives in a VeriMed-equipped emergency room, a scanner reads the chip, enabling access to the patient's medical history.
- The company says the chips are implanted voluntarily, usually in seniors who can no longer speak well enough to communicate.
- A VeriMed spokesperson says one hospital is using the chip now, and more than 60 others have agreed to implement it.
- VeriChip also offers a bracelet (instead of skin implant) tracking system designed to reduce baby-snatching and switched-at-birth incidents in maternity wards.
- Why it's important: When a patient doesn't know or can't relate his medical history, it can hamper treatment. In December, VeriChip filed go public and to spin out from Applied Digital.

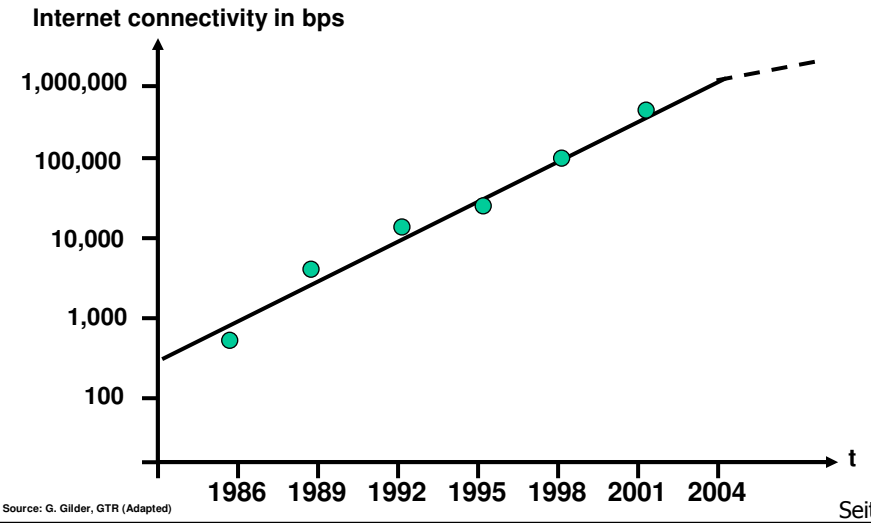
RFID: VeriChip

RDIF: VeriChip



Quelle: Wirtschaftswoche

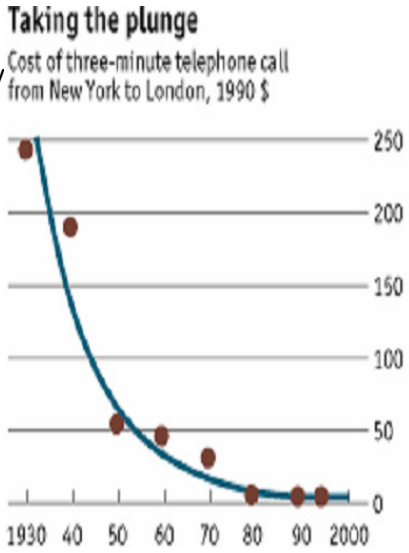
Gilder's Law: "Bandwidth access doubles every 6-12 months"



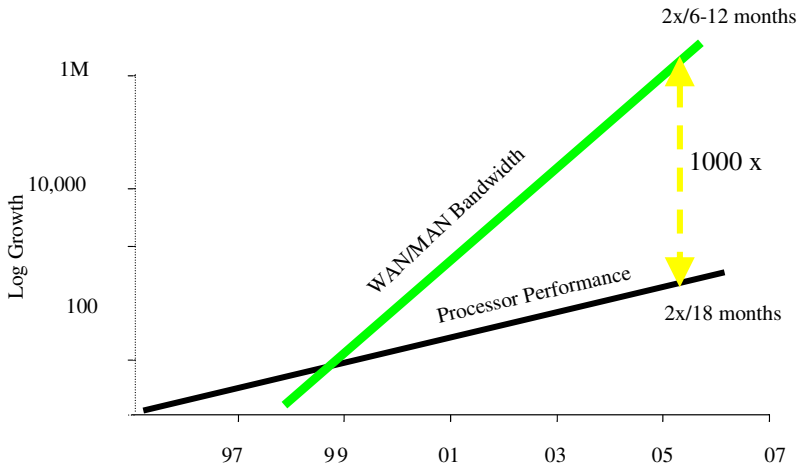
Source: G. Gilder, GTR (Adapted)

Gilder's Law: "Bandwidth access doubles every 6-12 months"

- Doubling of communications power every six months
- Due to advances in fiber-optic network technologies
- The cost of transmitting a trillion bits of information from Boston to Los Angeles has fallen from $150,000 in 1970 to 12 cents in 2000



Gilder's and Moore's law



Source: Greg Papadopoulos, Sun Microsystems

Today's Bandwidth

Seite 131

Tomorrow's Bandwidth

Seite 132

Metcalfe's Law

What is Metcalfe's Law and why is it important?

- **Networks (whether of telephones, computers, or people) dramatically increase in value with each additional node or user. The utility of such a network can be valued as the square of the number of its users (Robert Metcalf)**
- **This is important to keep in mind because once a technology standard has achieved critical mass, its value to everyone multiplies exponentially**
- **Remember that the Internet's communications protocols reached critical mass in 1993**

Metcalfe's Law

Metcalfe's Law: The Value of a network scales as the square of the number of those connected to it.

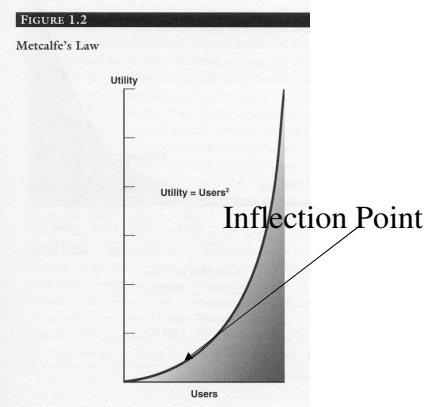
$$\text{Value} = n^2$$

- **Value: economic, personal, societal, (…)**
- **Double the network = four times the value!**
- **"Network economics"**
- **Also known as "Network externalities"**
- **Bob Metcalf – inventor of ethernet, 3Com founder**

Metcalfe's Law

"The power of a network grows exponentially every time the size of the network doubles"

- Critical mass is required for value to expand exponentially
- Speed to critical mass depends on cost to the customer
- Once critical mass is reached, cost can be increased to reflect value
- The larger the number of people using a technology or sharing a dream, the more they can accomplish (just look at the Internet)



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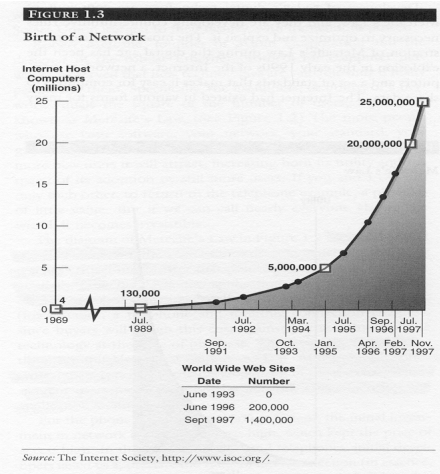
Metcalfe's Law

Development of the Internet as an Example of Metcalf's Law

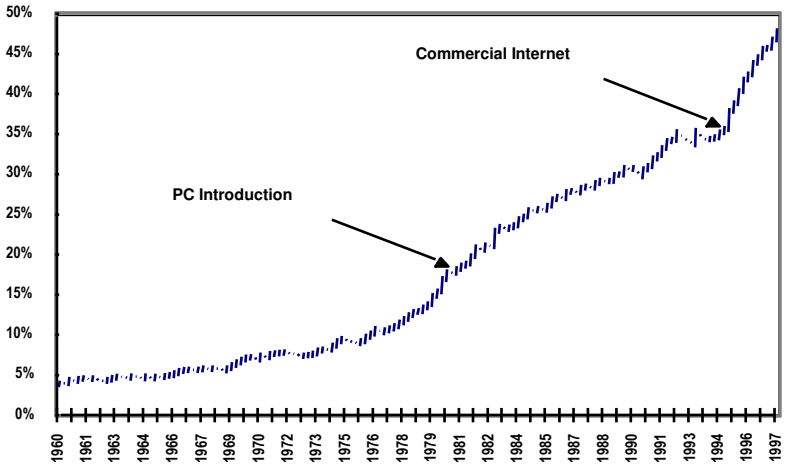
- Internet reached critical mass in 1993
- Internet users continue to grow to 100+ million in 1999
- Internet users continue to grow to 500+ million in 2002
- Operating Websites exceed 6 million in 1999.
- Industries created for other software, audio, video, 3-D modeling, web site developing, hosting, management



Seite 136

Internet revolution fuelled corporate tech spending…

US-based IT spending as a share of business capital equipment spending



Note: Information technology spending includes purchases of information processing and related equipment (including office, computing, and accounting machinery), computers and peripheral equipment, communication equipment, instruments, and photocopy and related equipment.

Source: U.S. Department of Commerce

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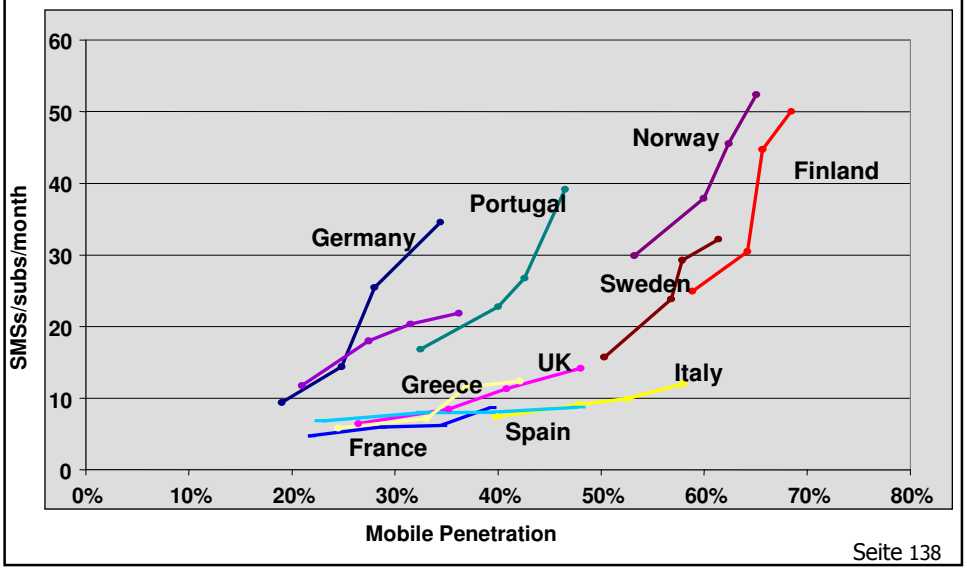
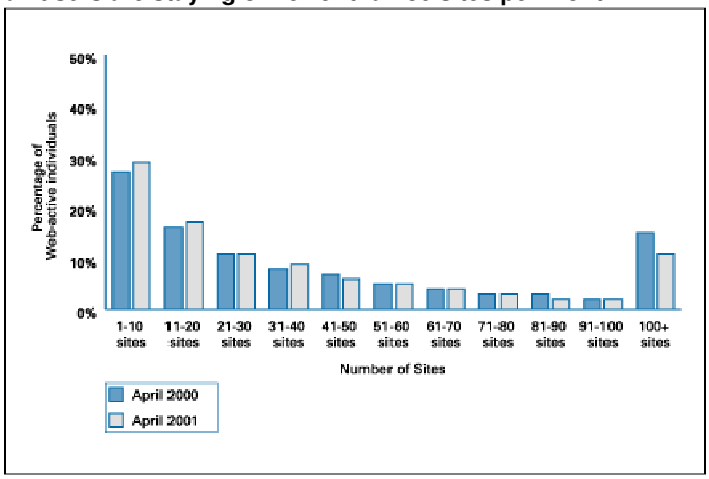
Metcalfe's law in action – SMS growth in Europe



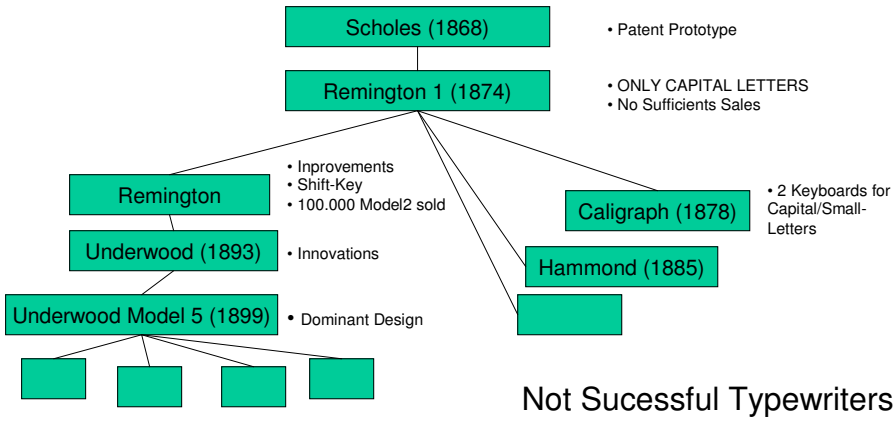
Seite 138

The Network Effect: Most Consumers Visited Few Sites

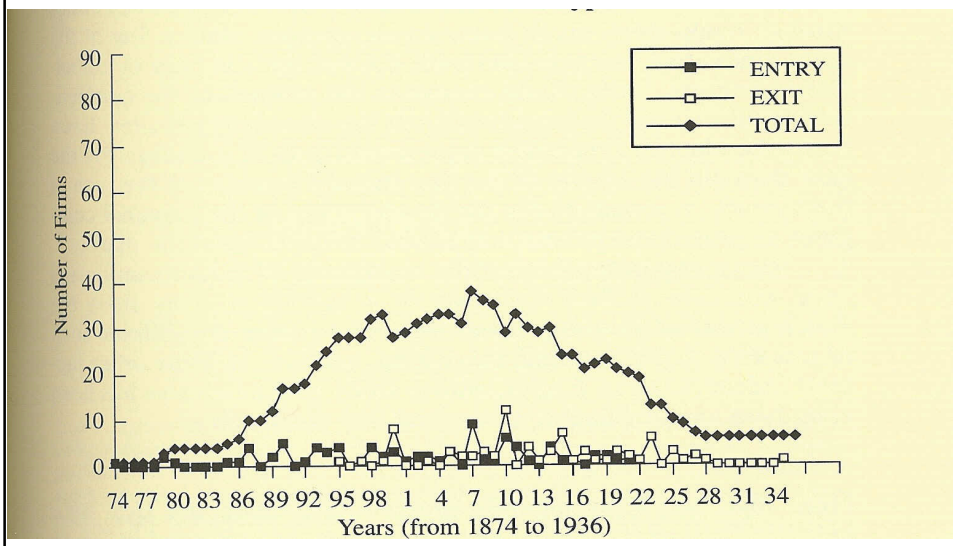
Nearly 30% of users spend their time on less than 10 sites a month.
57% of all users are staying on fewer than 30 sites per month.



Example of the Network Effect: Typewriters



Amount of Companies Selling Typewriters in the USA



Source: Utterback, 1994, S.33

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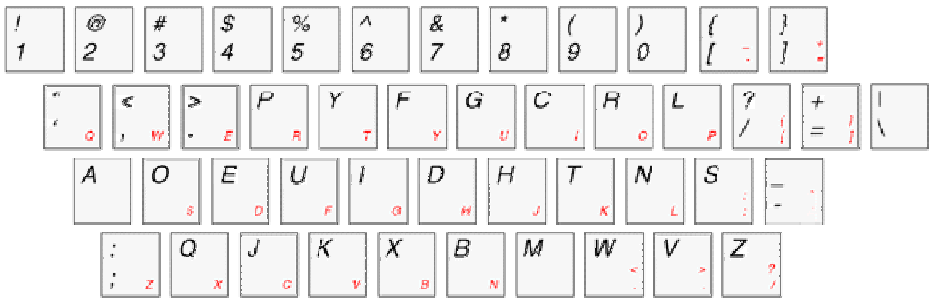
Dvorak Keyboard

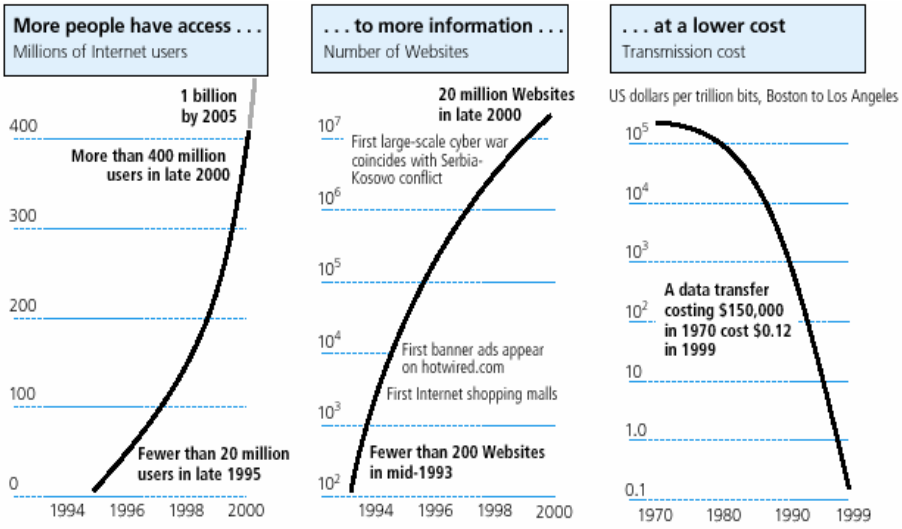


Dvorak Keyboard Layout

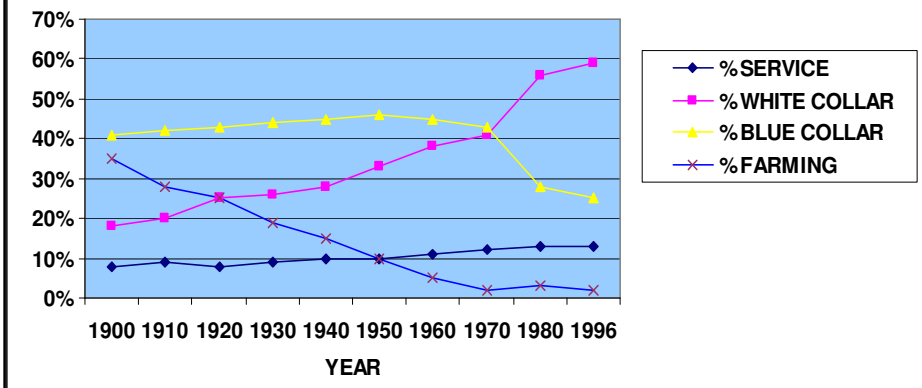
Seite 142

New Standard Keyboards

More information at a lower cost



USA Labor Force Composition 1900 - 1996



Source: Laudon & Laudon 1999

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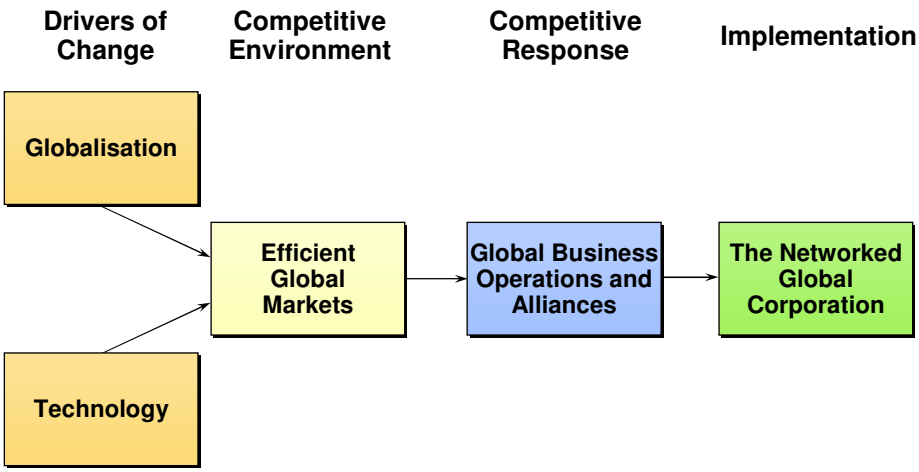
IT and Globalization



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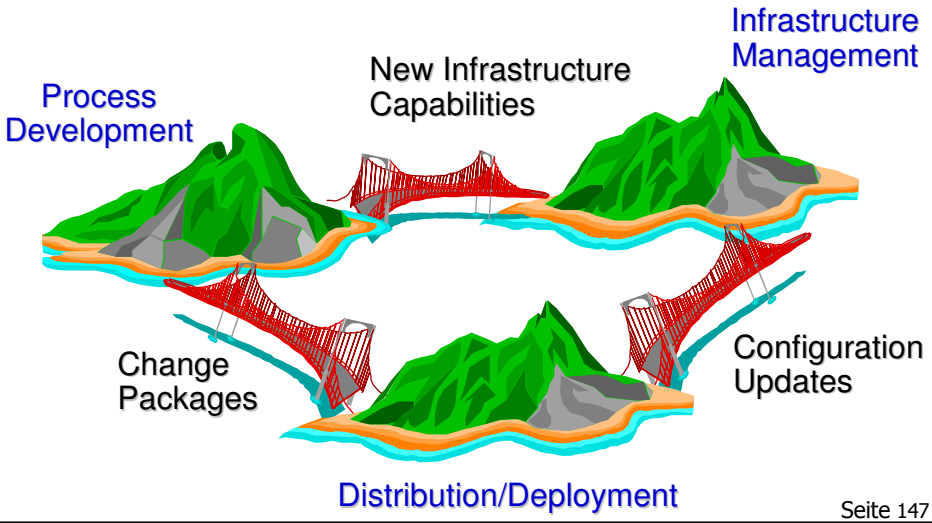
Continuous Change Management



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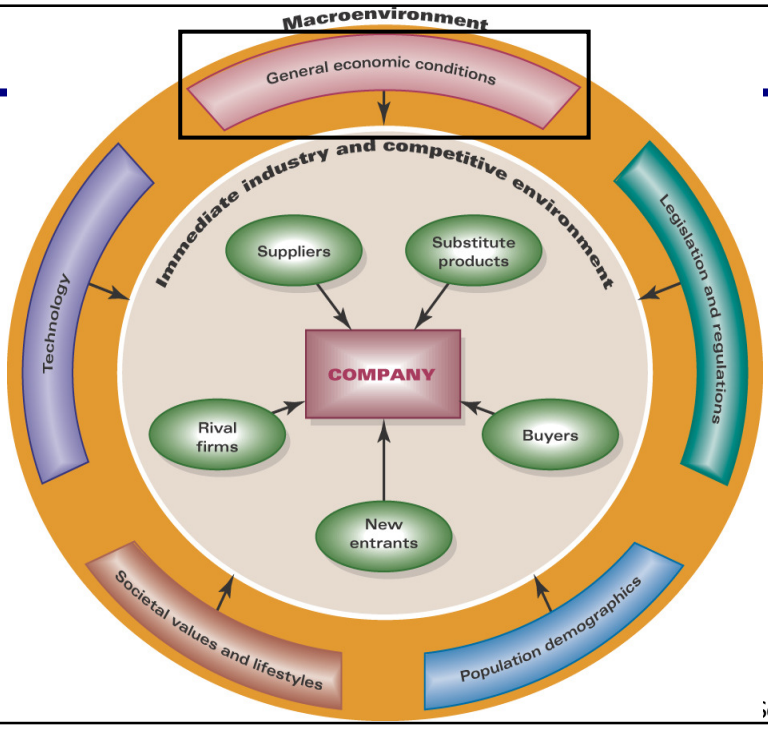

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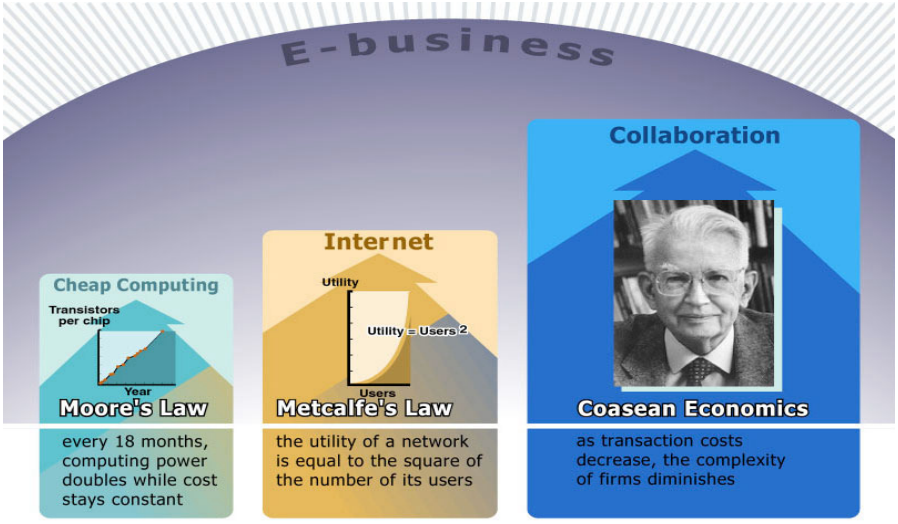
Foundation for a New Economy



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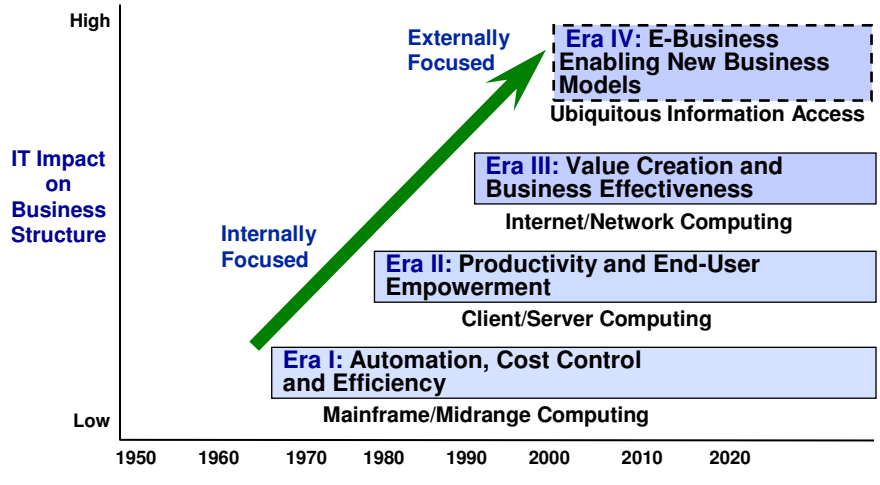
Evolving Information Technology Cycles



Source: GartnerGroup, 2000

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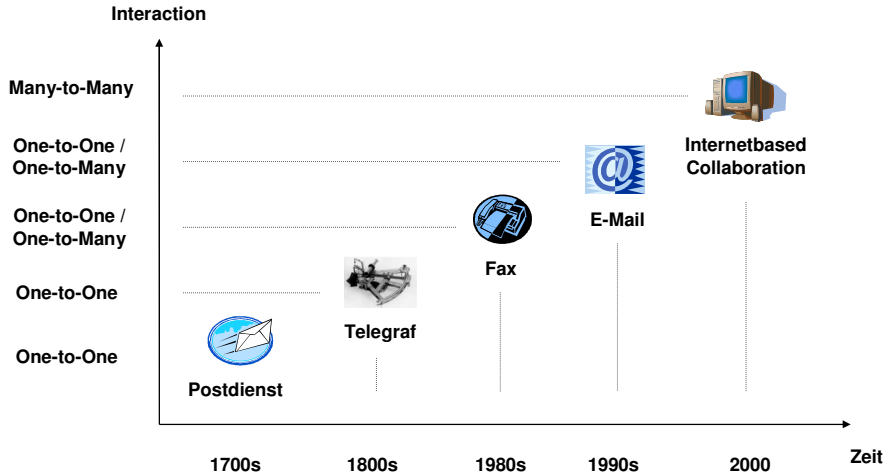
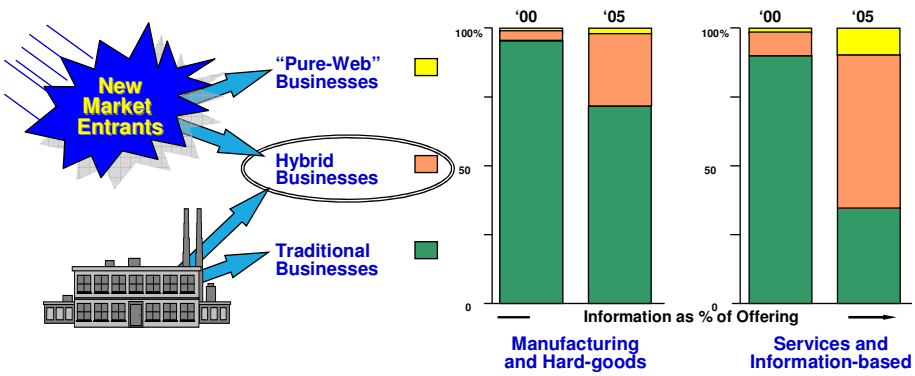
Evolving Information Technologies



A New Economy Emerges Brick & Mortar vs. Hybrid vs. "Pure-Web" E-Businesses

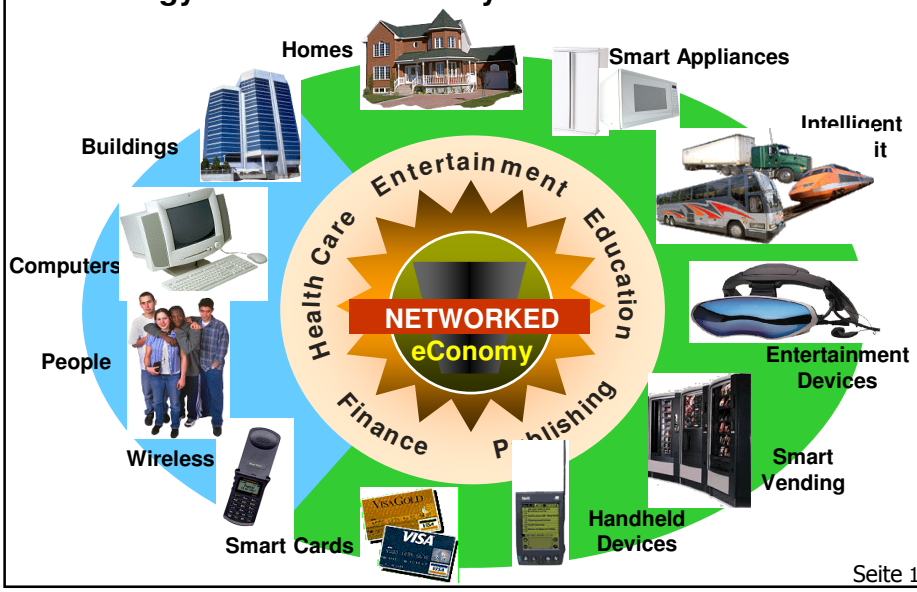


"Four out of 10 global CEOs say more than 10 percent of their companies' revenue will come from e-business in the next five years." 1999 PricewaterhouseCoopers World Economic Forum, Davos, Switzerland

Source: GartnerGroup, 2000

Unterschiede old and new economy

Technology Fuels the Economy



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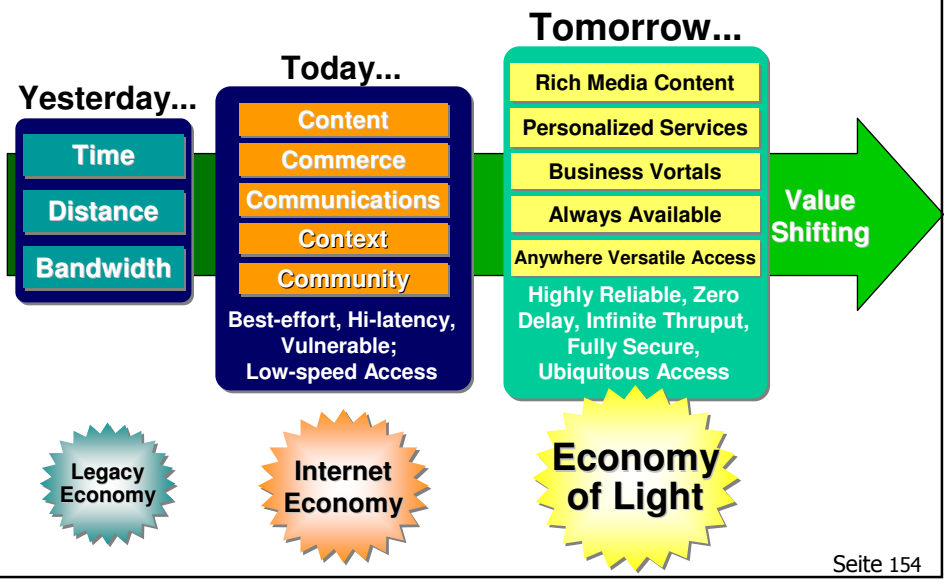
The Shifting Value of Communication Services



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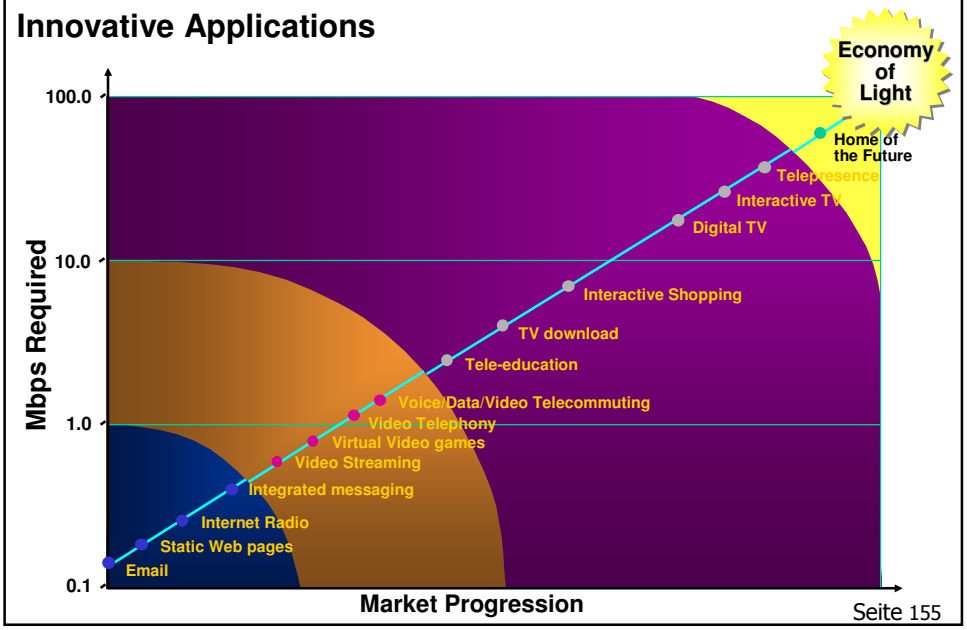
Innovative Applications



The New Economy

- Substantial increase in buying power
- A greater variety of goods and services
- A greater amount of information about practically anything
- A greater ease in interacting and placing and receiving orders
- An ability to compare notes on products and services
- Websites can provide companies with powerful new information and sales channels.
- Companies can collect fuller and richer information about markets, customers, prospects and competitors.
- Companies can facilitate and speed up communications among employees.
- Companies can have 2-way communication with customers and prospects
- Companies can send ads, coupons, samples, information to targeted customers.
- Companies can customize offerings and services to individual customers.
- The Internet can be used as a communication channel for purchasing, training, and recruiting.
- Companies can improve logistics and operations for cost savings while improving accuracy and service quality.

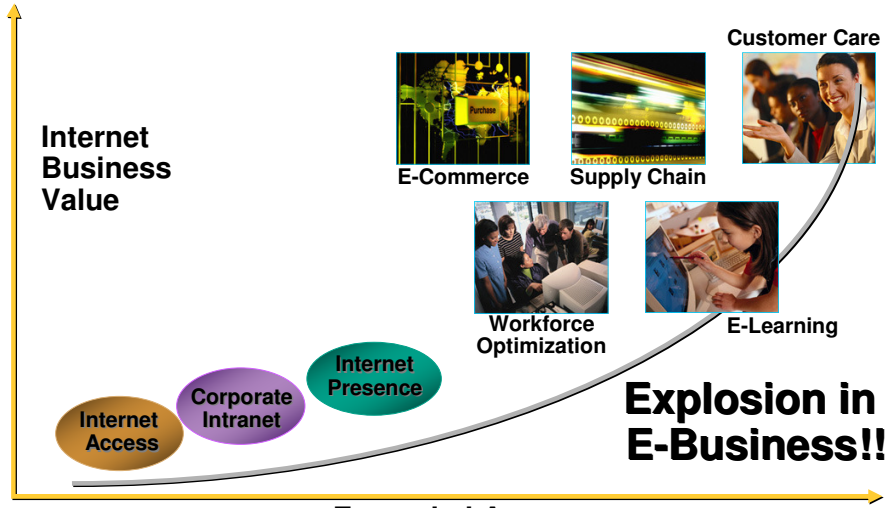
Definition of E-Business

- ***E-Business*** = the practice of performing & coordinating business processes through the extensive use of information technology (IT)
  - IT = computer and communication technologies
  - E-business does NOT equal the Internet, though the growth of the Internet acted as a very powerful catalyst
- E-Business is the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners.
  - Supply Chain
  - Selling Chain Management
  - e-business Transformation
  - Enterprise Resource Planning
  - Customer Relationship Management
  - Extranets and intranets

Definition of E-Commerce

- E-Commerce is the buying and selling of goods and services on the Internet:
  - e-tailing or "virtual storefronts" on websites with online catalogs, sometimes gathered into a "virtual mall"
  - The gathering and use of demographic data through web contacts
  - Electronic Data Interchange (EDI) the Business-to-Business exchange of data
  - Business-to-Business buying and selling
  - Security
- => E-commerce does not replace or itself radically alter enterprise commercial strategy, but it does deepen and strengthen it.

The E-Business Challenge



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Rules of Business Have Not Changed

- All new businesses must fill a need
- All businesses must make money or disappear
- All businesses must differentiate themselves from their competitors and it must be perceived by the customer
- All businesses must be capitalized properly
- All businesses must have good management/employees
- So what is new???? Nothing!!!!!

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Products are getting more and more identical

Source: w&v Kalender 2000b

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The competition is becoming always bigger

Source: w&v Kalender 2000b

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The Fight for customers gets more and more difficult

Source: w&v Kalender 2000b

But: New Opportunities emerge

B2B providers						**Ariba and Freemarkets**
Business reengineering verticals					**eBay**	
Online commerce companies				**Amazon.com**		
Content and aggregation providers			**America Online and Yahoo!**			
Internet software providers		**Netscape**				
Internet Infrastructure	**Cisco and UUNet**					
	1994	**1995**	**1996**	**1997**	**1998**	**1999 and 2000**

A Success Story: eBay

- In 1995 Pierre Omidyar decided to use the Web pages that came as a part of his USD 30-a-month Internet service
- The idea was to improve upon the online classifieds for selling personal items
- With a little code, he developed a simple auction mechanism that would spare the seller from having to choose among multiple interested buyers
- The code did the work, the space on the Web server came with his account so the whole thing cost him nothing and the service is offered for free
- In 1995, he sent an announcement of his free service to the then-center of the Webdom, the National Center for Supercomputing Applications “What's New” Web page
- At the end of 1995, his Web page was getting a couple of thousands hits a day

A Success Story: eBay

- His Internet Service Provider was not happy about this (his page was using a lot of CPU cycles) and raised Omidyar's monthly fee from USD 30 to USD 250
- Omidyar in return asked sellers to pay a small fee for items sold
- This relied upon the honesty of the seller
- The checks came in volume
- In the first month he covered the 250 USD bill for his Internet Service
- Afterwards the increase in revenues were exponential: In month two, USD 1000, in month three, USD 2000, in month four, USD 5000 and so on
- When his ISP told him that the traffic his page was attracting was too much for its servers, he installed his own server on ISP's premises

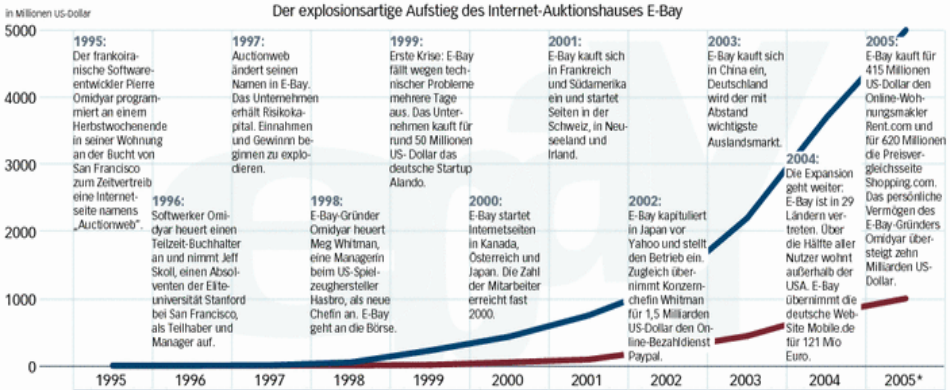
A Success Story: eBay

- In mid 1996, Omidyar left his day time job and founded the eBay company
- In the fall of 1996 eBay's revenues were USD 400,000 per month where its expenses were USD 200,000
- In 1997, the venture capital firm Benchmark invested USD 6.7 Million in eBay when eBay's valuation was put at USD 20 Million
- In September 1998, after the first day of public trading, eBay's capitalization was USD 2 Billion
- Three months later the stock has gained more than 1300 percent value
- In June 1999, the company has valued at more than USD 21 Billion **eBay, one of the most successful examples of e-commerce, has been flourishing ever since**
- During December 2001 quarter, revenue jumped 64% to USD 219.4 million and net income to 8%
- Furthermore, eBay appears to be in a better shape operationally and it is expected to grow by 52% a year over the next five years

New Opportunities emerge: Example E-Bay

Von null auf eine Milliarde

Der explosionsartige Aufstieg des Internet-Auktionshauses E-Bay



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005*
Umsatz (in US-Dollar):	0	400 000	5,7 Mio.	47,4 Mio.	225 Mio.	431 Mio.	749 Mio.	1,2 Mrd.	2,2 Mrd.	3,3 Mrd.	5,0 Mrd.
Gewinn (in US-Dollar):	0	100 000	900 000	2,4 Mio.	10,8 Mio.	48,3 Mio.	90,4 Mio.	250 Mio.	442 Mio.	778 Mio.	1,0 Mrd.
Mitarbeiter:	1	3	76	138	1212	1927	2560	4000	6200	8100	> 10 000

* Schätzung; Quelle: Hoover's, Ebay

Wirtschafts Woche

Many Products and Services Capitalize on Internet Properties

- Some new products and services are unique to the Internet (e.g. search engines like google).
- Other products use the Internet as a new distribution channel +add unique technology-enabled services (books).
- With the Internet's properties of market deconstruction, customer control, and other e-marketing trends:
  - Many challenges
  - A plethora of new opportunities
- The success of Classmates.com demonstrates how a new and purely online product can use the Internet's properties to build a successful brand.

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New Opportunities emerge: www.munchahouse.com

- **www.munchahouse.com:**
  - **Offers a wide range of products that Nepalis living overseas can send to individuals back home.**
  - **Customers pay on the sites by providing their credit card numbers using a secure server.**

⇒ **These are all crucial marketing decisions.**

- **If the Muncha House marketer had targeted a domestic home market, his strategic situation would be completely different.**
- **One of the biggest differences between developed countries and emerging economies = the limited use and acceptance of credit cards in underdeveloped countries.**

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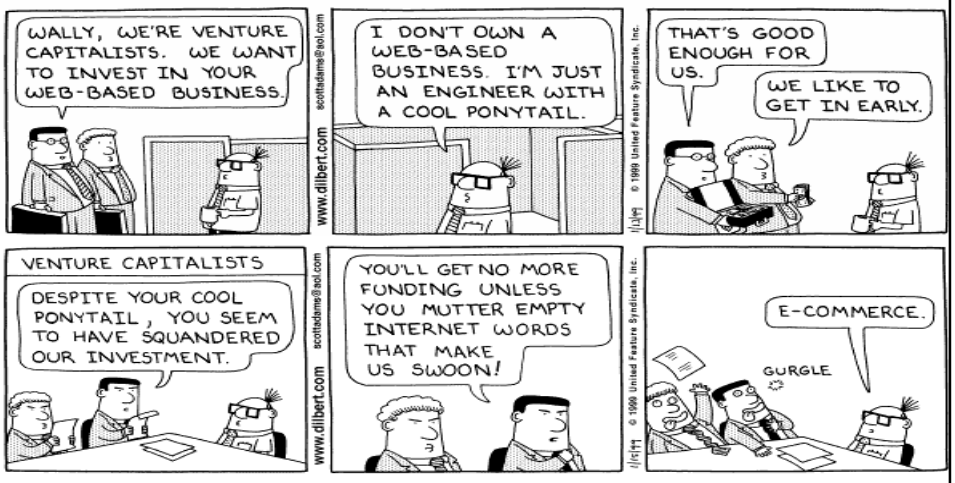
The Mystery of eCommerce and eBusiness: The Hype, the Reality and the Dream!



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Tough Times

- The first generation of e-business was like a gold rush = creation of a Web presence and experimentation.
- Results:
  - Huge sales and market share
  - BUT little was brought to the bottom line and profit was negative
  - Since January 2000, however, over 500 Internet firms have shut down in the U.S. alone (e.g: CDNow)
- The "*trough of disillusion*" is based 30% on the technology recession and 70% on disappointment with e-business results.
- Marketers return to their traditional roots and rely on well-grounded strategy and sound marketing practices.
- During the dot-com shakeout from 2000-2002, there was much industry consolidation:
  - Some firms, such as Levi Strauss, stopped selling online = not efficient + created *channel conflict*.
  - Other firms merged,

  ⇒ E.g. e-business firm took over a traditional firm = AOL purchased Time-Warner.

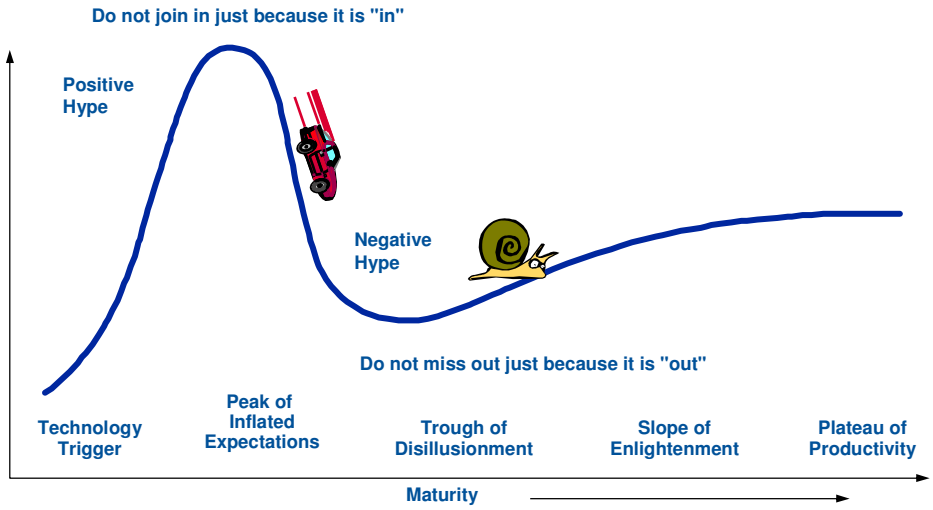
Market Capitalization of selected stocks 02/2000 bis 02/2002 in USD

	2000	2003	Change
• DaimlerChrysler:	77 Mrd.	48 Mrd.	⇨ -38%
• Cisco Systems:	345 Mrd.	161 Mrd.	⇨ -52%
• AOL:	131 Mrd.	131 Mrd.	⇨ +-0%
• Yahoo:	91 Mrd.	12 Mrd.	⇨ -90%
• Amazon:	21 Mrd.	6 Mrd.	⇨ -71%
• Sun:	113 Mrd.	40 Mrd.	⇨ -65%

What will the future be?

- Gartner Group predicts that a *true* e-business model will emerge, and by 2008 the "e" will be dropped, making electronic business just part of the way things are done.
- Some say that "E-business has become just business. E-commerce has become just commerce. The new economy has become just the economy (Aronica and Fingar 2001).
- " Others say that this is far from the truth—for them, e-business will always have its own models, concepts, and practices.
- Charles Schwab has already gone through the entire cycle allowing e.Schwab.com to cannibalize the larger brick-and-mortar securities firm in 1998.

The "Hype Cycle" from Gartner



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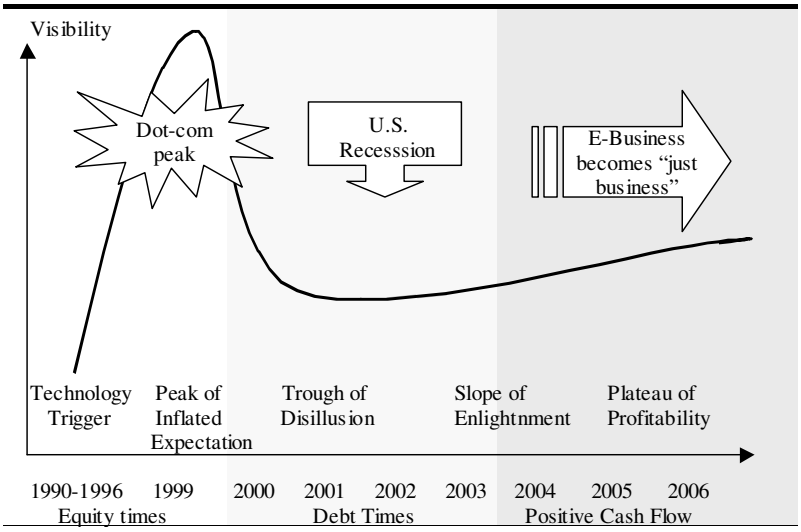
There is Hope After the Trough of Disillusion



Source: Adapted from Raskino and Andren of Gartner Research (2001)

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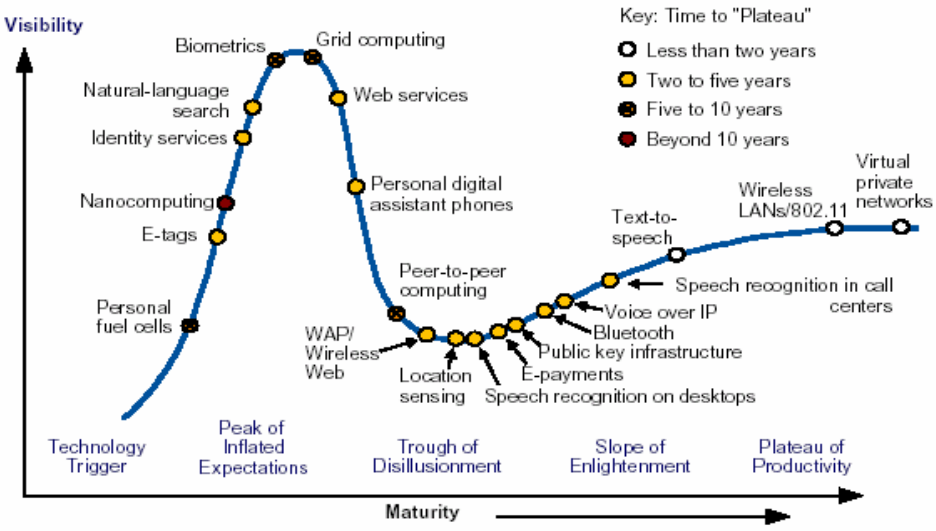
The 2002 Hype Cycle of Emerging Technologies



Source: Gartner Group "2002 Emerging Technologies Hype Cycle: Trough to Plateau", Fenn, Jackie & Linden, Alexander, May 2002 (COM-16-6573). Used with permission.

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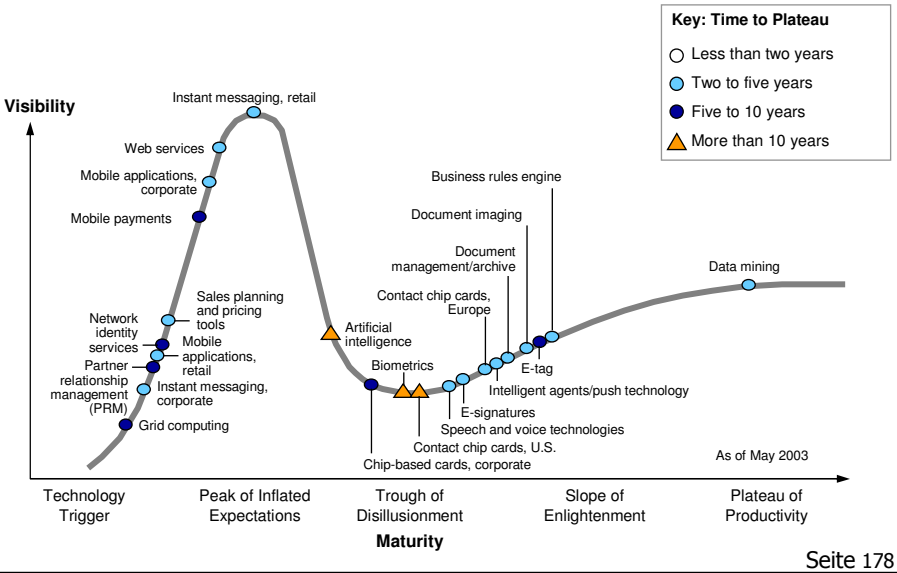
Course Economics and Business Management
Chapter 1 Introduction – Understanding the contemporary economics and business environment

Emerging technologies hype cycle (2003)



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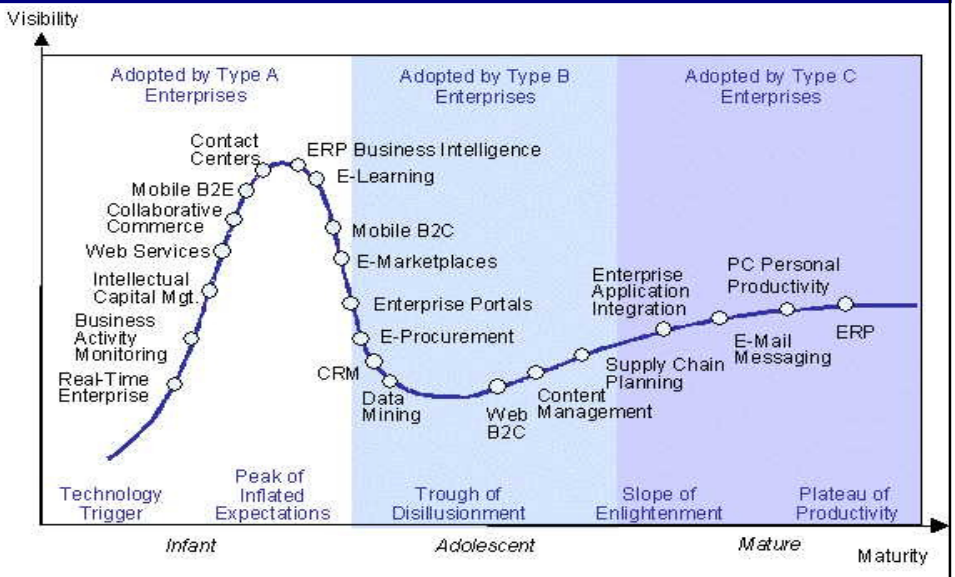
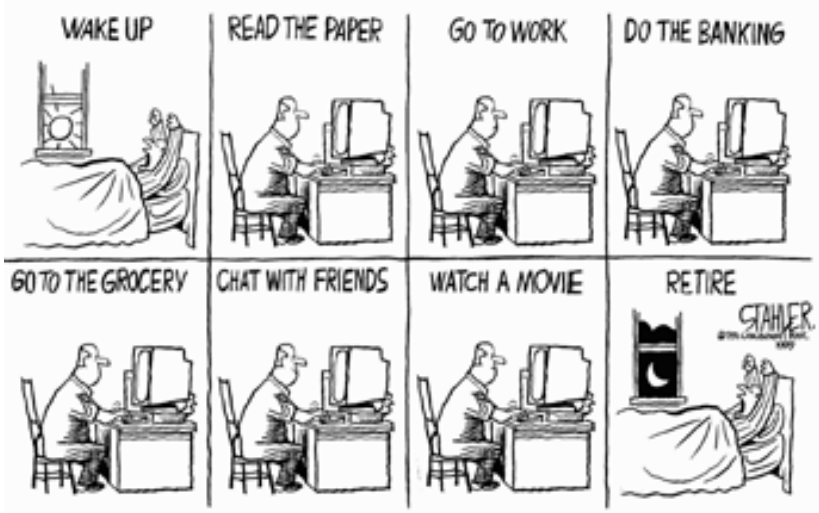


Source: Gartner Group "Reassess Your Strategic Business Capability IT Portfolio", M. Raskino, C. Tornbohm, Feb2002 (DF-15-1808). Used with permission.

Seite 179

Will the Internet live up to its Expectations? Do we want it to?



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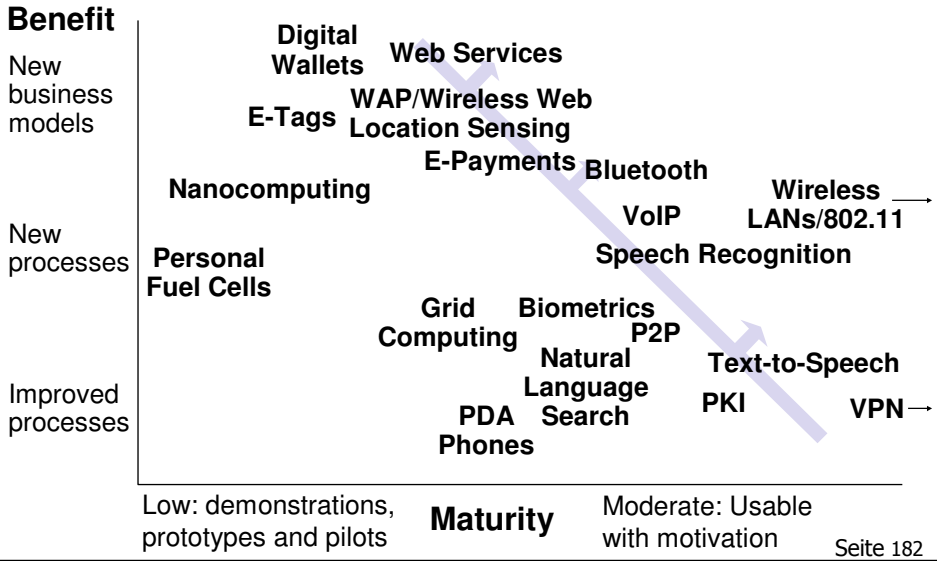
The Internet Has Eliminated Traditional Boundaries

- First, **globalization is automatic. "Location, location, location" is no longer the mantra.**
- Second, **it's available 24 hours a day/7 days a week to everyone with a phone and an Internet connection.**
- Third, **even the most controlling governments find it difficult to do so.**

Radar Screen



Technologies at Different Speeds

Biometrics
"Autonomic Computing"
Desktop Videoconferencing
DNA-Computing
Fiber optics
Tele-Immersion
Holographic Storage
Nano-Computing
Internet
Quantum-Decryption
"Intelligent Agents"
E-mail
Machine Translation
Intelligent Clothes
Handwriting Recognition
Smart Dust
Speech Recognition

- One to two decades from trigger to plateau
- Science-fiction-like fascination
- Inherent complexity, business implications.
- Reliance on certain infrastructure, skills

Long-fuse technologies

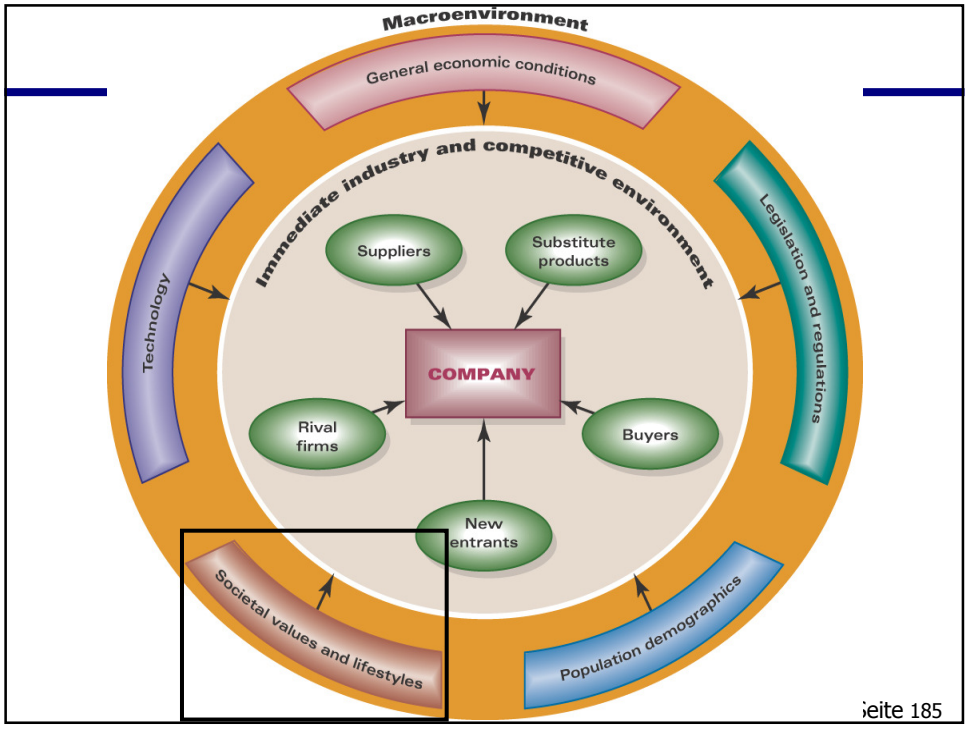
"Fast Track" Technologies

- Two to four years from trigger to plateau
- Performance peaks early
- Uses current infrastructure/standards
- Easy to use
- Vendor support

IM, SMS, USB Flash Cards.

Would you have invested?

Microsoft Corporation, 1978



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The Law of Disruption

What is the Law of Disruption and why is it important?

- **It states that where social systems change incrementally, technology changes exponentially and as the gap between the two increases, so does the potential for non-continuous, disruptive, indeed revolutionary change**
- **Until a critical mass of users is reached, a change in technology only affects the technology. Once critical mass is attained, social, political, and economic systems change**
- **The authors believe that the velocity & trajectory of the digital revolution will create more frequent and more disruptive ripples to virtually everything than any previous technology changes**
- **Killer apps result from the combination of Moore's & Metcalf's Laws & are examples of the Law of Disruption!**

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The Law of Disruption

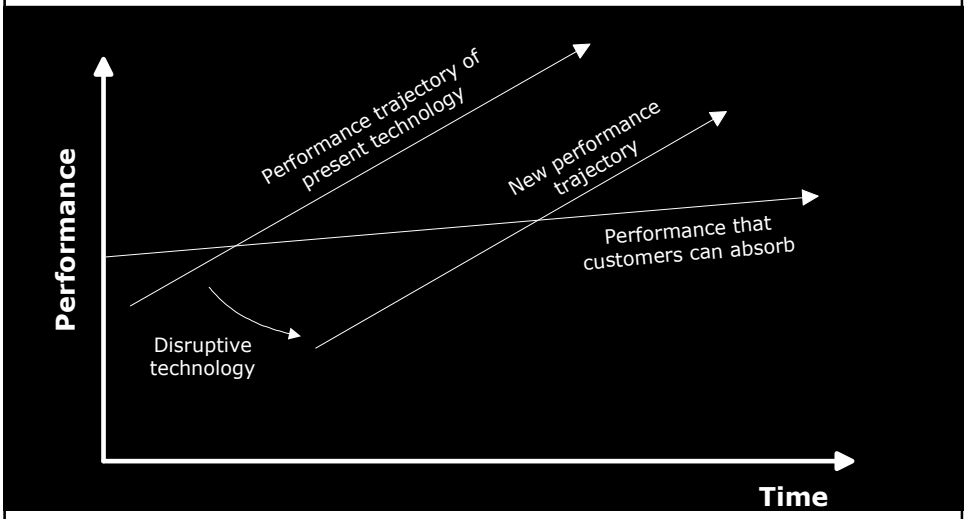
Easy, inexpensive, and quick access to digital information transforms:

- **Economies**
- **Societies**
- **Governments**
- **Businesses**

Digital information enhances economies through:

- **more efficient markets,**
- **more jobs,**
- **information access,**
- **communication globalization,**
- **lower barriers to foreign trade and investment, and more.**

The Law of Disruption

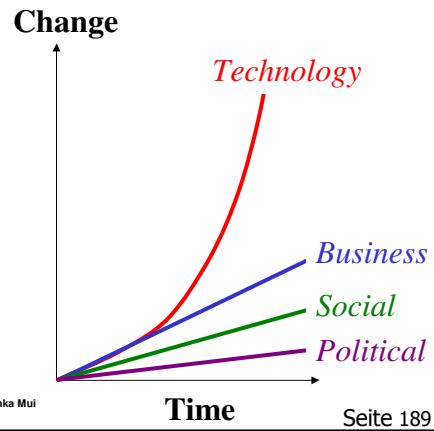


The Law of Disruption

Example: Law of Disruption

All Institutions are falling behind the pace of technology changes

- **Social, political, and economic systems change incrementally, but technology changes exponentially**
- **Large differences between technology and other systems create disruption**
- **Learning-on-demand and Life-long learning is the key to individual survival in this world of change**

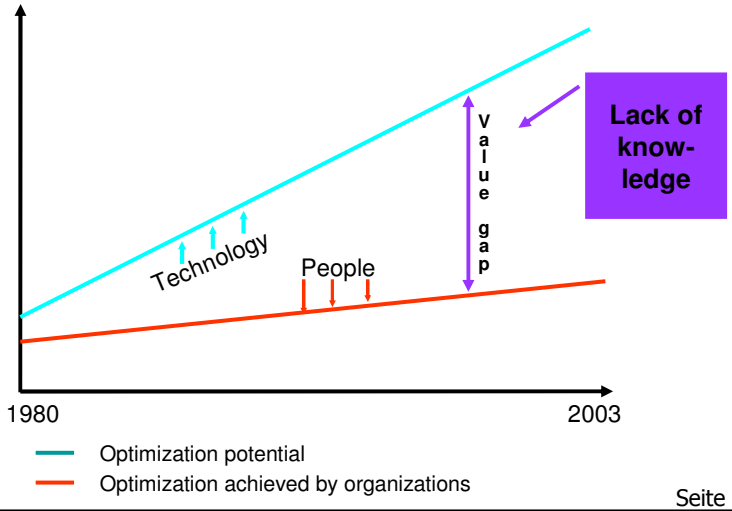


Source: Unleashing the Killer App : Digital Strategies for Market Dominance: Larry Downes, Chunka Mui
http://www.killer-apps.com/

Disruptive Innovation!

- **There's one in YOUR future!!**
- **And another one right behind it!**

The Law of Disruption



The Law of Disruption – Real Life Examples for Strategic Management

http://www.moviebeam.com/opencms/opencms/Pages/

http://t-online-vision.de/

Blurb (http://www.blurb.com/) is showing off its platform for creating and marketing bookstore-quality books

The Law of Disruption: Uneven impact of the Internet across the globe:

- 605 million users connected to the Internet worldwide = 8.5% of the global population (http://www.nua.ie/surveys/how_many_online/)
- Developed nations = 15% of the world's population = 88% of all Internet users
- U.S. Internet users = 182 million = 64% of the population
- Indigenous peoples in remote locations gaining health, legal, and other advice, or selling native products using the Internet

The Law of Disruption: Undesirable changes created by a networked world

Societies change as global communities based on interests form,

Worldwide information access slowly decreases cultural and language differences,

Easy computer networking = work and home boundaries are blurring = more convenient work = encourage more workaholism and less time with family.

Class divisions will grow, preventing the upward mobility of people on lower socioeconomic levels and even entire developing countries,

Digital divide: Internet adoption occurs when folks have:

- **Enough money to buy a computer,**
- **The literacy to read what is on Web pages,**
- **The education to be motivated to do it.**
- **http://laptop.media.mit.edu/**

The Digital Divide

The digital divide raises challenging questions for global policy makers, international businesses, and local entrepreneurs.

What responsibilities do these different groups have for narrowing the gap between those that have and those that don't have access to technology?

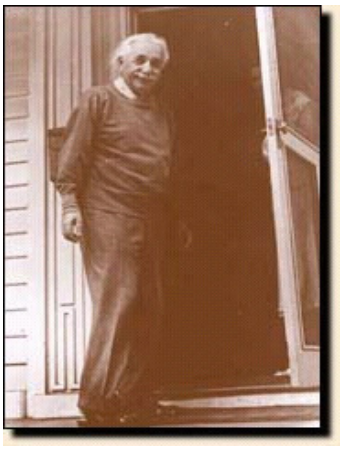
Global policy makers at the United Nations, the World Bank, and the G8 believe the answer is yes.

Some e-marketers are successfully helping to close the digital divide.

www.villageleap.com, the Robib village website (Cambodia):

- **Women market traditional Cambodian silk weavings to overseas buyers,**
- **Money is reinvested in the local pig farm,**
- **Also allow villagers to send and receive medical information = reduce the number of two hour road to the nearest hospital.**

Change Our Thinking



"Everything has changed but our ways of thinking, and if these do not change we drift toward unparalleled catastrophe."

Albert Einstein

Example for change: Where is Eric?

Solution Learning: The Killer Application – Learn more, learn fast, use technology

Is (E-)Learning the "Killer Application" of the next generation of computing and can it help against the law of disruption?

Evolution of Computing

First we thought the PC was a calculator

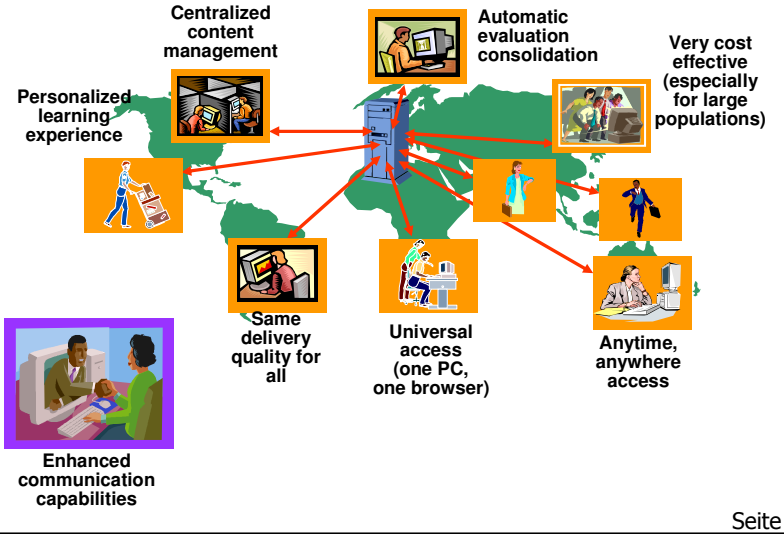
Then we thought it was a typewriter

With multimedia we thought that it was a TV

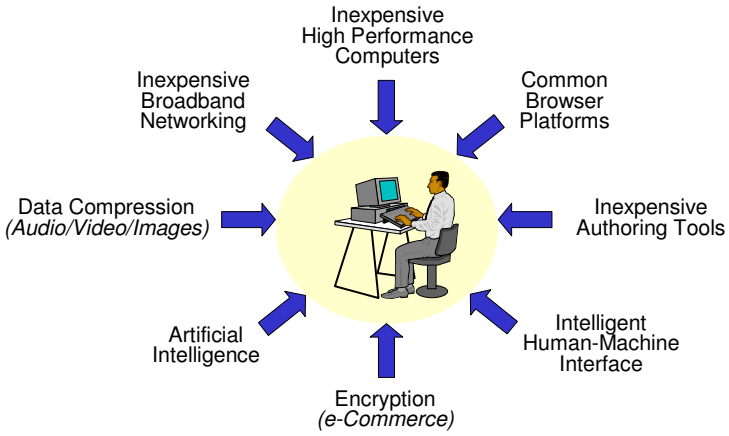
Now, with the World Wide Web
… we've realized it's a brochure

Source: Douglas Adams, Author Hitchhiker's Guide to the Galaxy

E-Learning: A Revolutionary Enabler for Knowledge Transfer



Technologies for E-Learning



Relentlessly modern technology is changing the way we:

Labor Live Love and Learn

- Inspire new ways of teaching and learning
- Extend learning beyond the classroom
- Bridge learning between school and home
- Write more and produce higher-quality work
- Spend more time using computers for homework
- Conduct more research and collaborate more often with others
- Have greater confidence in their technology skills

Seite 201

New learning environments through evolving IT Cycles

Classroom

Learning environments adapting to the learning style and capabilities of the learners

Individual

The digital economy is changing the focus in learning and education from the classroom to the individual (Desktop)

Seite 202

Enhanced learning environments

Passive Learning

Lectures (Video)
Reading (Audio)
Example Database
Videos (On-demand)
Animations (On-demand)

Collaborative Learning

Design Teams
Study Groups
Chat Rooms
Virtual Labs
Remote Labs
Video Conferencing
Discussion Groups

Active Learning

Tutored Homework
Interactive Simulations
Real Design Tools

Assessment

Learner Preferences
Construction Monitoring

Enhanced learning environments

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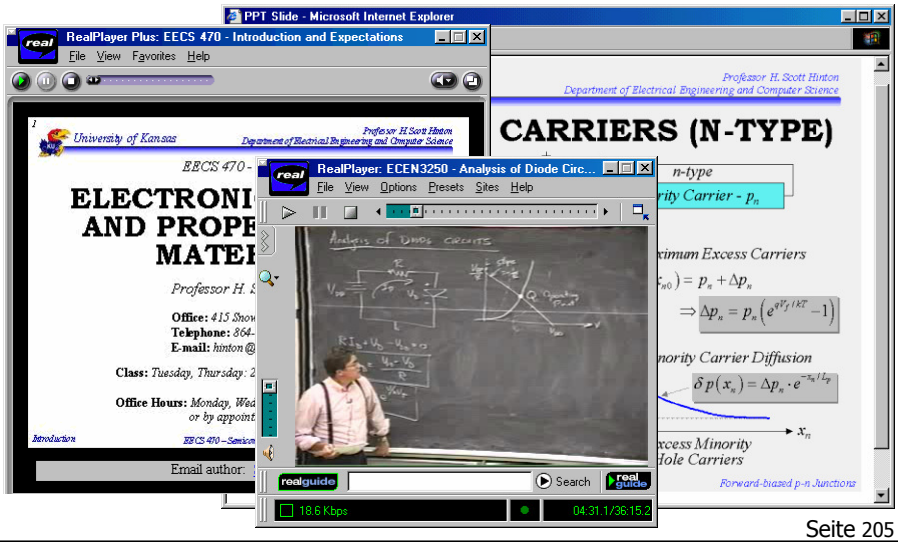
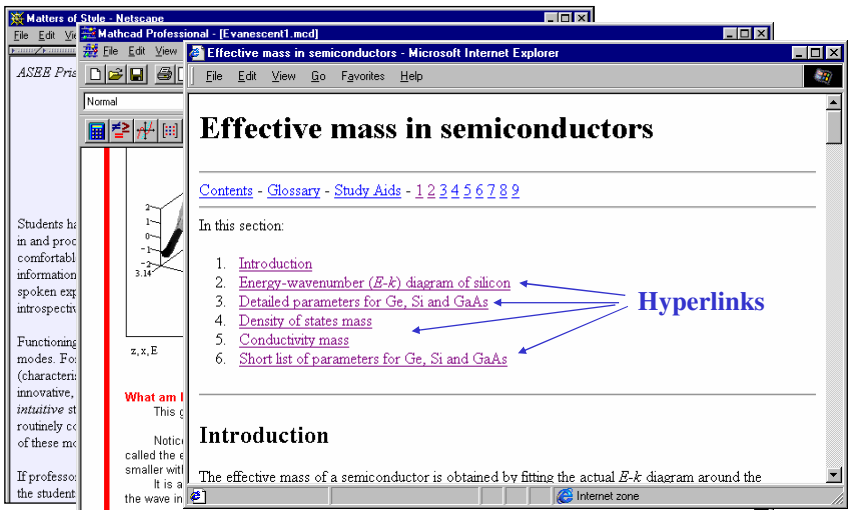
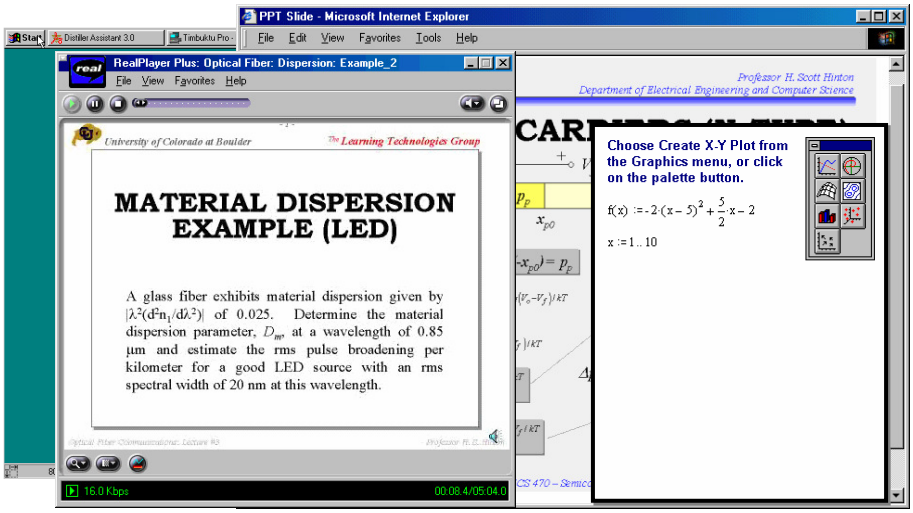
Passive Learning: Video Tutorials and Lecture



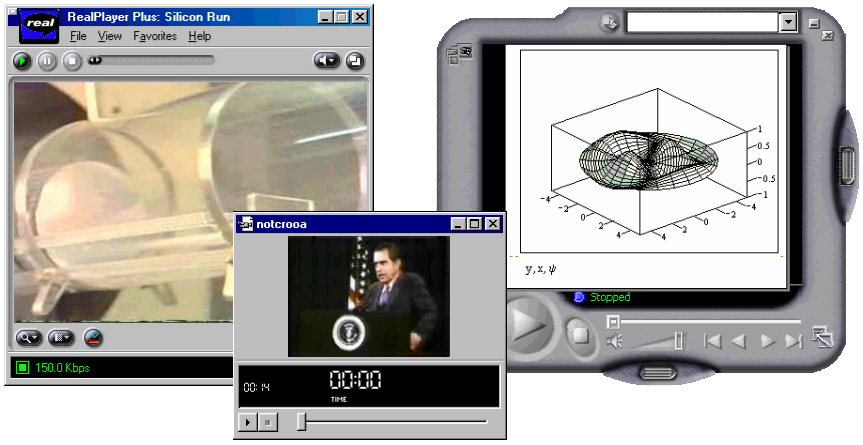
Passive Learning: Reading, Audio



Passive Learning: Tutorials



Passive Learning: Videos and Animations



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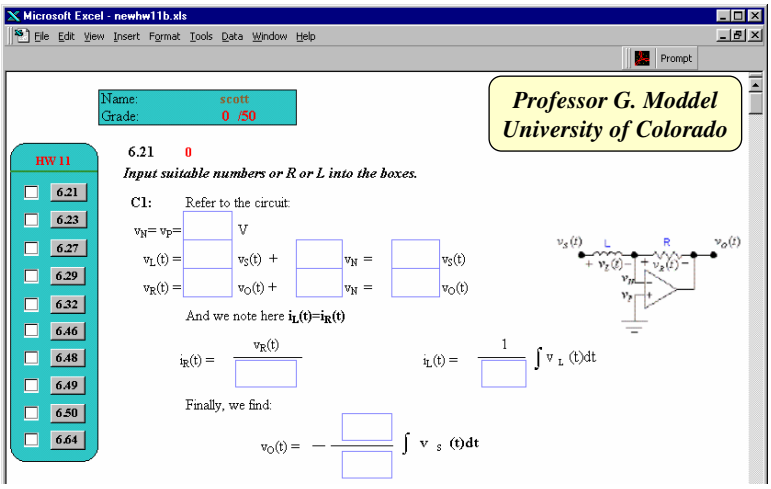
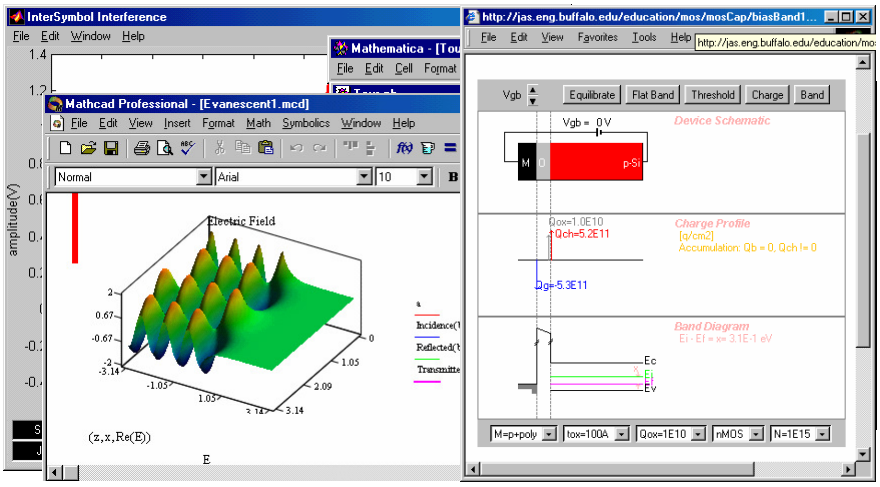
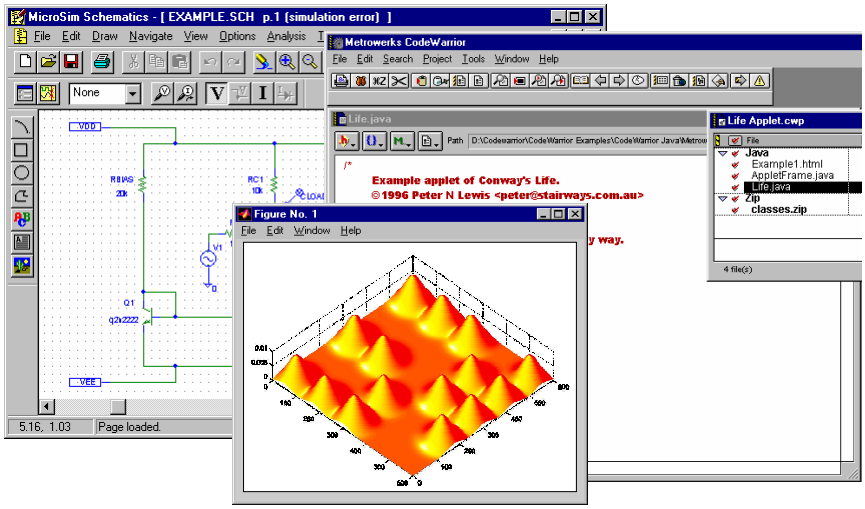
Active Learning: Tutored Homework



Active Learning: Interactive Simulation



Active Learning: Real Design Tool



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Real Design Tools

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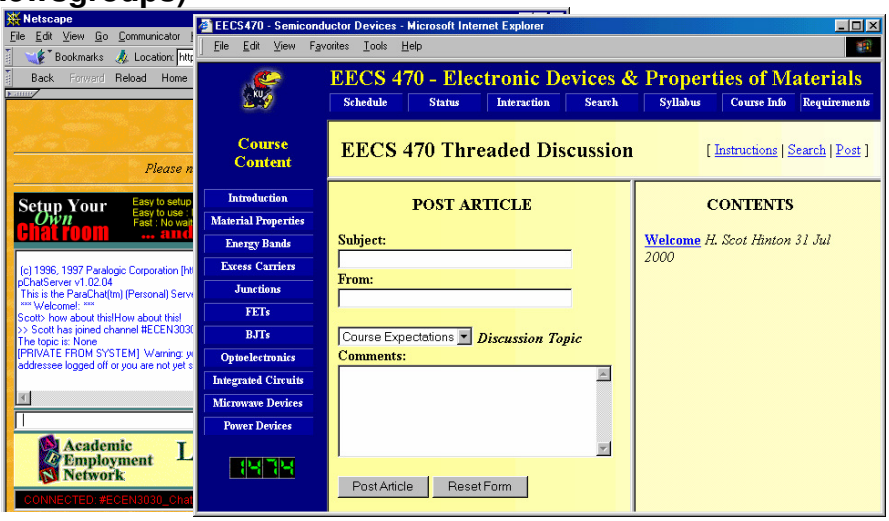
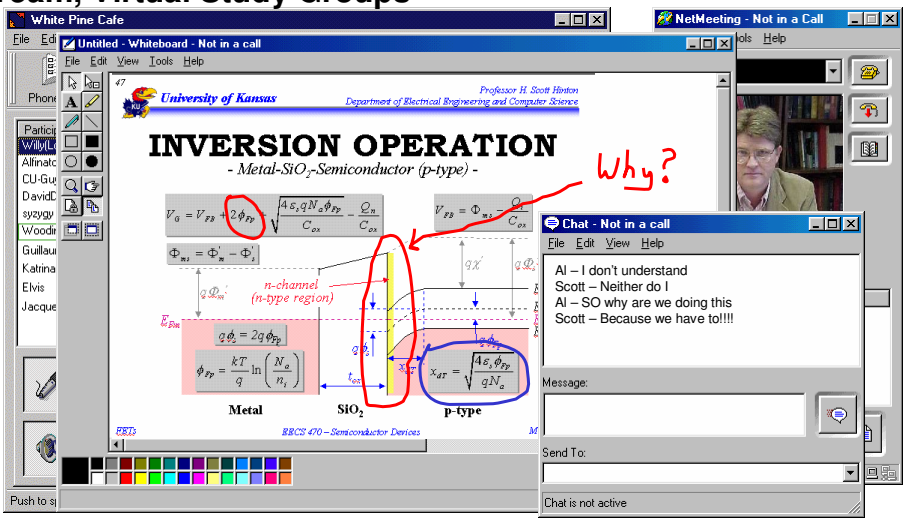
Learner Preferences
Construction Monitoring

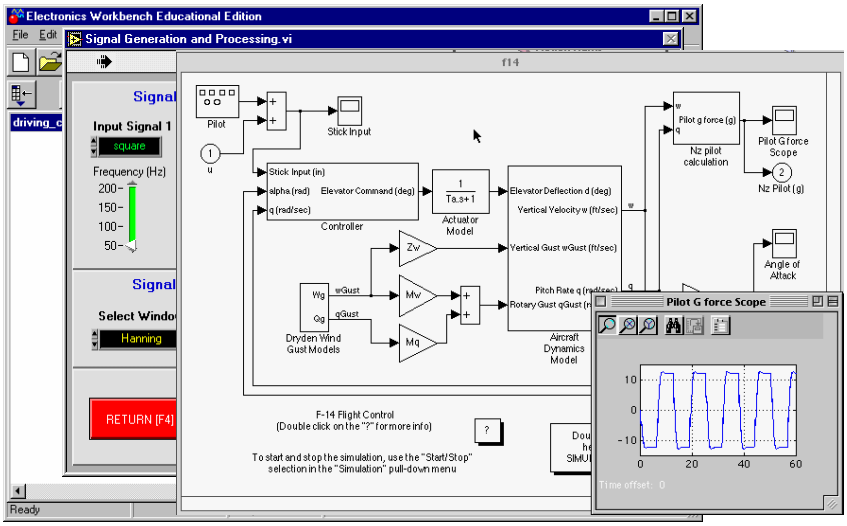
Collaborative Learning: Chat Rooms, Discussion Groups (Newsgroups)



Collaborative Learning: Video Conferencing, Virtual Design Team, Virtual Study Groups



Collaborative Learning: Virtual Labs, Remote Labs



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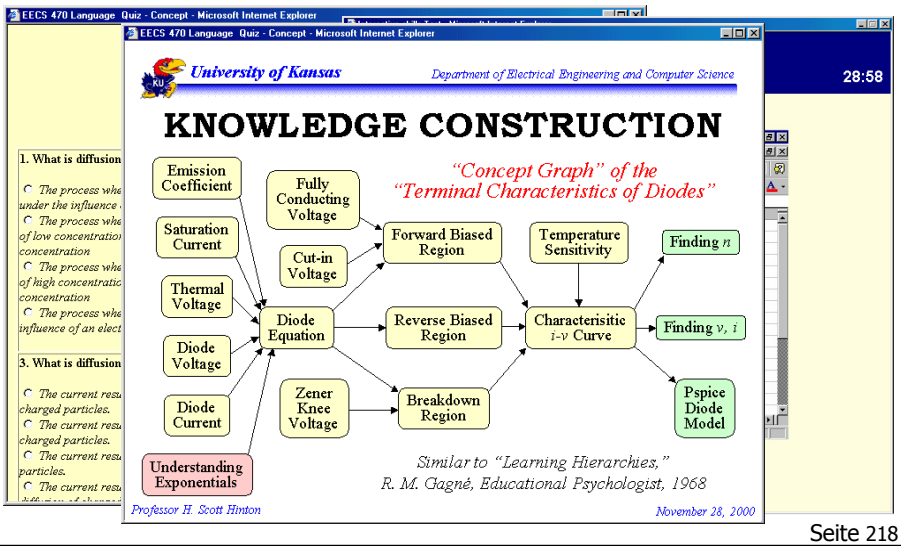


The Fact:

Example: MIT Open Courseware

The Internet (WWW) is the worlds best communication tool. Combined with what will be the

World's Largest Library

Creating the First and Only Global Continuous Learning Environment

http://rzblx1.uni-regensburg.de/ezeit/ezb.phtml
http://www.doaj.org/
http://www.onlinenewspapers.com/
http://www.cia.gov/cia/publications/factbook/
http://premium.zeit.de/cgi-bin/_er/p4z.fpl?ER_NextTemplate=angebote/audio
http://www.medlineplus.gov/
http://www.cardscout.de/
http://www.visualthesaurus.com/index.jsp

The Fact: MIT Open Curseware

Example: MIT Open Courseware

http://ocw.mit.edu/index.html

MIT's Open Courseware is spreading out to other Universities

http://ocw.jhsph.edu/ (Health Care)

http://ocw.tufts.edu/ (Dental Medicine, Medicine)

http://ocw.usu.edu/Index/ECIndex_view (various departments)

China Open Resources for Education (CORE), MIT OCW's Chinese language translation partner, now offers links to 451 China Quality OpenCourseWare (CNQOCW) courses for use and sharing in China and globally. The Chinese Ministry of Education plans to develop 1500 national-level quality courses by the end of 2007. To see Simplified Chinese translations of MIT courses, visit: http://www.core.org.cn/OCW_CN/Global/all-courses.htm

The top six universities in Japan -- Keio University, Kyoto University, Osaka University, Tokyo Institute of Technology, the University of Tokyo, and Waseda University -- have announced the formation of the Japan OCW Alliance. These six universities now offer open access to close to 100 courses, in both English (http://www.jocw.jp/sub2.htm) and Japanese (http://www.jocw.jp/sub1.htm)

Inspired by the MIT OCW initiative, the Fulbright School Economics Teaching Program (FETP) in Vietnam launched FETP OpenCourseWare (http://ocw.fetp.edu.vn/fetpocw.cfm) in 2003, the first "opencourseware" project to launch after MIT opened in September 2002. The Fulbright School participates with other academic institutions in Vietnam to promote the use of innovative long-distance learning activities

More E-Learning Ressources

www.br-online.de/alpha Broadcast from BR alpha in German language

- http://www.br-online.de/alpha/it-kompaktkurs/index.shtml
- http://www.br-online.de/alpha/it-kompaktkurs/faecher.shtml

http://www.bbc.co.uk/learning/

http://free-ed.net/free-ed/

http://www.dhm.de/lemo/ Virtuell museum with items from the 20th century

http://www.microsoft.com/germany/technet/webcasts/default.mspx

Example: Wikisource

- **Wikisource** (http://wikisource.org/wiki/Main_Page:English) is a Wikimedia project to create a growing free content library of primary source texts, and translations of source texts in any language. Till today Wikisource reached more then 20,000 articles.
- Some of included text types are:
  - Original texts previously published by any author
  - Translations of original texts
  - Historical documents of national or international interest
  - Mathematical data, formulas, and tables
  - Statistical source data (such as election results)
  - Bibliographies of authors whose works are in Wikisource
  - Source code (for computers) that is in the public domain or compatible with the GFDL
- The difference between Wikisource or Wikibooks?
  - The distinction between these two projects is relatively easy.
  - Wikisource focuses on material published elsewhere. Wikisource can be viewed as a library of public domain works.
  - Wikibooks are instructional materials written by the contributors themselves (e.g. study guides, classroom textbooks, and annotated texts).
  - See Wikisource and Wikibooks for additional information
- Wikisource or Wikipedia?
  - While Wikipedia is an encyclopedia, Wikisource is a library.
  - Wikipedia contains articles about books, while Wikisource includes the book itself.
  - To some extent both may include bibliographical material about the author

Example: Wikimedia Commons

- The **Wikimedia Commons** (http://commons.wikimedia.org/wiki/Main_Page) is a project that provides a central repository for free images, music, sound & video clips and, possibly, texts and spoken texts, used in pages of any Wikimedia project.
- Unlike images uploaded on other projects, images on Commons can be embedded on pages of all Wikimedia projects.
- The Commons was launched on September 7, 2004.
- Currently it contains **14,035** collections and **147,053** media files.

Example: Wikiquote

- Wikiquote (http://en.wikiquote.org/wiki/Main_Page) is a free online compendium of quotations in every language, including sources (where known), translations of non-English quotes, and links to Wikipedia for further information.
- The English version of Wikiquote has **3,577** pages so far with many thousands of quotations and proverbs.
- The **Quote of the Day archives** contains listings of quotes that have already been used.

Example: Wiktionary

- Wiktionary (http://en.wiktionary.org/wiki/Main_Page) is a collaborative project to produce a free multilingual dictionary in every language, with:
  - definitions
  - etymologies
  - pronunciations
  - quotations
- Wiktionary is the lexical companion to the open-content encyclopedia Wikipedia.
- In the English edition, started on December 12, 2002, are now 76,598 entries.
- The content of Wiktionary is covered by the GNU Free Documentation License; see Wiktionary copyrights for details.

Example: Wikinews

- All content written for Wikinews (http://en.wikinews.org/wiki/Main_Page) is in the public domain.
- By making the content perpetually available for free redistribution and use, the creators hope to contribute to a global digital commons.
- Wikinews also aims to write stories from a neutral point of view.

More Examples

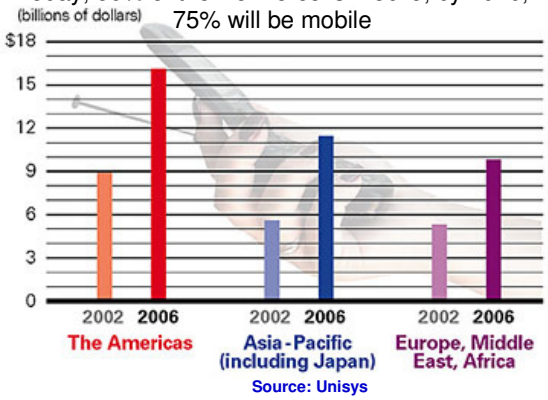
- **Wikibooks**
- **Wikispecies**
- **WikiReader Digest**

Wikipedia

Wikipedia in German:	**de.wikipedia.org**
Wikipedia in English:	**en.wikipedia.org**
For Desktop PCs:	**http://www.wapedia.de oder http://www.de.wapedia.org/wapedia:Start**
For Pocket PCs:	**http://pda.wapedia.de oder http://pda.de.wapedia.org/wapedia:Start**
For WAP-Mobilphones:	**wap.wapedia.de und http://wap2.de.wapedia.org/wapedia:Start**

Wireless is Top Technology Trend: Mobile Devices Get Smaller and More Powerful

Today, 50% of the workforce is mobile; by 2010, 75% will be mobile



Source: Unisys

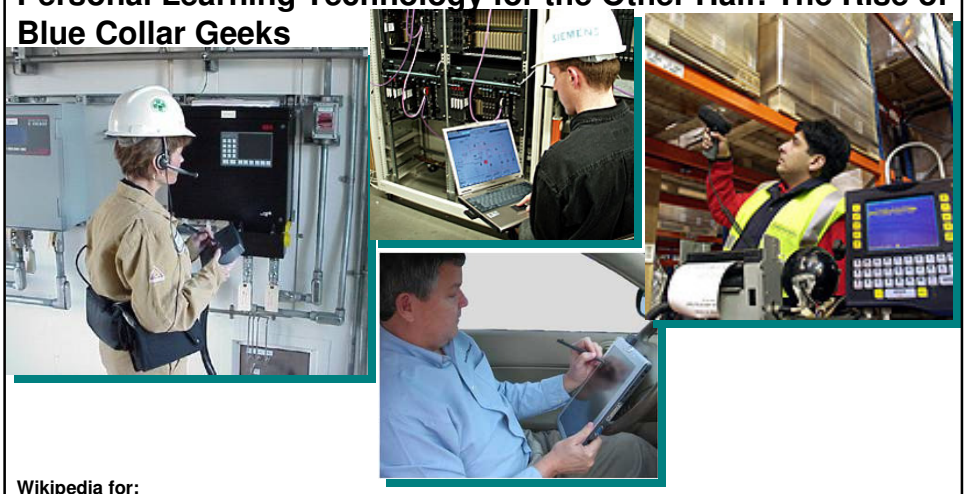
"A new cell phone has computing power equivalent to that of a 1998 desktop computer; next year's will be better yet."

Jonathan Lurie, "The New Human Frontier of Software: Mobile Computing," developer.com, November 2004

Augmented Reality – Eyeglasses and Displays

Augmented-reality displays will overlay computer-generated graphics onto the real world

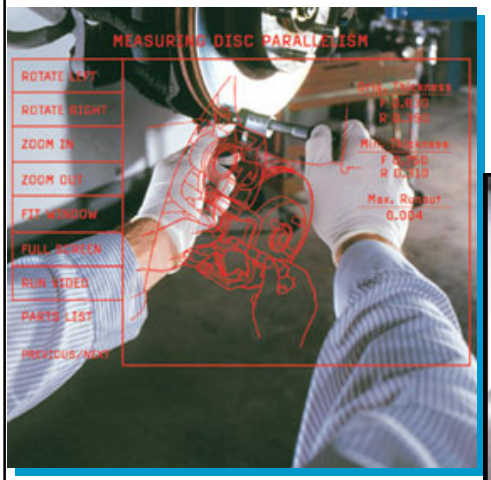
Personal Learning Technology for the Other Half: The Rise of Blue Collar Geeks

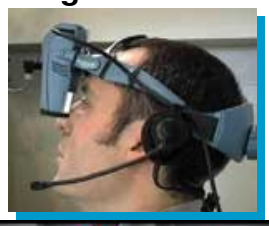


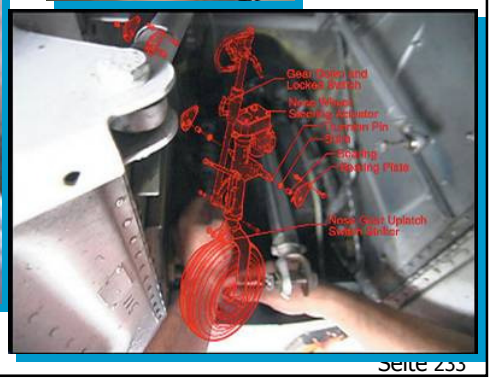
Wikipedia for:

- **Pocket PCs:** http://pda.wapedia.de oder http://pda.de.wapedia.org/wapedia:Start
- **WAP-Mobiltelefone:** wap.wapedia.de und http://wap2.de.wapedia.org/wapedia:Start

Blue-collar Knowledge Workers using Embedded Learning in Personal Learning Devices

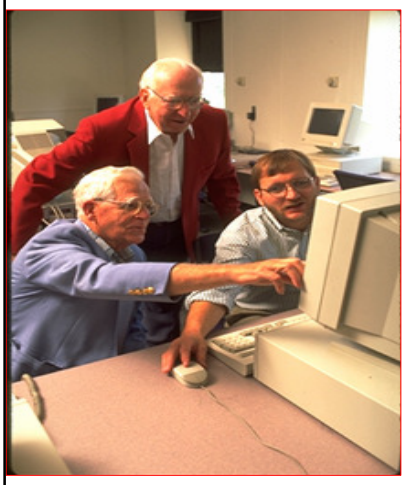






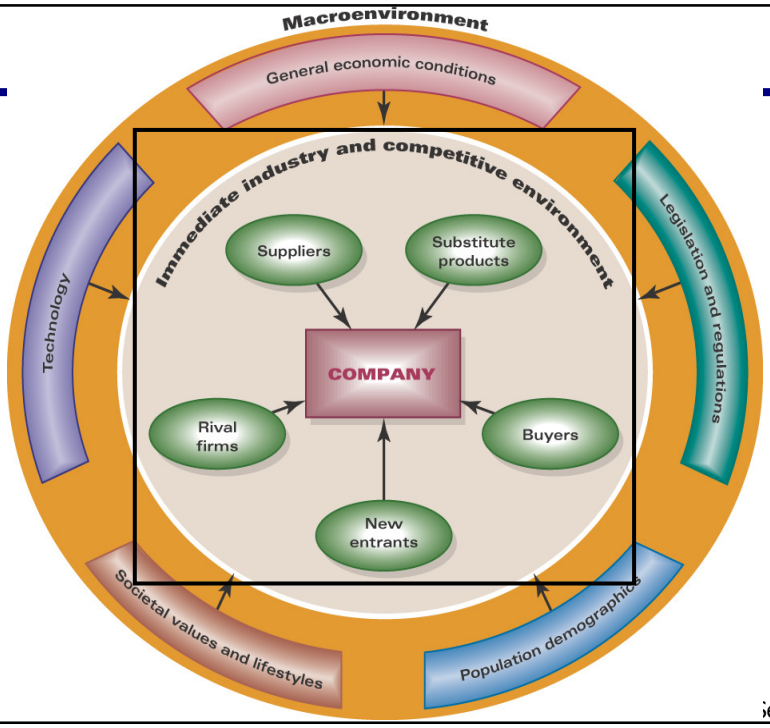
Source: Microvision, 2003

The Forty Year Degree



**Christopher Galvin,
President Motorola:**

- **We are not hiring any more graduates with four year degrees.**
- **We want employees with forty year degrees**



Seite 235

Industry Analysis

–

5 Forces Model of Competition

Seite 236

Diagnosing the Strength of Competitive Forces Industry Members Are Facing

Objectives are to identify

- Main ***sources*** of competitive forces
- ***Strength*** of these forces

Key analytical tool

- ***Five Forces Model of Competition***

Seite 237

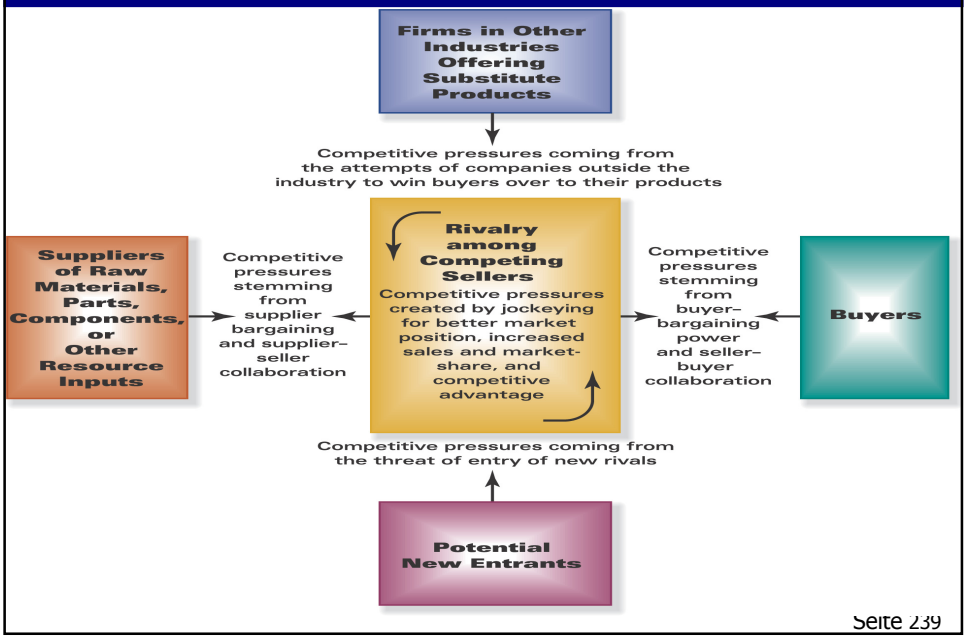
Porter's Competitive Forces Model

The model recognizes five major forces that could endanger a company's position in a given industry:

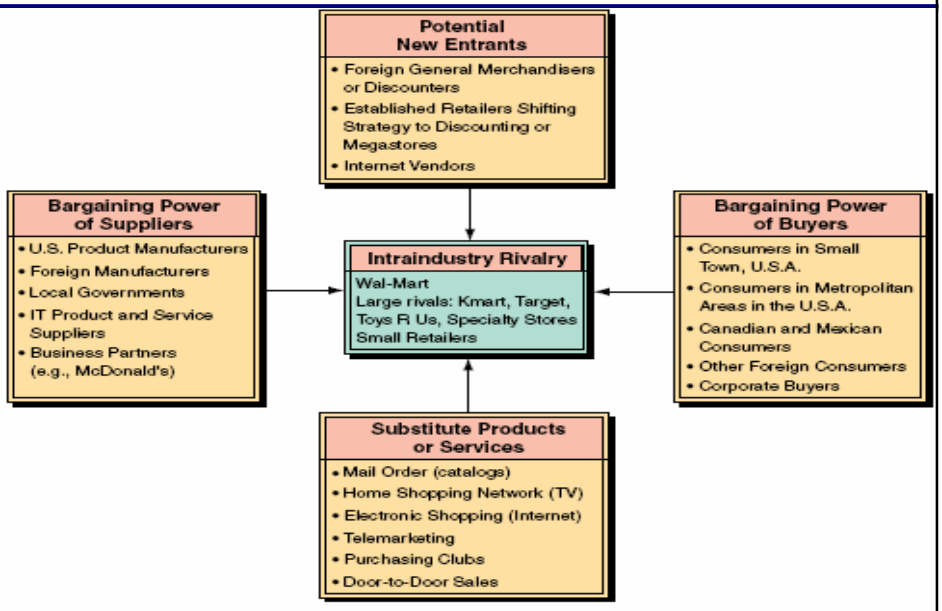
1. The threat of entry of new competitors
2. The bargaining power of suppliers
3. The bargaining power of customers (buyers)
4. The threat of substitute products or services
5. The rivalry among existing firms in the industry

External Competitive Forces

Seite 238



Porter's Competitive Forces Model: Example US Retail Chains

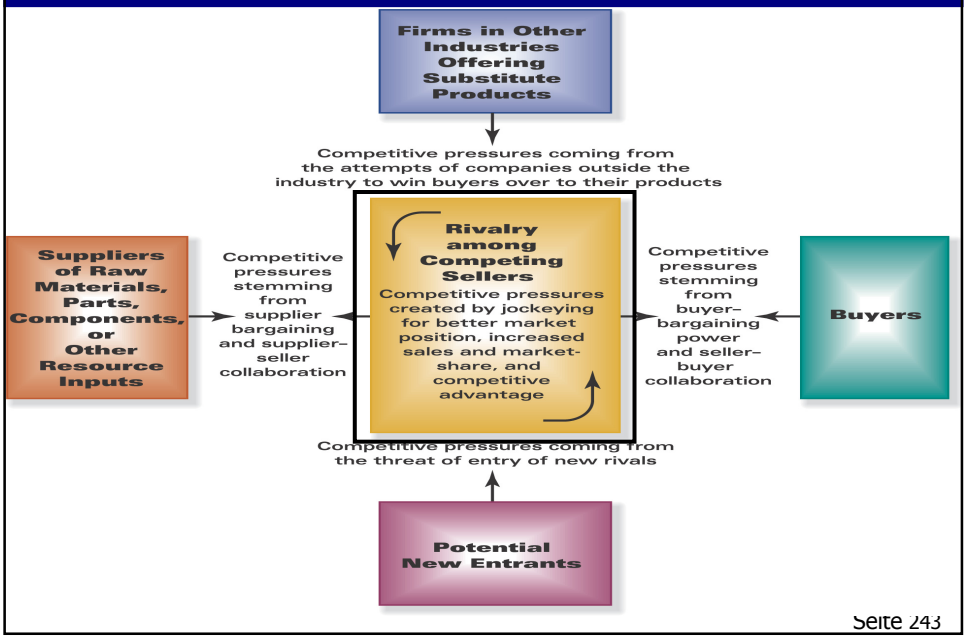


How to Analyze the Five Competitive Forces

Step 1: *Identify* the specific *competitive pressures* associated with each of the five forces

Step 2: *Evaluate* the *strength of each competitive force* -- fierce, strong, moderate to normal, or weak?

Step 3: *Determine* whether the *collective strength* of the five competitive forces is conducive to earning attractive profits



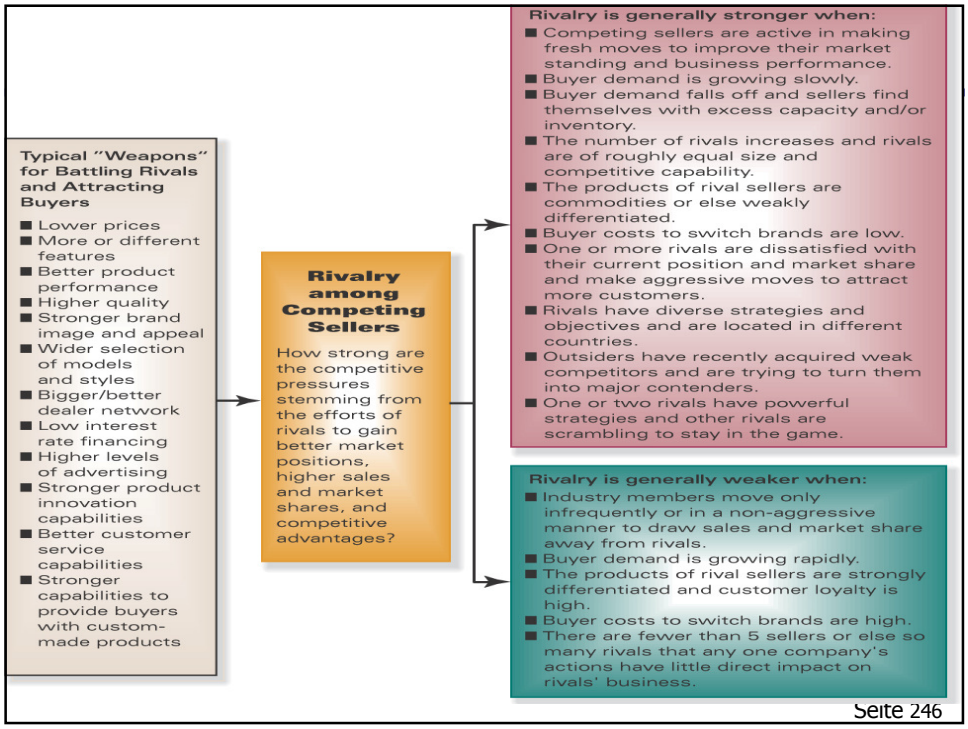
Rivalry Among Competing Sellers

- Usually the ***strongest*** of the five forces
- Key ***factor*** in determining ***strength of rivalry***
  - How aggressively are rivals using various ***weapons of competition*** to improve their market positions and performance?
- ***Competitive rivalry*** is a ***combative contest*** involving
  - ***Offensive*** actions
  - ***Defensive*** countermoves

What Are the Typical Weapons for Competing?

Vigorous price competition	**Bigger/better dealer network**
More or different performance features	**Low interest rate financing**
Better product performance	**Higher levels of advertising**
Higher quality	**Stronger product innovation capabilities**
Stronger brand image and appeal	**Better customer service**
Wider selection of models and styles	**Stronger capabilities to provide buyers with custom-made products**

Seite 245



Seite 246

The Cell Phone Industry shows that the Rivalry Among Competing Sellers can be a Serious Threat for the Companies

First Mobile Car Phones?

1924

1952

1973: First Portable Mobile Phone?

Seite 249

Example: Evolution of Mobile Phone Handheld Units

1987: Analog

1989: First Digital Implementation

1991: Digital

1996: Digital

Seite 250

Example: Evolution of Mobile Phone Handheld Units

Seite 251

2003: Nokia N-Gage

Seite 252

2004: Siemens Pen Phone

2004: Laser Keyboard

http://www.canesta.com und http://www.celluon.com

09/2004 Samsung‘s fist cell phone with 3GB harddisk

Seite 255

09/2004 Samsung‘s fist cell phone with 3GB harddisk

Seite 256

2006: Xcutemobile phone with 6 Mega Pixel Camera

http://www.xcutemobile.de/frame.htm

Seite 257

2006: Samsung phone with 10 Mega Pixel Photo Camera and TV-Receiver

Seite 258

02/2006: Toshiba W41T – 4 GByte Harddisk Cell Phone with 3-Megapixel-Camera

2006: More phones with Digital Cameras, Ca Course „Strategic Management“ Chapter 2 Scanning External Environment mcorders, Gaming, FM Radios, TVs, etc.

Samsung SCH-V770
7 Mega pixel Camera

Sanyo W32SA
With Disney UI
FM Receiver/Transmitter

Samsung V740
14mm thin, 1.3MP Camera

Samsung SCH-i730
Windows Mobile 2003, 802.11b

Maxon MiniMax MM-5500U
USB Modem

LG VX8100
V-Cast – Streaming Video, 3DGames

Audiovox
XV6600

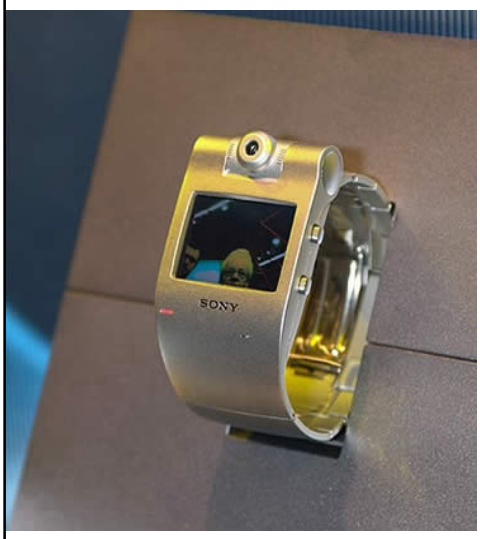
Casio W21CA
2.6 inch WQVGA, 2 MP Camera

au Design Project
PENCK
1.3 MP/Camcorder

LG KV3600
Enhanced 3D Gaming Graphics

Source: www.3Gtoday.com

New Form Factors 2007?



Seite 261

Plantronics Bijoux headset

- So you thought your behind-the-ear headset was "wearable."
- But this concept for a jewelry-like headset takes the idea to a new level.
- The ear buds fit snugly, and the speaker hangs elegantly around your neck.
- The set is as stylish as any pair of earrings and a matching pendant.
- Think it's somewhat disturbing to see people walking and talking on headsets clipped around their earlobes now?
- Imagine a future when devices like the Bijoux dominate the marketplace, making it even harder to distinguish who's making a phone call and who is simply talking to an imaginary friend or to oneself.
- Athough this particular design isn't intended for sale, Plantronics headsets are increasingly shrinking in size, and the Bijoux suggests how small -- and fashionable -- future headsets might get in coming years

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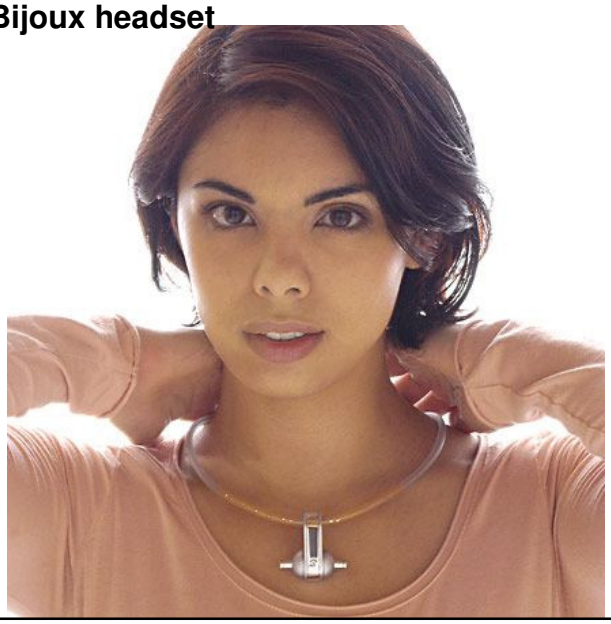
Plantronics Bijoux headset



Nokia Strapup phone bracelet

- The Strapup isn't really a phone.
- It's a device that you program with personal movements or gestures to trigger relevant text messages.
- For example, when you dance, your motion prompts the transmission of text that lists nearby nightclubs to friends.
- The idea is to allow you to communicate without wasting precious time talking -- or typing.
- Nokia says it has no plans to bring this device to market.

Nokia Strapup phone bracelet

The Display Industry shows that the Rivalry Among Competing Sellers can be a Serious Threat for the Companies

New mobile Devices begin to become more successful

http://www.tabletkiosk.com

Ultramobile PC (UMPC)

- Intel showed off two prototypes of ultramobile PC devices at the Intel Developer Forum in San Francisco on Tuesday.
- The models are examples of full-featured, low-wattage minitablets that can run a variant of Windows XP, developed as part of Microsoft's Origami Project.

Ultramobile PC (UMPC)

- This prototype mobile PC, about the size of a paperback book, has a 7-inch touch screen and standard x86 processors.
- It can run full versions of desktop operating systems beyond the XP variant from Origami.

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Ultramobile PC (UMPC)

- The second Origami model has a QWERTY keyboard that swivels out as needed.
- There is also a navigation panel.
- The hardware uses Intel's ultralow-voltage chips.

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Ultramobile PC (UMPC)

- The Origami device is shown with the keyboard and panel tucked away. The product could slip easily into a large pocket.

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http://scr3.golem.de/?d=0603/Origami_umpc&a=43900&s=1

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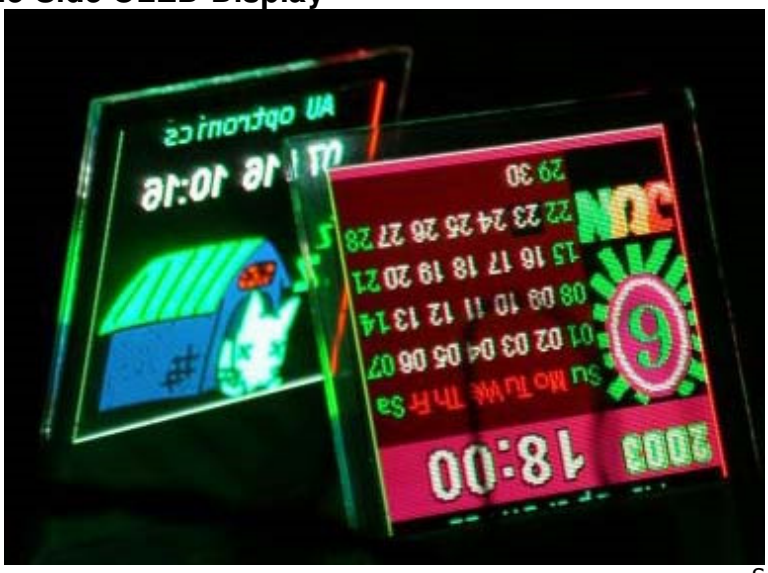
Ultramobile PC (UMPC)

http://scr3.golem.de/?d=0603/Origami_umpc&a=43900&s=1

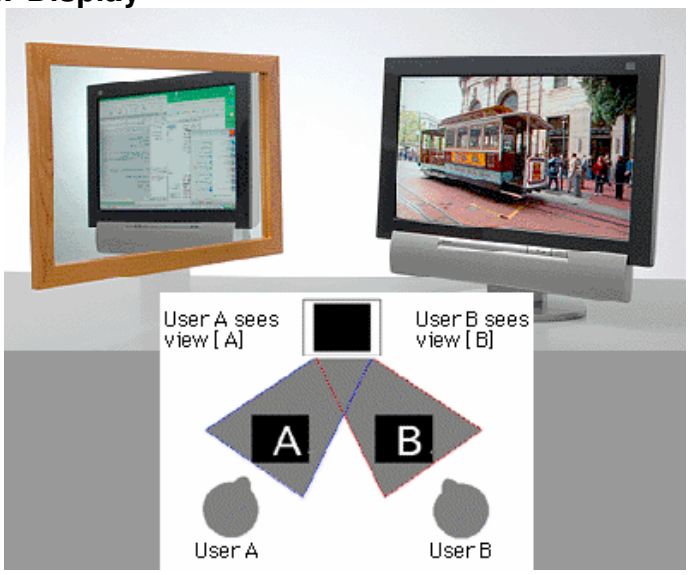
Development of PC technology

Double-Side OLED-Display



http://www.heise.de/newsticker/meldung/60264

Dual-View-Display



http://www.heise.de/newsticker/meldung/60264

E Ink

Prototype-Kit (http://www.eink.com/kits/

© Polymer Vision

http://www.golem.de/0509/40277.html

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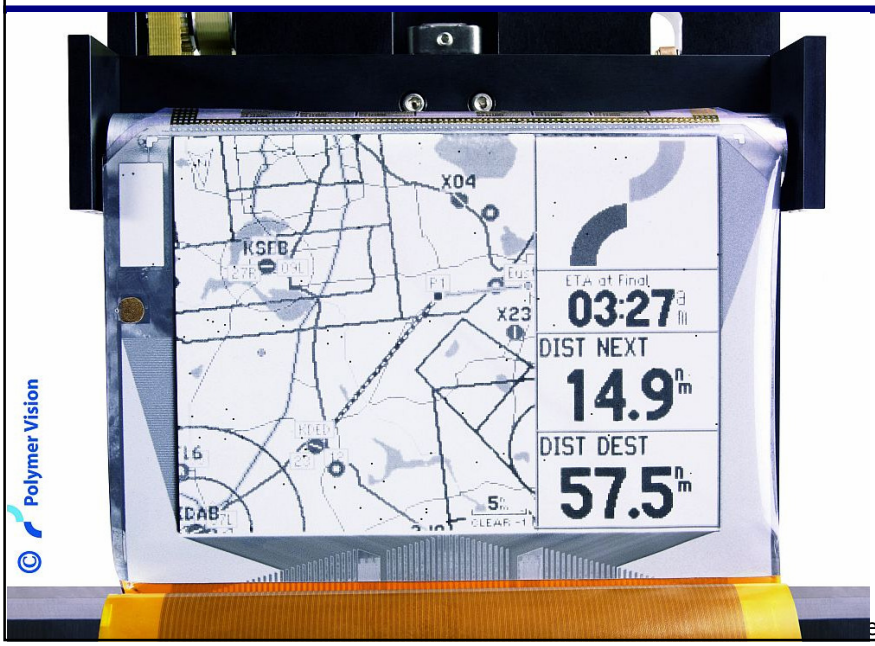

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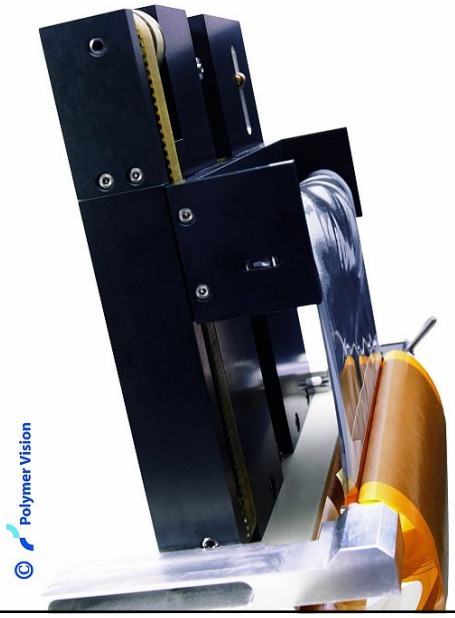

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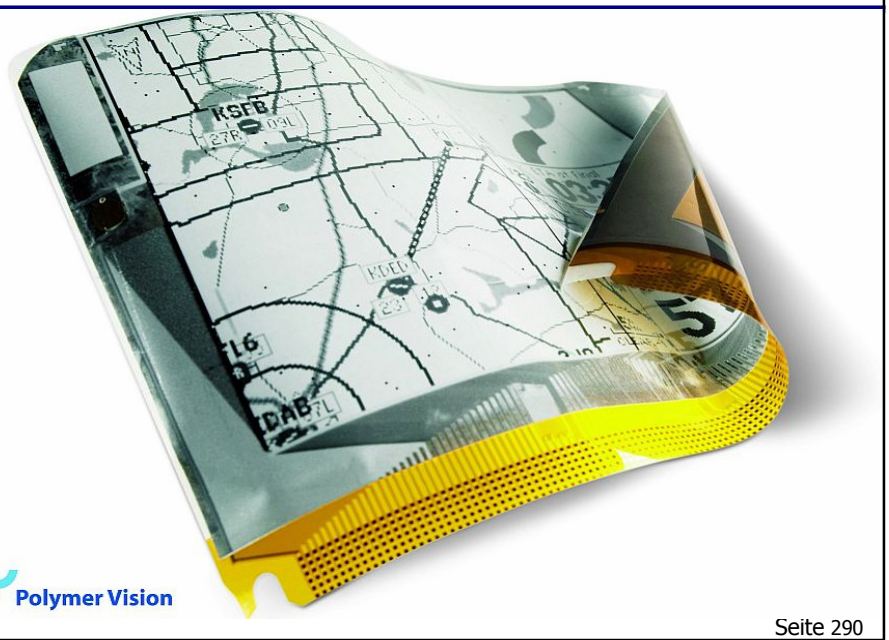

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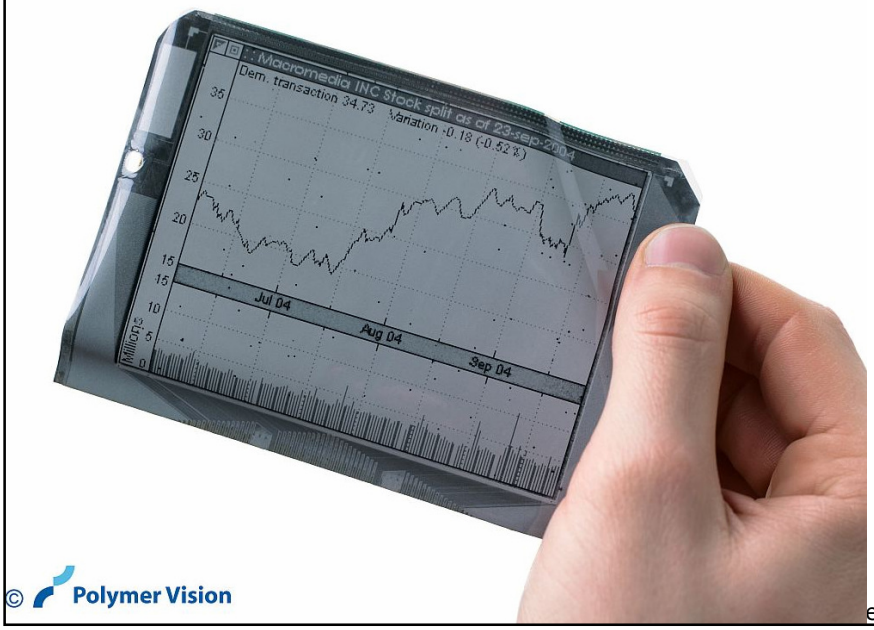

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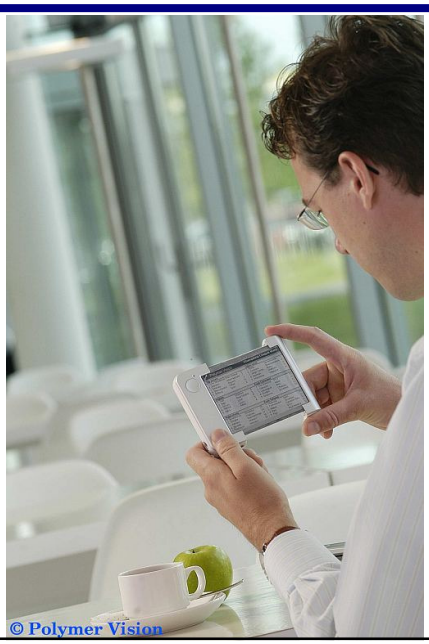
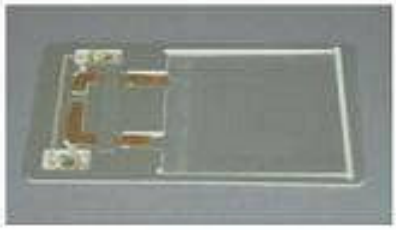


NEC: Thin Batterie is recharchable in 30 sekunds



http://golem.de/0512/42089.html

E-Paper: Flexible 10-Zoll-Polymer-Display

http://www.golem.de/0512/42036.html

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Sony Reader – E-Book-Reader with E-Ink Technology

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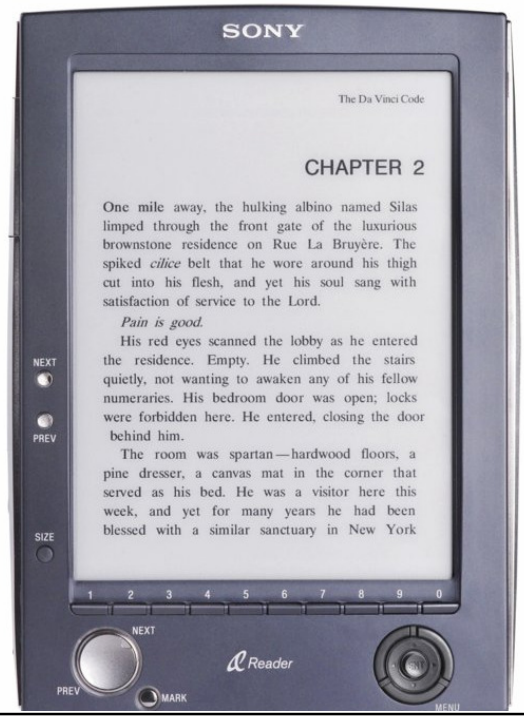

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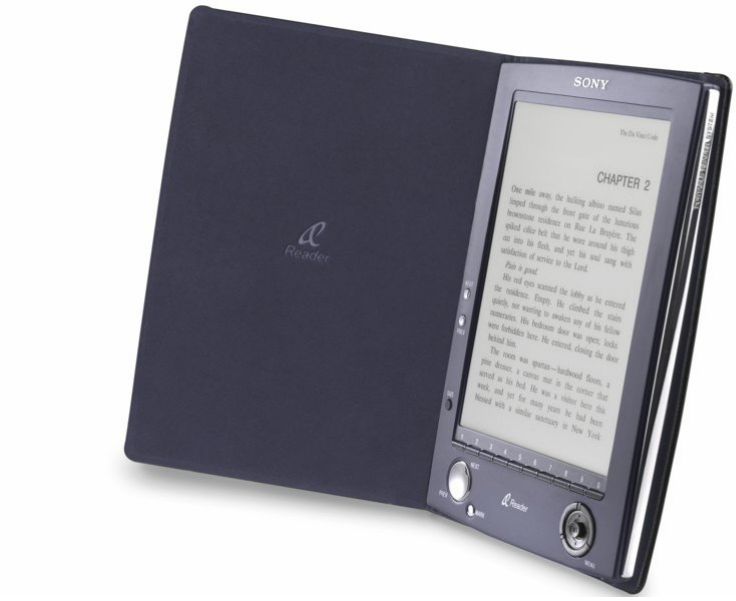

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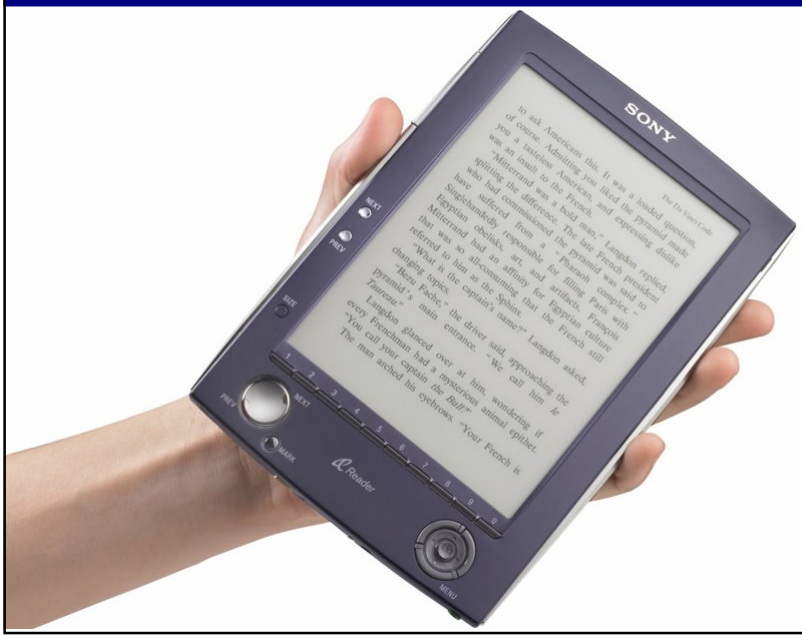

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Dual Screen 2-VU

- Two touch screens
- Screens 12” or 15”
- View 2 different documents at the same time!
- Windows XP or 2000
- 30 GB hard drive or higher; P4 processor
- On-screen keyboard or wireless keyboard
- Wireless network
- Price: $4075

http://dualscreen.com/

EveryBook

Lunar Design MicroMedia Electronic Paper

- Don't confuse these wafer-thin devices with other prototypes of "electronic paper" on the market, mainly targeted for publishing text.
- Lunar Design's MicroMedia Paper -- in concept stage only -- is a highly visual, rather than text-driven, concept.
- Playing on the idea of the postcard and the snapshot photo, Lunar, a 21-year-old San Francisco Bay-area company whose clients include Motorola, Apple, Hewlett-Packard, and Dell, conceived of MicroMedia Paper as a basic digital-media player.
- Geared to consumers who might be unfamiliar with up-to-the-minute devices like the video iPod, the device is intended to be easy to use and affordable. (The designers envision that a "pack" of MicroMedia Paper would retail for only $35.)
- Here's how it works: Images (still or video) and music can be downloaded wirelessly via Bluetooth to sheets of MicroMedia Paper.
- You use controls that echo those found on the typical VCR interface (play, fast-forward, etc.) to navigate with ease.

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Lunar Design MicroMedia Electronic Paper

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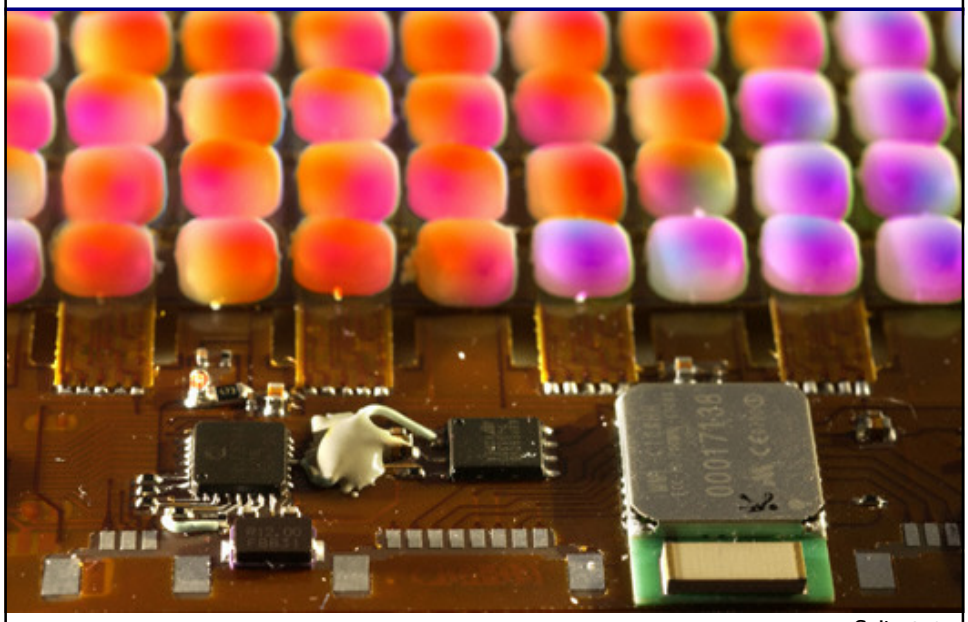
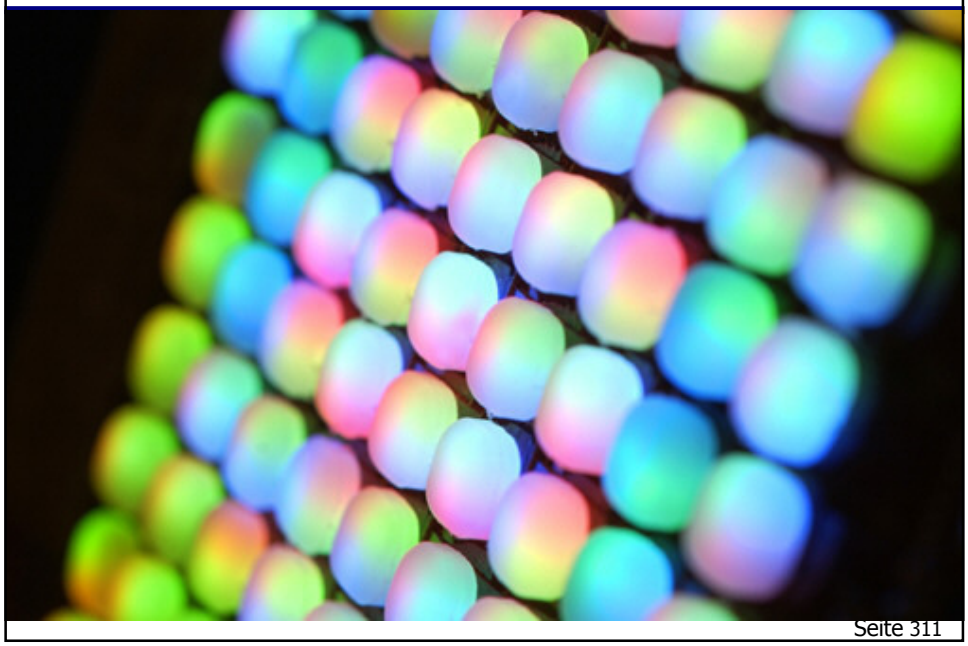
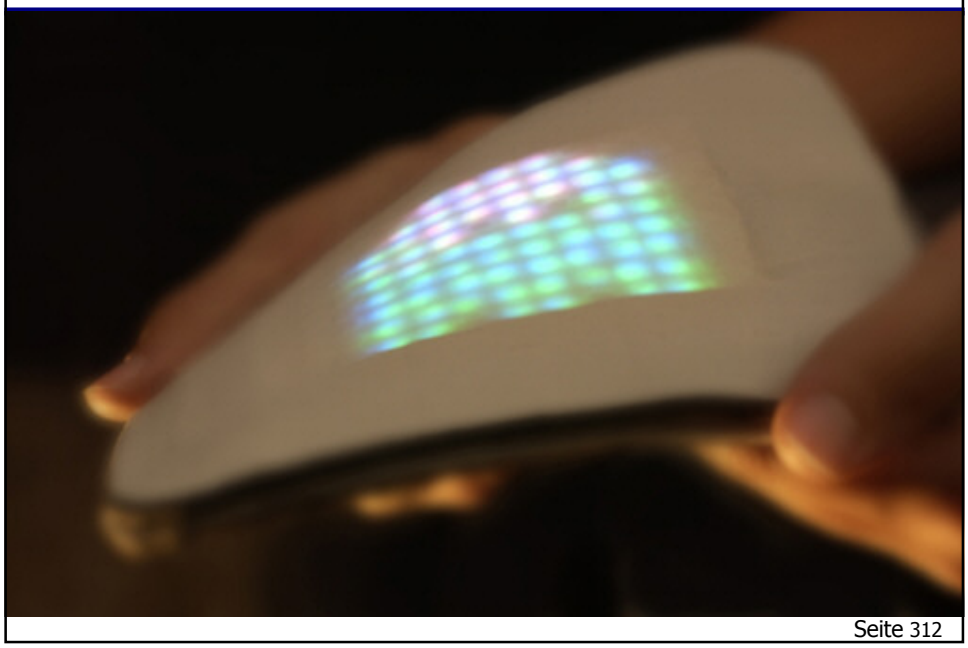
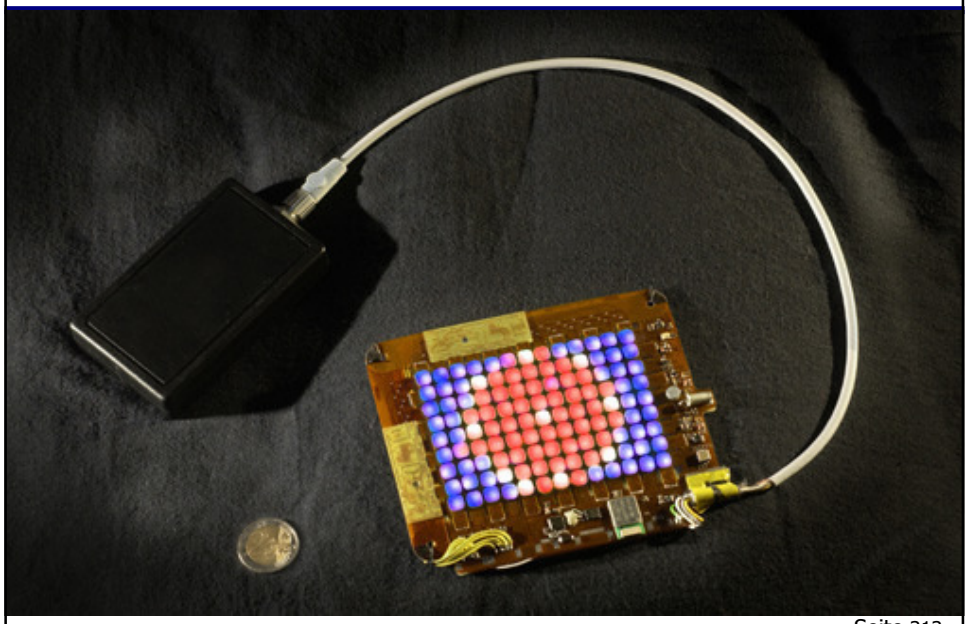
2004: Flexible LED-Displays for clothes

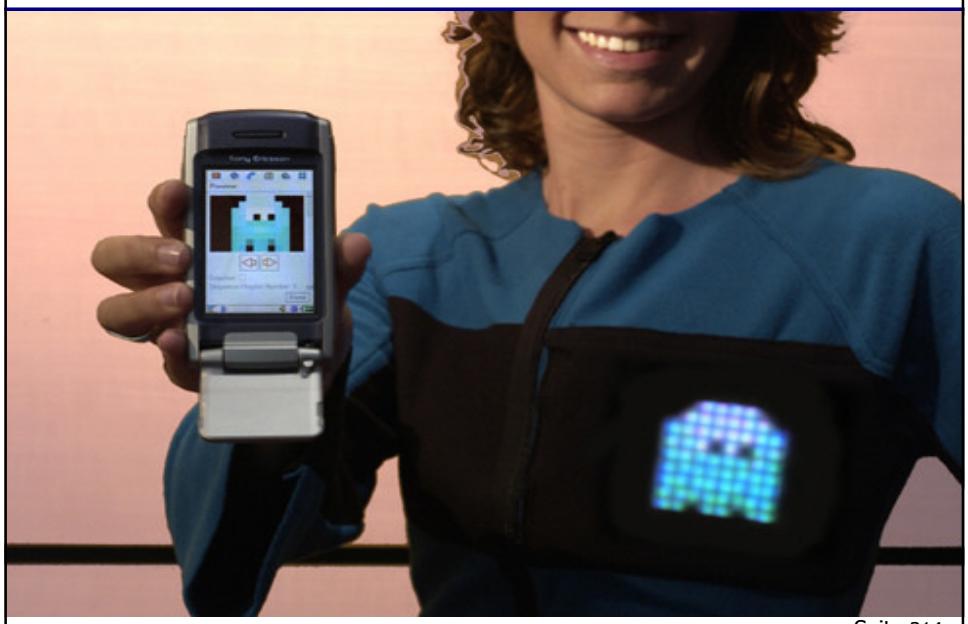
2004: Flexible LED-Displays for clothes











2005: Photonic Textiles

http://www.golem.de/0509/40192.html

http://www.golem.de/0509/40192.html

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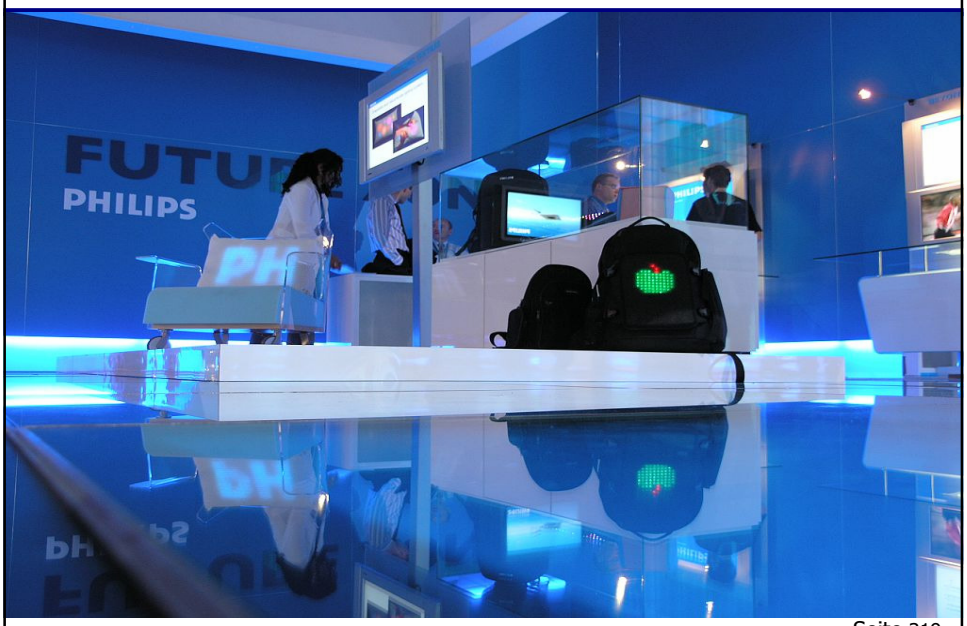

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What Causes Rivalry to be *Stronger* ?

- Competitors engage in frequent and aggressive launches of new offensives to gain sales and market share
- Slow market growth
- Number of rivals increases and rivals are of equal size and competitive capability
- Buyer costs to switch brands are low
- Industry conditions tempt rivals to use price cuts or other competitive weapons to boost volume
- A successful strategic move carries a big payoff
- Diversity of rivals increases in terms of visions, objectives, strategies, resources, and countries of origin
- Strong rivals outside the industry acquire weak firms in the industry and use their resources to transform the new firms into major market contenders

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What Causes Rivalry to Be *Weaker* ?

- Industry rivals move only infrequently or in a non-aggressive manner to draw sales from rivals
- Rapid market growth
- Products of rivals are strongly differentiated and customer loyalty is high
- Buyer costs to switch brands are high
- There are fewer than 5 rivals or there are numerous rivals so any one firm's actions has minimal impact on rivals' business

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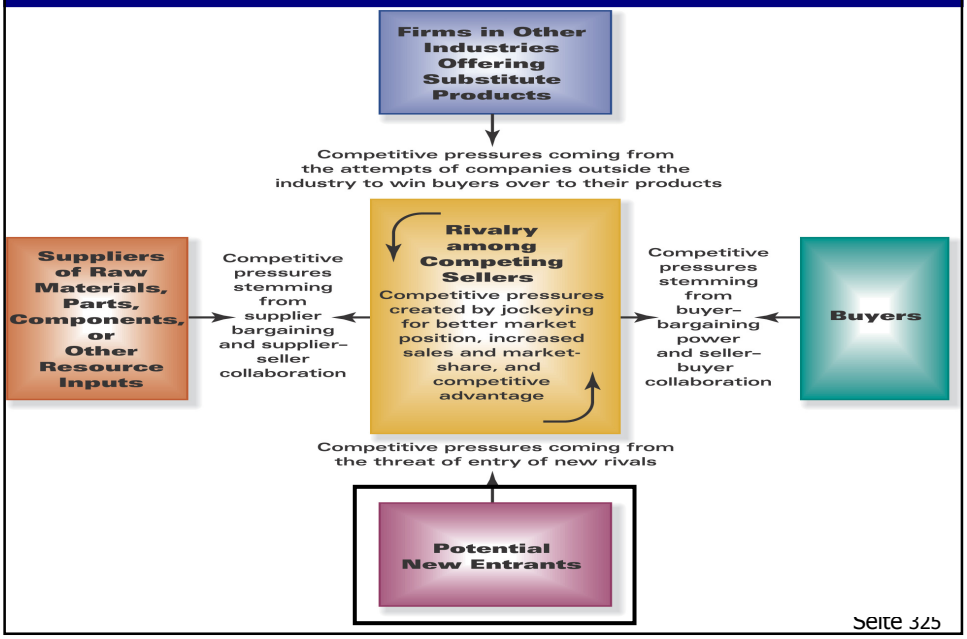

Is the Entry of Additional Competitors a Serious Threat?

- Seriousness of threat depends on
  - ***Size*** of ***pool of entry candidates*** and available resources
  - ***Barriers*** to entry
  - ***Reaction*** of existing firms

- Evaluating threat of entry involves assessing
  - How formidable entry barriers are for each type of potential entrant and
  - Attractiveness of growth and profit prospects

The Google story shows that the Entry of an Additional Competitors (even in a crowded industry) can be a Serious Threat to the competing sellers

The Google story shows

- **Markets always welcome an innovative new product providing customer value.**
- **Customers trust good brands.**
- **Well-crafted marketing mix strategies can be effective in helping newcomers enter crowded markets.**

The Roots of Google

- Stanford University -

Google Founders

Sergey Brin

Larry Page

BackRup

- According to Google lore, company founders Larry Page and Sergey Brin were not terribly fond of each other when they first met as Stanford University graduate students in computer science in 1995.
- Larry was a 24-year-old University of Michigan alumnus on a weekend visit; Sergey, 23, was among a group of students assigned to show him around. They argued about every topic they discussed. Their strong opinions and divergent viewpoints would eventually find common ground in a unique approach to solving one of computing's biggest challenges: retrieving relevant information from a massive set of data.
- By January of 1996, Larry and Sergey had begun collaboration on a search engine called BackRub, named for its unique ability to analyze the "back links" pointing to a given website.
- Larry, who had always enjoyed tinkering with machinery and had gained some notoriety for building a working printer out of Lego, took on the task of creating a new kind of server environment that used low-end PCs instead of big expensive machines. Afflicted by the perennial shortage of cash common to graduate students everywhere, the pair took to haunting the department's loading docks in hopes of tracking down newly arrived computers that they could borrow for their network.
- A year later, their unique approach to link analysis was earning BackRub a growing reputation among those who had seen it. Buzz about the new search technology began to build as word spread around campus.

Source: http://www.google.com/intl/en/corporate/history.html

The search for a buyer

- Larry and Sergey continued working to perfect their technology through the first half of 1998.
- Following a path that would become a key tenet of the Google way, they bought a terabyte of disks at bargain prices and built their own computer housings in Larry's dorm room, which became Google's first data center.
- Meanwhile Sergey set up a business office, and the two began calling on potential partners who might want to license a search technology better than any then available.
- Despite the dotcom fever of the day, they had little interest in building a company of their own around the technology they had developed.

Source: http://www.google.com/intl/en/corporate/history.html

The search for a buyer

- Among those they called on was friend and Yahoo! founder David Filo.
- Filo agreed that their technology was solid, but encouraged Larry and Sergey to grow the service themselves by starting a search engine company.
- "When it's fully developed and scalable," he told them, "let's talk again."
- Others were less interested in Google, as it was now known. One portal CEO told them, "As long as we're 80 percent as good as our competitors, that's good enough. Our users don't really care about search.„

David Filo

Source: http://www.google.com/intl/en/corporate/history.html

Touched by an angel

- Unable to interest the major portal players of the day, Larry and Sergey decided to make a go of it on their own.
- All they needed was a little cash to move out of the dorm — and to pay off the credit cards they had maxed out buying a terabyte of memory.
- So they wrote up a business plan, put their Ph.D. plans on hold, and went looking for an angel investor.
- Their first visit was with a friend of a faculty member.

Source: http://www.google.com/intl/en/corporate/history.html

Touched by an angel

Touched by an angel

- Andy Bechtolsheim, one of the founders of Sun Microsystems, was used to taking the long view.
- One look at their demo and he knew Google had potential — a lot of potential. But though his interest had been piqued, he was pressed for time. As Sergey tells it, "We met him very early one morning on the porch of a Stanford faculty member's home in Palo Alto. We gave him a quick demo. He had to run off somewhere, so he said, 'Instead of us discussing all the details, why don't I just write you a check?' It was made out to Google Inc. and was for $100,000."
- The investment created a small dilemma. Since there was no legal entity known as "Google Inc.," there was no way to deposit the check. It sat in Larry's desk drawer for a couple of weeks while he and Sergey scrambled to set up a corporation and locate other funders among family, friends, and acquaintances. Ultimately they brought in a total initial investment of almost $1 million.

Sun microsystems

We make the net work.

Andy Bechtolsheim

Source: http://www.google.com/intl/en/corporate/history.html

Everyone's favorite garage band

- On September 7, 1998, Google Inc. opened its door in Menlo Park, California.
- The door came with a remote control, as it was attached to the garage of a friend who sublet space to the new corporation's staff of three.
- The office offered several big advantages, including a washer and dryer and a hot tub.
- It also provided a parking space for the first employee hired by the new company:
  - Craig Silverstein, now Google's director of technology.

Source: http://www.google.com/intl/en/corporate/history.html

Google`s first web page

First success

- Already Google.com, still in beta, was answering 10,000 search queries each day.
- The press began to take notice of the upstart website with the relevant search results, and articles extolling Google appeared in USA TODAY and Le Monde.
- That December, PC Magazine named Google one of its Top 100 Web Sites and Search Engines for 1998.
- Google was moving up in the world.

Source: http://www.google.com/intl/en/corporate/history.html

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On the road again

- Google quickly outgrew the confines of its Menlo Park home, and by February 1999 had moved to an office on University Avenue in Palo Alto.
- At eight employees, Google's staff had nearly tripled, and the service was answering more than 500,000 queries per day. Interest in the company had grown as well. Red Hat signed on as its first commercial search customer, drawn in part by Google's commitment to running its servers on the open source operating system Linux.
- On June 7, the company announced that it had secured a round of funding that included $25 million from the two leading venture capital firms in Silicon Valley, Sequoia Capital and Kleiner Perkins Caufield & Byers. In a replay of the convergence of opposites that gave birth to Google, the two firms — normally fiercely competitive, but seeing eye-to-eye on the value of this new investment — both took seats on the board of directors. Mike Moritz of Sequoia and John Doerr of Kleiner Perkins — who between them had helped grow Sun Microsytems, Intuit, Amazon, and Yahoo! — joined Ram Shriram, CEO of Junglee, at the ping pong table that served as formal boardroom furniture.
- In short order, key hires began to fill the company's modest offices. Omid Kordestani left Netscape to accept a position as vice president of business development and sales, and Urs Hölzle was hired away from UC Santa Barbara as vice president of engineering.
- It quickly became obvious that more space was needed. At one point the office became so cramped that employees couldn't stand up from their desks without others tucking their chairs in first.

Source: http://www.google.com/intl/en/corporate/history.html

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„Googleplex“ in Mountain View / California

- The gridlock was alleviated with the move to the Googleplex, Google's current headquarters in Mountain View, California.

Source: http://www.google.com/intl/en/corporate/history.html

No beta search engine

No beta search engine

- Tucked away in one corner of the two-story structure, the Google kernel continued to grow — attracting staff and clients and drawing attention from users and the press.
- AOL/Netscape selected Google as its web search service and helped push traffic levels past 3 million searches per day. Clearly, Google had evolved.
- What had been a college research project was now a real company offering a service that was in great demand.
- On September 21, 1999, the beta label came off the website.
- Still Google continued to expand. The Italian portal Virgilio signed on as a client, as did Virgin Net, the UK's leading online entertainment guide. The spate of recognition that followed included a Technical Excellence Award for Innovation in Web Application Development from PC Magazine and inclusion in several "best of" lists, culminating with Google's appearance on Time magazine's Top Ten Best Cybertech list for 1999.

Source: http://www.google.com/intl/en/corporate/history.html

What is the meaning of Google?

- **Google is a play on the word „googol“, which was coined by Milton Sirotta, nephew of American mathematician Edward Kasner, and was popularized in the book, "Mathematics and the Imagination" by Kasner and James Newman.**
- **It refers to the number represented by the numeral 1 followed by 100 zeros.**
- **Google's use of the term reflects the company's mission to organize the immense, seemingly infinite amount of information available on the web**

Googol (10^{100})

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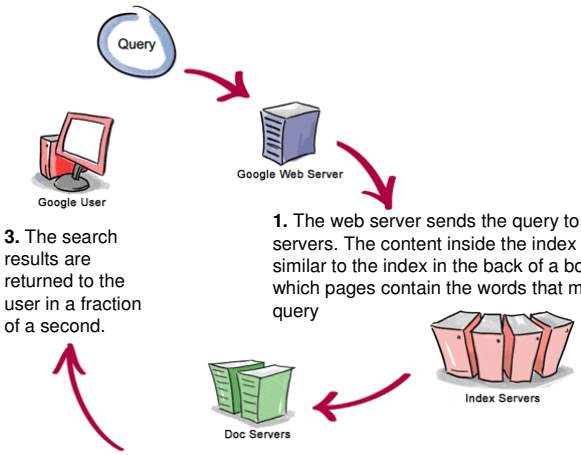
Source: http://www.google.com/intl/en/corporate/history.html

Google Search Technology



Source: http://www.google.com/corporate/query.html

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Built-in innovation

- At the Googleplex, a unique company culture was evolving. To maximize the flexibility of the work space, large rubber exercise balls were repurposed as highly mobile office chairs in an open environment free of cubicle walls.
- While computers on the desktops were fully powered, the desks themselves were wooden doors held up by pairs of sawhorses. Lava lamps began sprouting like multi-hued mushrooms.
- Large dogs roamed the halls — among them Yoshka, a massive but gentle Leonberger. After a rigorous review process, Charlie Ayers was hired as company chef, bringing with him an eclectic repertoire of health-conscious recipes he developed while cooking for the Grateful Dead.
- Sections of the parking lot were roped off for twice-weekly roller hockey games. Larry and Sergey led weekly TGIF meetings in the open space among the desks, which easily accommodated the company's 60-odd employees.
- The informal atmosphere bred both collegiality and an accelerated exchange of ideas. Google staffers made many incremental improvements to the search engine itself and added such enhancements as the Google Directory (based on Netscape's Open Directory Project) and the ability to search via wireless devices. Google also began thinking globally, with the introduction of ten language versions for users who preferred to search in their native tongues

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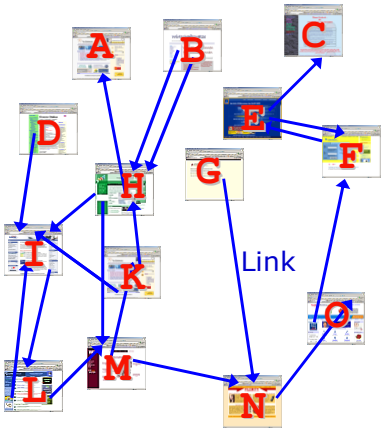
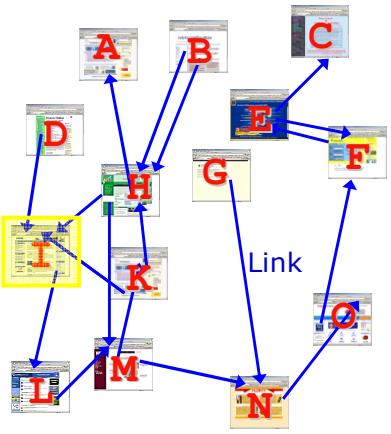
The PageRank

- Google sorts by PageRank
- The more links point to a document, the higher is the rank
- But not all links are equal, the PageRank of the referee counts too!
- A recursives problem *„solving an equation of more than 500 million variables and 2 billion terms“* (source: Google)



The Link Matrix

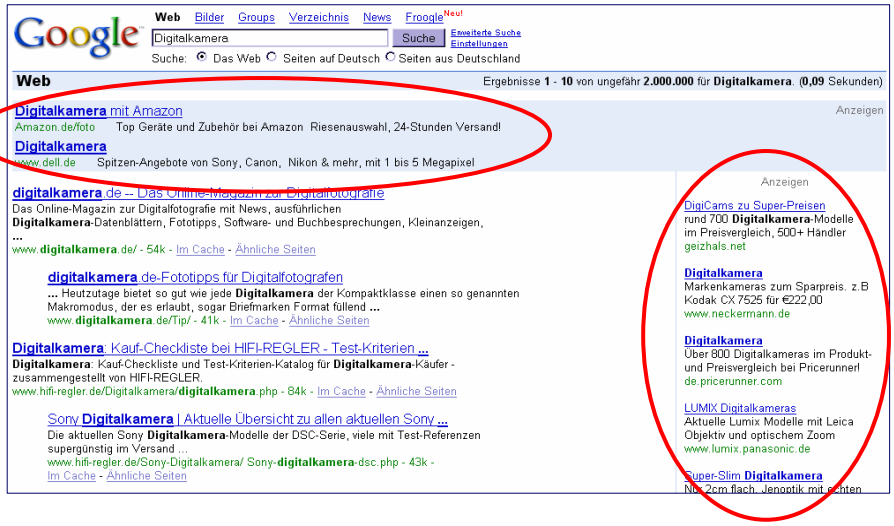
	A	B	C	D	E	F	G	H	I	K	L	M	N	O
A	0	0	0	0	0	0	0	1	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	1	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	1	0	0	0	0	0	0	0	0
F	0	0	0	0	1	0	0	0	0	0	0	0	0	1
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	2	0	0	0	0	0	0	0	1	0	0	0	0
I	0	0	0	1	0	0	0	1	0	1	0	0	0	0
K	0	0	0	0	0	0	0	0	0	0	0	1	0	0
L	0	0	0	0	0	0	0	0	1	0	0	0	0	0
M	0	0	0	0	0	0	0	1	0	0	1	0	0	0
N	0	0	0	0	0	0	1	0	0	0	0	1	0	0
O	0	0	0	0	0	0	0	0	0	0	0	0	1	0



Google`s 10 Commandments

1. Focus on the user and all else will follow.
2. It's best to do one thing really, really well.
3. Fast is better than slow.
4. Democracy on the web works.
5. You don't need to be at your desk to need an answer.
6. You can make money without doing evil.
7. There's always more information out there.
8. The need for information crosses all borders.
9. You can be serious without a suit.
10. Great just isn't good enough

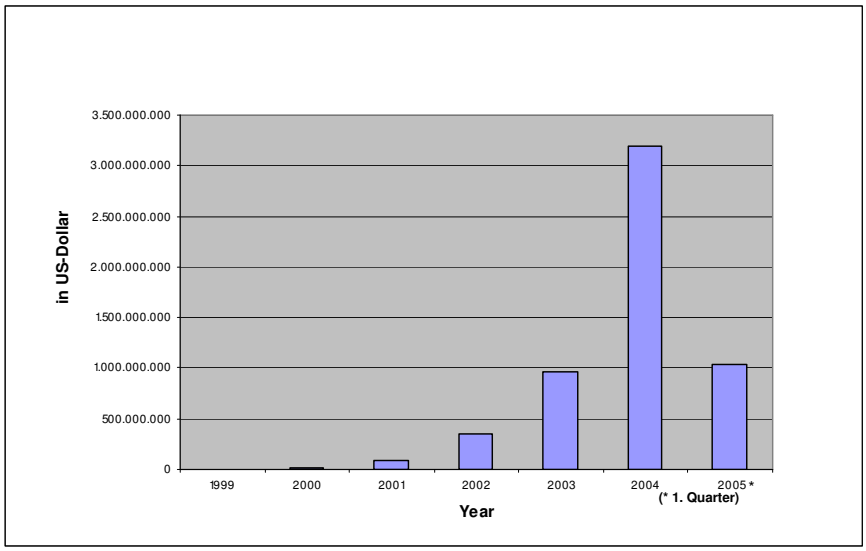
Google: The Source of Google‘s Revenue? Google AdWorks



Google: Revenue, Profit and Loss

Year	Revenue	Profit / Loss
1999	220.000 US-Dollar	-6.000.000 US-Dollar
2000	19.000.000 US-Dollar	-14.700.000 US-Dollar
2001	86.400.000 US-Dollar	7.000.000 US-Dollar
2002	347.800.000 US-Dollar	99.700.000 US-Dollar
2003	961.900.000 US-Dollar	105.600.000 US-Dollar
2004	3.200.000.000 US-Dollar	399.100.000 US-Dollar
2005 (1. Quarter)	1.032.000.000 US-Dollar	207.000.000 US-Dollar

Google: Profit / Loss from 1999 til 1st Quarter 2005



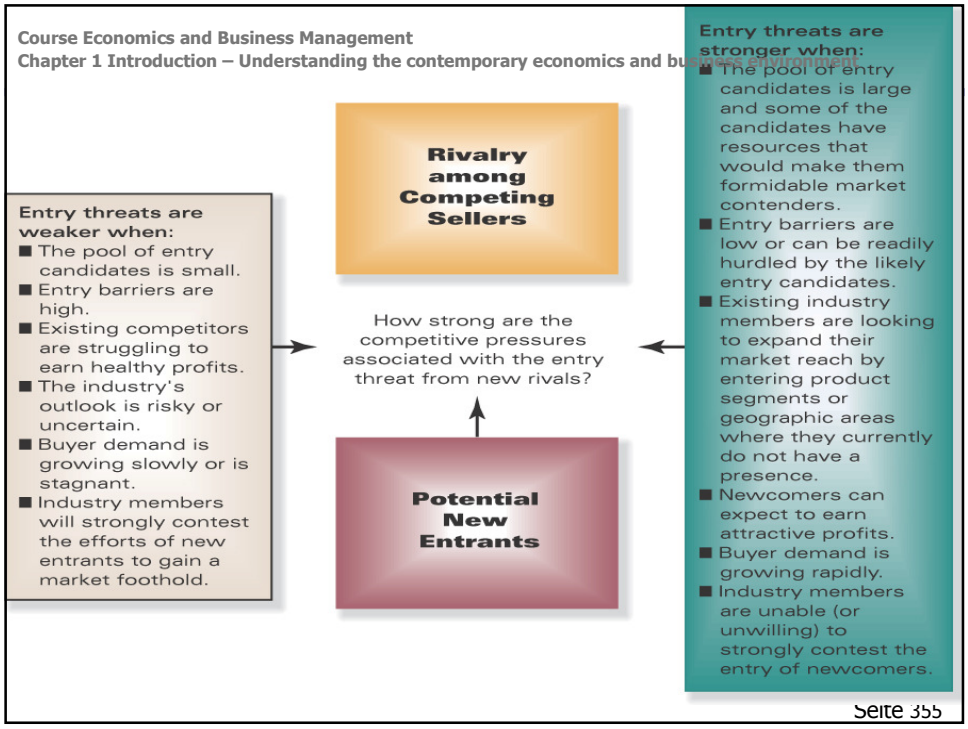
Google Stock Chart

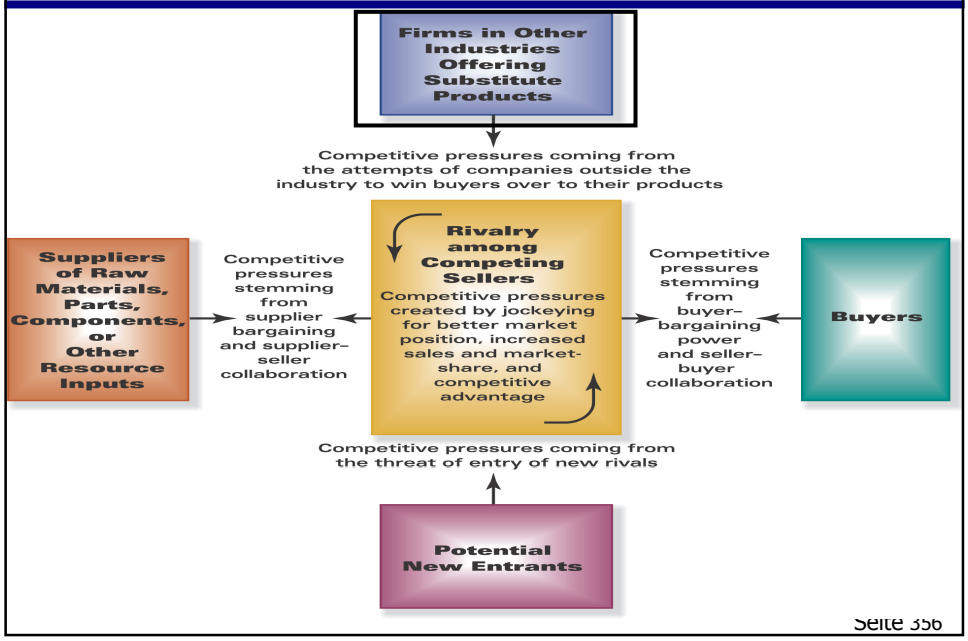
Google: The Competition

„We face formidable competition in every aspect of our business, and particularly from other companies that seek to connect people with information on the web and provide them with relevant advertising. Currently, we consider our primary competitors to be Microsoft and Yahoo."

YAHOO!

Microsoft


Rivalry among Competing Sellers
Entry threats are weaker when:
■ The pool of entry candidates is small.
■ Entry barriers are high.
■ Existing competitors are struggling to earn healthy profits.
■ The industry's outlook is risky or uncertain.
■ Buyer demand is growing slowly or is stagnant.
■ Industry members will strongly contest the efforts of new entrants to gain a market foothold.
How strong are the competitive pressures associated with the entry threat from new rivals?
Potential New Entrants
Entry threats are stronger when:
■ The pool of entry candidates is large and some of the candidates have resources that would make them formidable market contenders.
■ Entry barriers are low or can be readily hurdled by the likely entry candidates.
■ Existing industry members are looking to expand their market reach by entering product segments or geographic areas where they currently do not have a presence.
■ Newcomers can expect to earn attractive profits.
■ Buyer demand is growing rapidly.
■ Industry members are unable (or unwilling) to strongly contest the entry of newcomers.


Firms in Other Industries Offering Substitute Products
Competitive pressures coming from the attempts of companies outside the industry to win buyers over to their products
Suppliers of Raw Materials, Parts, Components, or Other Resource Inputs
Competitive pressures stemming from supplier bargaining and supplier–seller collaboration
Rivalry among Competing Sellers
Competitive pressures created by jockeying for better market position, increased sales and market-share, and competitive advantage
Competitive pressures stemming from buyer–bargaining power and seller–buyer collaboration
Buyers
Competitive pressures coming from the threat of entry of new rivals
Potential New Entrants

The Strength of Competitive Pressures from Substitute Products

Concept

Substitutes **matter when customers are attracted to the products of firms in** *other industries*

Examples

- ➔ Eyeglasses and contact lens vs. laser surgery
- ➔ Sugar vs. artificial sweeteners
- ➔ Newspapers vs. TV vs. Internet

How to Tell Whether Substitute Products Are a Strong Force

- Whether substitutes are readily available and attractively priced
- Whether buyers view substitutes as being comparable or better
- How much it costs end users to switch to substitutes

In the Telecommunication Industry IEEE 802.11 (WIFI), 802.16 (WIMAX) and Voice over Internet Protocol (VOIP) show that Substitute Products can be a Serious Threat to the competing sellers

IEEE 802.11

- **IEEE-Standard (Institute of Electrical and Electronics Engineers), vgl. IEEE 802.3 (Ethernet), IEEE 802.5 (Token Ring)**
- **Various 802.11, 802.11a, 802.11b, 802.11g**
- **2,4 GHz (worldwide) (802.11 a: 5 GHz)**
- **Bandwith: > 54 Mbit/s**

Complementary Wireless Technologies

3G Public Networks UMTS / CDMA2000	802.11 Networks (WLAN or WiFi)
Ubiquitous Outdoor Coverage	Good In-building Coverage - Enterprise - Campus - Hot Spot
Fully Mobile Bandwidth (~2.4Mbps)	Zero Cost Unlicensed Spectrum
Roaming Agreements	Low Cost Infrastructure
Bundled with Voice	Higher Bandwidth (<11Mbps)
Unified Billing	Access Device Built into Endpoint

WiFi in coffee shops

WLAN Strengths and Weaknesses

W-LAN System	802.11b	802.11a	802.11g	HiperLAN2
Spectrum	2.4 GHz	5 GHz	2.4 GHz	5 GHz
Max Speed	11 Mbps	54 Mbps	54 Mbps	54 Mbps
Availability	Currently Available	Currently Available	Currently Available	Recently Introduced
Strengths	Wide acceptance, Interoperability	Uses 5 GHz Range, Uses similar software architecture to 802.11b	Backwards-Compatible with 802.11b	High Degree of Security, Expected to offer roaming on WLAN, GPRS, CDMA and UTMS networks
Drawbacks	Poor Security, Low Speed	Not Backwards Compatible, Negligible improvements in security	Uses crowded 2.4 GHz band	Only to be offered in Japan and Europe

WLAN Hot Spots in Europe (IEEE 802.11 Networks)

Public WLAN Hot-Spots (gateway locations. Europe by Location Type

	2,001	2,002	2,003	2,004	2,005	2,006	2,007
Airports	5	24	48	82	103	128	137
Hotels	48	333	2,225	4,099	5,606	7,130	8,059
coffee shops/resaurants	10	230	1,824	4,720	6,710	8,050	9,330
convention centers	-	15	57	140	210	244	257
Shopping Malls	-	15	20	89	216	319	390
Enterprise guesting area	10	130	423	888	1,253	1,468	1,659
Stations and ports	-	32	240	940	1,770	2,210	2,450
Community Hot Spots	-	45	370	2,120	5,410	8,800	12,250
Other	-	8	14	50	129	240	308
Total	73	832	5,221	13,127	21,406	28,589	34,840

Hot Spot Verzeichnis BRD:
http://mobileaccess.de/portal/
http://mobileaccess.de/wlan/

Source: Gartner Group

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WLAN Hot Spots in Asia (IEEE 802.11 Networks)

Public WLAN Hot-Spots (gateway locations)
Asia/Pac

	2001	2002	2003	2004	2005	2006	2007
Airports	5	18	29	42	51	58	65
Hotels	56	308	770	1,281	1,946	2,590	3,150
coffee shops/resaurants	-	59	4,060	7,810	11,550	14,170	15,400
convention centers	5	11	28	60	110	178	195
Shopping Malls	3	24	173	294	387	459	509
Enterprise guesting areas	18	120	400	880	1,294	1,629	1,792
Stations and ports	-	12	166	600	1,115	1,480	1,850
Community Hot Spots	-	3	920	2,320	3,850	7,600	12,360
Other	-	6	23	105	245	426	658
Total	87	552	5,626	10,967	16,454	20,564	22,961

Source: Gartner Group

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WLAN Hot Spots in North America (IEEE 802.11 Networks)

Table 3							
Public WLAN Hot-Spots (gateway locations)							
North America							
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Airports	64	94	117	129	132	135	135
Hotels	437	1,070	2,274	3,705	5,845	7,169	8,561
coffee shops/resaurants	460	1,380	4,650	10,210	12,650	13,760	14,141
convention centers	7	152	330	488	566	617	624
Shopping Malls	-	13	200	551	1,183	2,035	2,692
Enterprise guesting areas	50	600	1,490	2,760	3,360	3,888	3,980
Stations and ports	-	16	51	235	516	874	1,029
Community Hot Spots	2	20	450	2,120	3,900	5,540	6,500
Other	-	15	51	235	516	910	1,172
Total	1,020	3,359	9,613	20,433	28,668	34,928	38,834

Source: Gartner Group

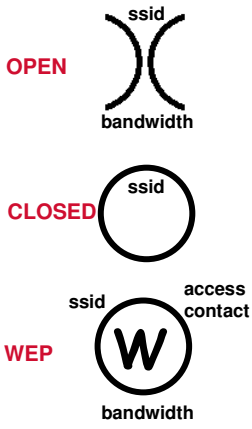
Click Online Hotspots Global

How Many WLANs Are Publicly Visible in the US?

Netstumbler's USA National Guide

Source: www.netstumber.com

Let's Warchalk!



Source: www.warchalking.org

Try Out: http://www.nycwireless.net/ and http://www.freenetworks.org and http://www.wigle.net

Wireless ATMs - Banking

- Wireless Transmissions vs. Land line connections provides:
  - Quicker Deployment
  - Lower monthly cost
  - Mobility of ATMs

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Cisco Wireless IP Phone 7920 – Runs Voice / 802.11b

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WIFI Phone: F1000 from UTStarcom

Source: http://www.heise.de/newsticker/meldung/61386

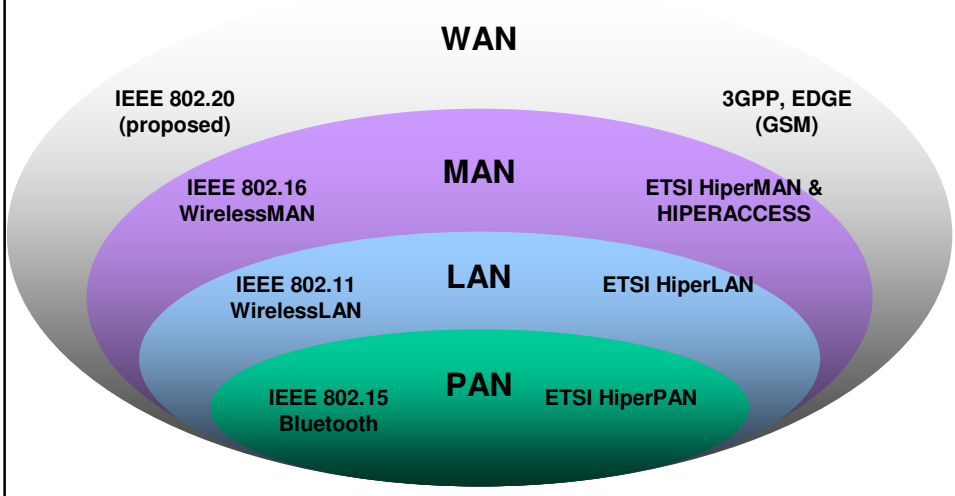
Netgear Skype WiFi Phone

WIFI-Video Phone from Thomson

What is IEEE 802.16 / WiMAX / ETSI HiperMAN?

- European Telecomunication Standardisation Institute (ETSI) HiperMAN and IEEE 802.16 represent a GLOBAL standard for a wireless broadband access
  - akin to Cable, DSL and Ex-level services
- Designed from the ground up for outdoor, long range, carrier class applications
  - High throughput, non line of sight propagation, scalability for up to 1000's of users, QoS
- Supports both licensed and license-exempt spectrum
- Applicable in many markets – from dense urban environments to rural areas
  - Where there is no existing or poor wired infrastructure
- IEEE 802.16e extension enables nomadic capabilities for laptops
  - Broadband connectivity beyond hot spots
- Wi-Fi and WiMAX are complementary
- WiMAX is to 802.16 as Wi-Fi is to 802.11

Overview of Global Wireless Standards



Wireless Platforms

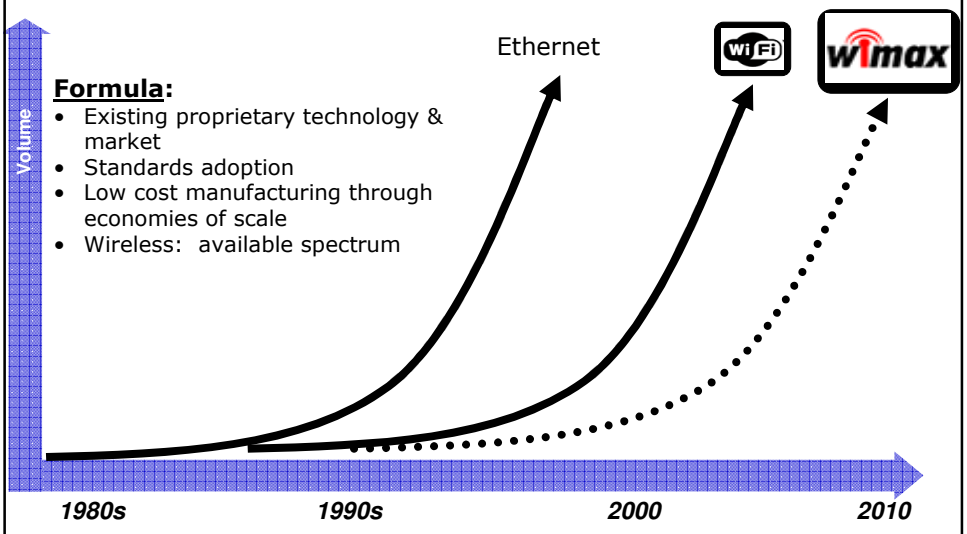
Fixed
Licensed and Unlicensed
T1 & DSL level service

Portable
Licensed and Unlicensed
Consumer DSL level service

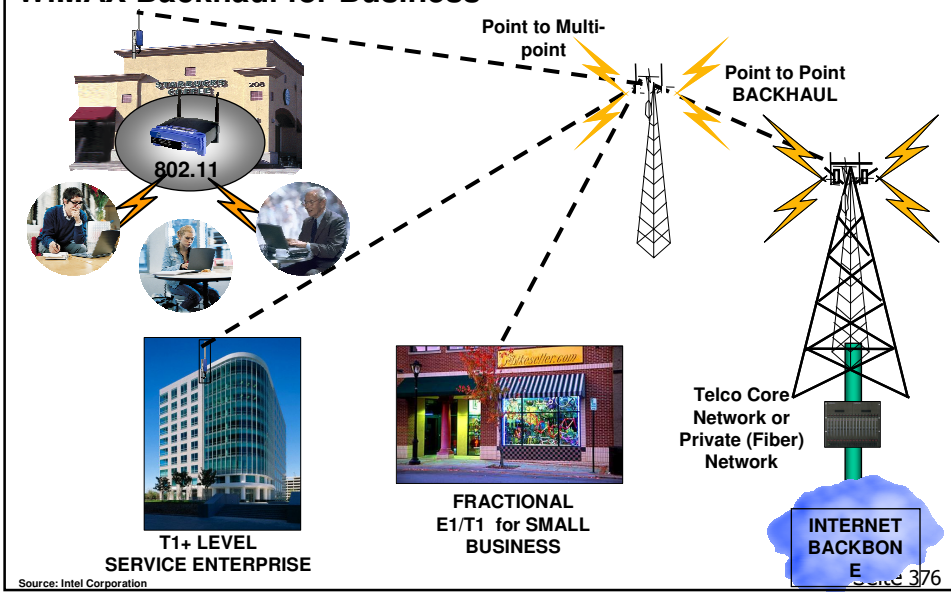
Mobile
Licensed
Wideband Data Rates

- Enterprise / Backhaul → 802.16 HiperMAN
- Residential access → 802.16 HiperMAN
- Destination based → 802.11 Hot Spots
- Nomadic → 802.16e
- Cellular Wideband → 2.5G, 3G

Wireless Platforms

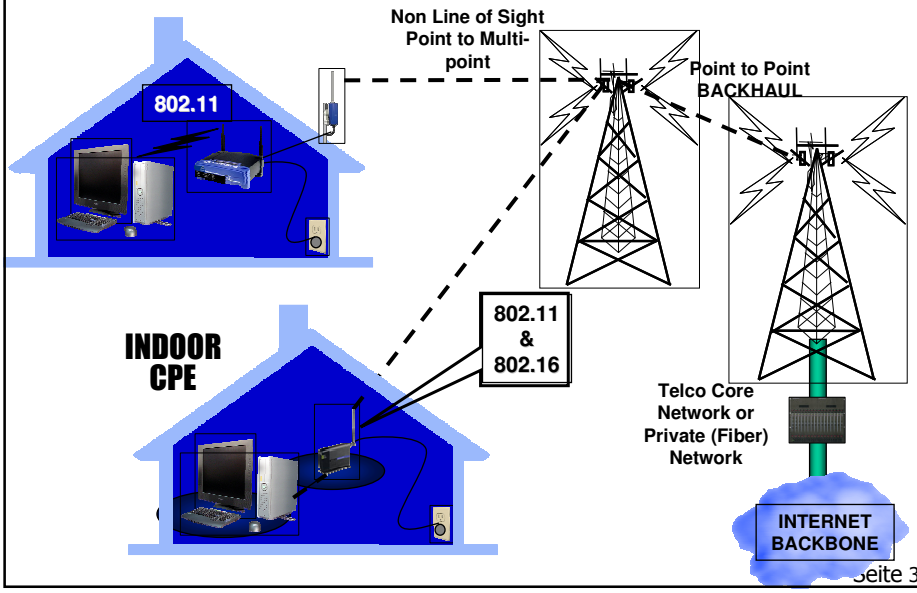


WiMAX Backhaul for Business



Source: Intel Corporation

WiMAX Consumer Last Mile



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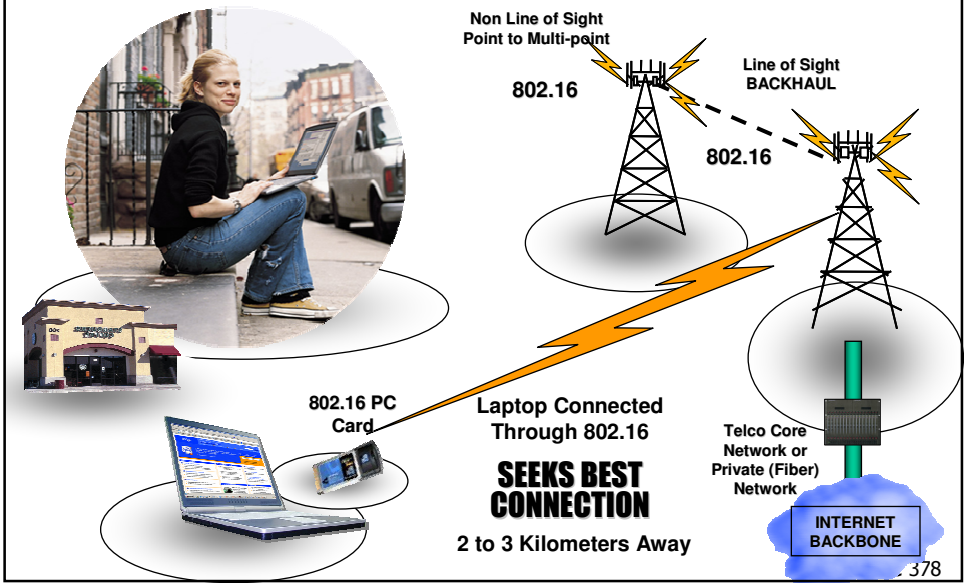
WiMAX Nomadic / Portable



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IEEE 802.16 Standard

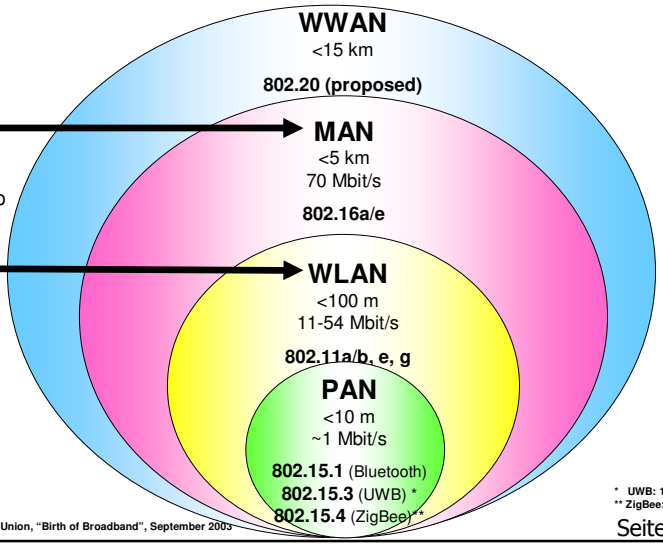
	802.16	802.16a/HiperMAN	802.16e
Completed	December 2001	January 2003 (802.16a)	Estimate mid '04
Spectrum	10 - 66 GHz	< 11 GHz	< 6 GHz
Channel Conditions	Line of Sight Only	Non Line of Sight	Non Line of Sight
Bit Rate	32 – 134 Mbps in 28MHz channel bandwidth	Up to 75 Mbps in 20MHz channel bandwidth	Up to 15 Mbps in 5MHz channel bandwidth
Modulation	QPSK, 16QAM and 64QAM	OFDM 256 sub-carriers QPSK, 16QAM, 64QAM	Same as 802.16a
Mobility	Fixed	Fixed, Portable	Nomadic Mobility
Channel Bandwidths	20, 25 and 28 MHz	Scalable 1.5 to 20 MHz	Same as 802.16a with UL sub-channels
Typical Cell Radius	2-5 km	7 to 10 km Max range 50 km	2-5 km

www.wimaxforum.org

A "Net-Centric" Industry Perspective – IEEE Standards View of Wireless Network Technologies

WiMAX
New standard for Fixed broadband Wireless. Trying to do for MAN what Wi-Fi did for LAN.

Wi-Fi®
Includes 802.11a/b/g. Products must be Approved for Interoperability by the Wi-Fi Alliance.



* UWB: 100 Mbit/s
** ZigBee: 250 kbps

Source: International Telecommunications Union, "Birth of Broadband", September 2003

Factors Affecting Competition From Substitute Products

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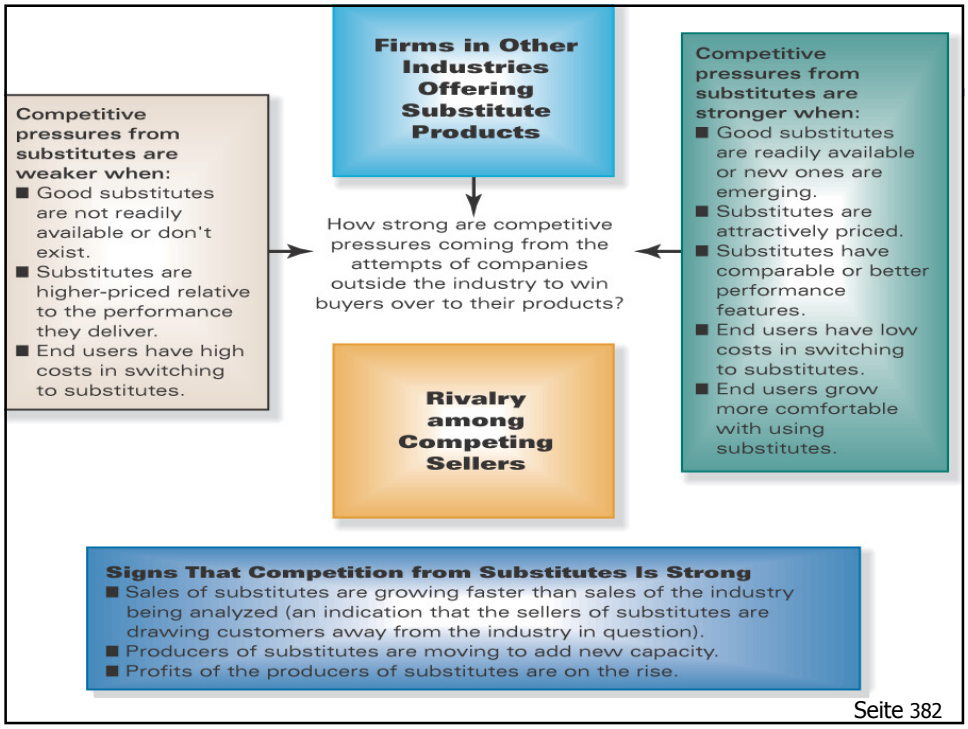

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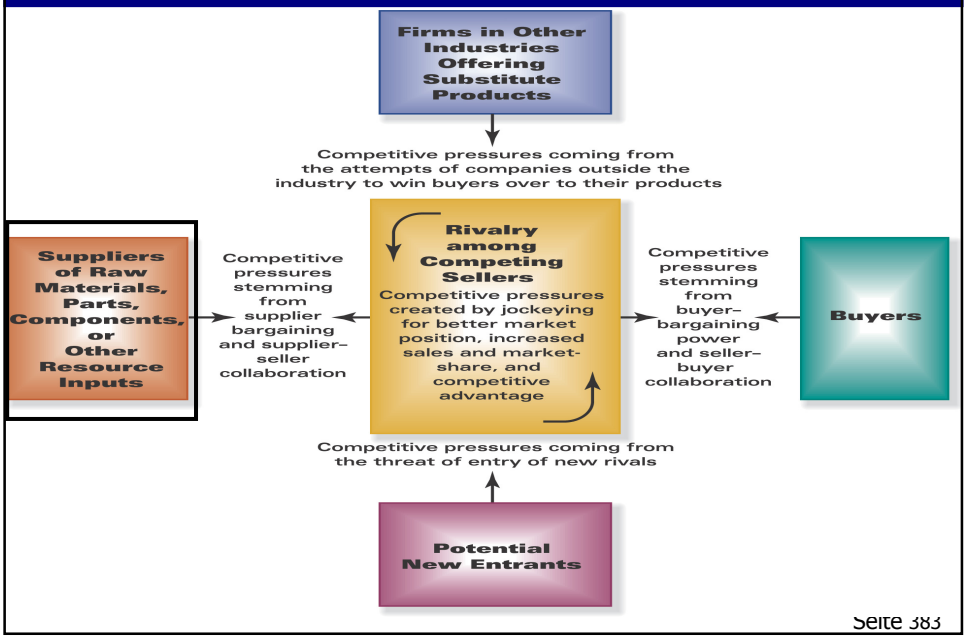

Competitive Pressures From Suppliers and Supplier-Seller Collaboration

Whether supplier-seller relationships represent a ***weak*** or ***strong*** competitive force depends on

- Whether suppliers can exercise sufficient bargaining leverage to influence terms of supply in their favor
- Nature and extent of supplier-seller collaboration in the industry

Factors Affecting the Bargaining Power of Suppliers

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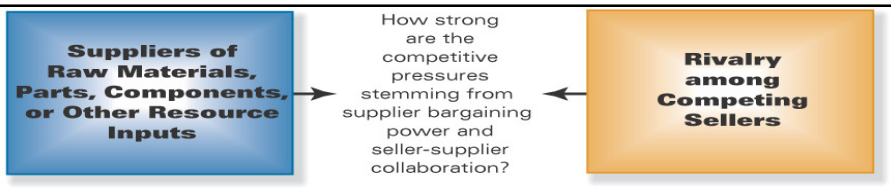

Supplier bargaining power is stronger when:
- Industry members incurs high costs in switching their purchases to alternative suppliers.
- Needed inputs are in short supply (which gives suppliers more leverage in setting prices).
- A supplier has a differentiated input that enhances the quality or performance of sellers' products or is a valuable or critical part of sellers' production processes.
- There are only a few suppliers of a particular input.
- Some suppliers threaten to integrate forward into the business of industry members and perhaps become a powerful rival.

Supplier bargaining power is weaker when:
- The item being supplied is a commodity that is readily available from many suppliers at the going market price.
- Seller switching costs to alternative suppliers are low.
- Good substitute inputs exist or new ones emerge.
- There is a surge in the availability of supplies (thus greatly weakening supplier pricing power).
- Industry members account for a big fraction of suppliers' total sales and continued high volume purchases are important to the well-being of suppliers.
- Industry members are a threat to integrate backward into the business of suppliers and to self-manufacture their own requirements.
- Seller collaboration or partnering with selected suppliers provides attractive win-win opportunities.

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Factors Affecting the Bargaining Power of Buyers

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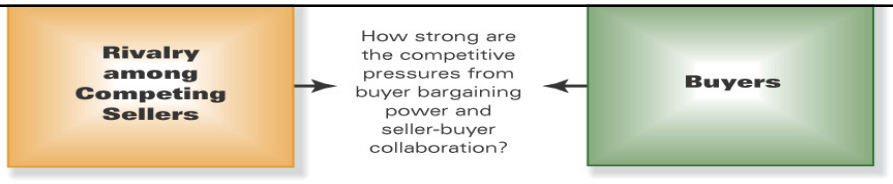

Buyer bargaining power is stronger when:
- Buyer switching costs to competing brands or substitute products are low.
- Buyers are large and can demand concessions when purchasing large quantities.
- Large-volume purchases by buyers are important to sellers.
- Buyer demand is weak or declining.
- There are only a few buyers—so each one's business is important to sellers.
- Identity of buyer adds prestige to the seller's list of customers.
- Quantity and quality of information available to buyers improve.
- Buyers have the ability to postpone purchases until later if they do not like the present deals being offered by sellers.
- Some buyers are a threat to integrate backward into the business of sellers and become an important competitor.

Buyer bargaining power is weaker when:
- Buyers purchase the item infrequently or in small quantities.
- Buyer switching costs to competing brands are high.
- There is a surge in buyer demand that creates a "sellers' market."
- A seller's brand reputation is important to a buyer.
- A particular seller's product delivers quality or performance that is very important to buyer and that is not matched in other brands.
- Buyer collaboration or partnering with selected sellers provides attractive win-win opportunities.

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Strategic Implications of the Five Competitive Forces

Strategic Implications of the Five Competitive Forces

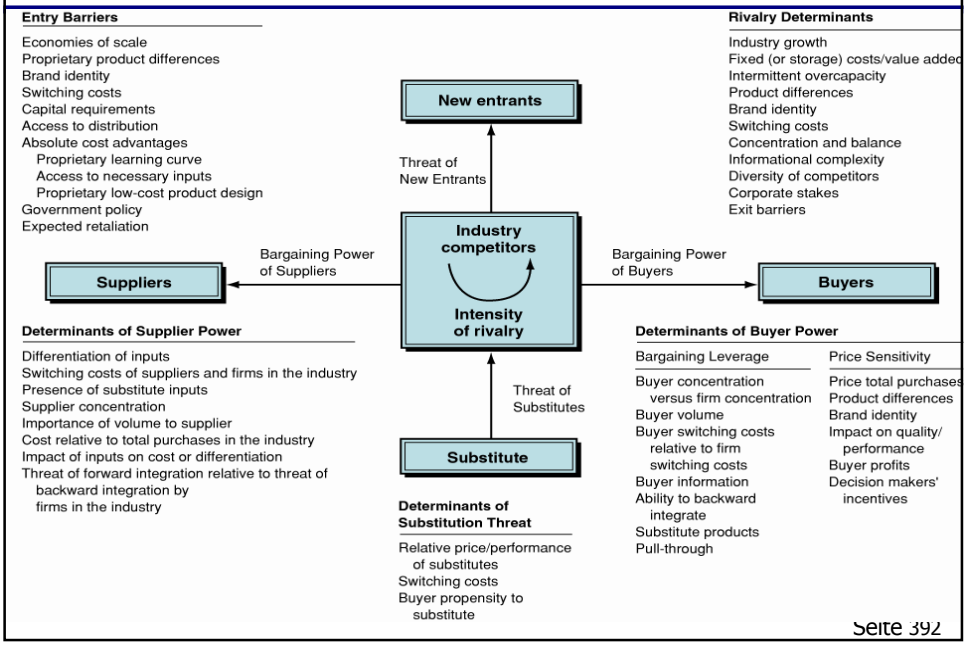
Competitive ***environment*** is ***unattractive*** from the standpoint of earning good profits when

- Rivalry is vigorous
- Entry barriers are low and entry is likely
- Competition from substitutes is strong
- Suppliers and customers have considerable bargaining power

Strategic Implications of the Five Competitive Forces

An industry's competitive ***environment*** is ***ideal*** from a profit-making standpoint when

- Rivalry is moderate
- Entry barriers are high and no firm is likely to enter
- Good substitutes do not exist
- Suppliers and customers are in a weak bargaining position



Learning/Experience Curve Effects

Learning/Experience Curve Effects

- ***Learning/experience effects*** exist when a company's unit costs decline as its ***cumulative*** production volume increases because of
  - Accumulating ***production know-how***
  - ***Growing mastery of the technology***
- The bigger the ***learning or experience curve effect***, the bigger the cost advantage of the firm with the largest ***cumulative*** production volume

The Factors Driving Industry Change and Their Anticipated Impact

- Industries change because ***forces*** are ***driving*** industry ***participants*** to ***alter their actions***
- ***Driving forces*** are the ***major underlying causes*** of changing industry and competitive conditions

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Analyzing Driving Forces

Identify forces likely to exert ***greatest influence*** over next 1 - 3 years

- Usually no more than 3 - 4 factors qualify as ***real drivers of change***

Assess ***impact***

- Are the driving forces causing ***demand for product*** to increase or decrease?
- Are the driving forces acting to make ***competition*** more or less intense?
- Will the driving forces lead to higher or lower industry ***profitability****?*

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Industry Driving Forces

Seite 397

1. Growing use of the Internet and emerging new Internet technology applications.
2. Increasing globalization of the industry.
3. Changes in the industry's long-term growth rate.
4. Changes in who buys the product and how they use it.
5. Product innovation.
6. Technological change and manufacturing process innovation.
7. Marketing innovation.
8. Entry or exit of major firms.
9. Diffusion of technical know-how across more companies and more countries.
10. Changes in cost and efficiency.
11. Growing buyer preferences for differentiated products instead of standardized commodity products (or for a more standardized product instead of strongly differentiated products).
12. Reductions in uncertainty and business risk.
13. Regulatory influences and government policy changes.
14. Changing societal concerns, attitudes, and lifestyles.

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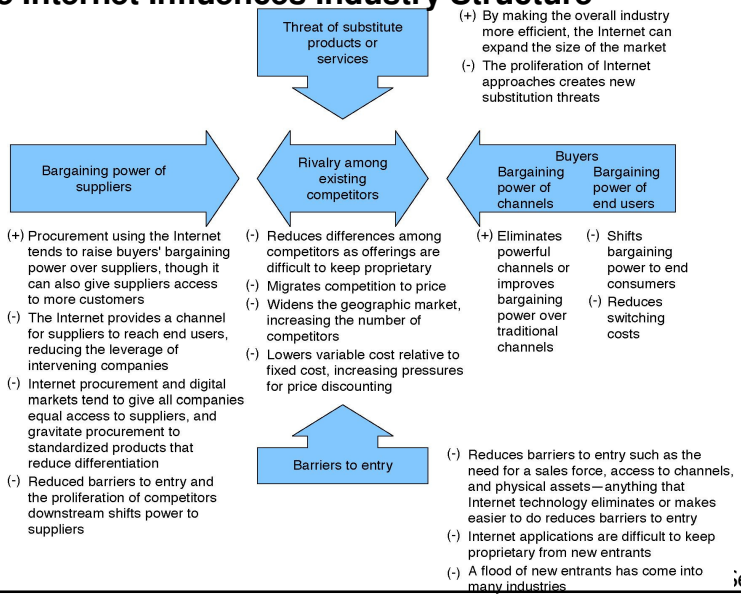
Information Technology (IT) Influence on 5 Forces

Information Technology (IT) Influence on 5 Forces

Competitive Force	IT Influence on Competitive Force
Threat of New Entrant	▪ Can be lowered if there are barriers to entry. Sometimes IS can be used to create barriers to entry
Bargaining Power of Buyers	▪ Can be high if it's easy to switch. *Switching costs* are increased by giving buyers things they value in exchange such as lower costs or useful information
Bargaining Power of Suppliers	▪ Forces is strongest when there are few firms to choose from, quality is inputs is crucial or the volume of purchases is insignificant to the supplier
Threat of Substitute Products	▪ Depends on buyers' willingness to substitute and the level of switching costs buyer's face
Industrial Competitors	▪ Rivalry is high when it is expensive to leave and industry, the industry's growth rate is declining, or products have lost differentiation

How the Internet Influences Industry Structure



Coping With the Five Competitive Forces

Objective is to ***craft*** a ***strategy*** to

- ***Insulate*** firm from competitive pressures
- ***Initiate actions*** to ***produce sustainable competitive advantage***
- Allow firm to be the industry's "mover and shaker" with the "most powerful" strategy that ***defines*** the ***business model*** for the industry and that may shape the "rules of competition and market engagement"

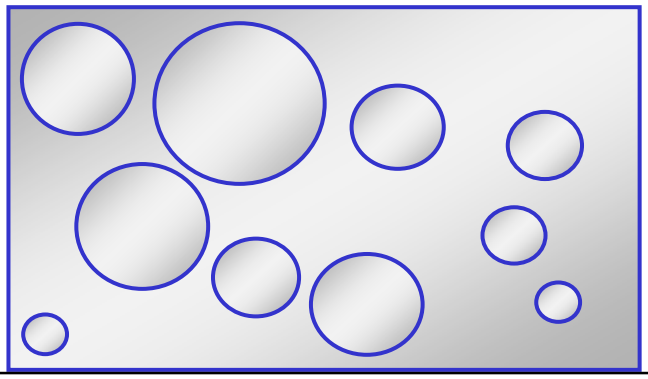
Industry Analysis

–

Competitior Analyzis

What Are the Market Positions of Industry Rivals?

- One technique for revealing the different competitive positions of industry rivals is *strategic group mapping*
- A *strategic group* consists of those rivals with similar competitive approaches in an industry



Strategic Group Mapping

- Firms in *same strategic group* have two or more *competitive characteristics* in common
  - Have comparable product line breadth
  - Sell in same price/quality range
  - Emphasize same distribution channels
  - Use same product attributes to appeal to similar types of buyers
  - Use identical technological approaches
  - Offer buyers similar services
  - Cover same geographic areas

Procedure for Constructing a Strategic Group Map

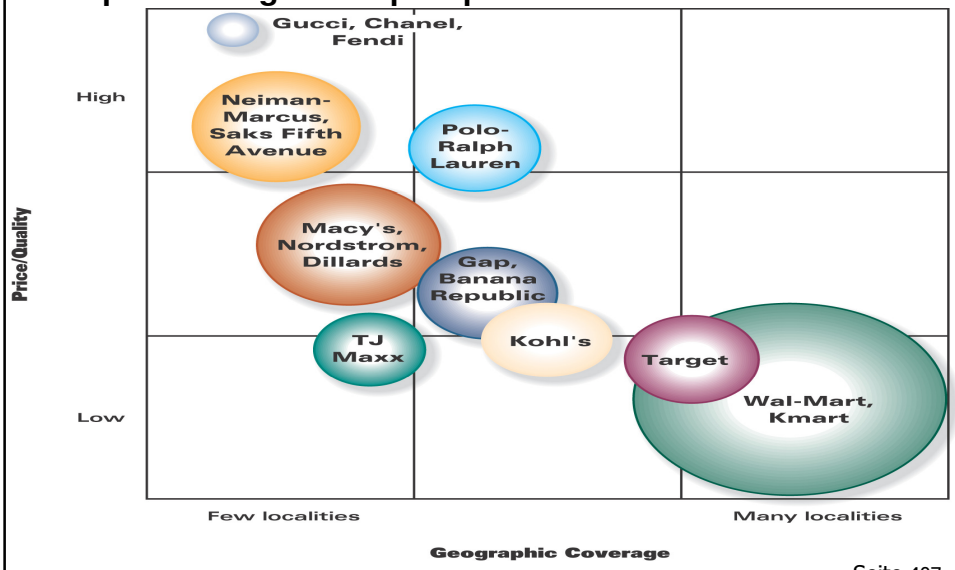
STEP 1: Identify at least two competitive characteristics that differentiate firms in an industry from one another

STEP 2: Plot firms on a two-variable map using pairs of these differentiating characteristics

STEP 3: Assign firms that fall in about the same strategy space to same strategic group

STEP 4: Draw circles around each group, making circles proportional to size of group's respective share of total industry sales

Example: Strategic Group Map of Selected Retail Chains



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Guidelines: Strategic Group Maps

- Variables selected as axes **should not be highly correlated**
- Variables chosen as axes should expose **big differences** in how rivals compete
- Variables **do not** have to be either quantitative or continuous
- Drawing sizes of circles proportional to combined sales of firms in each strategic group allows map to reflect relative sizes of each strategic group
- If more than two competitive variables can be used as differentiating characteristics, several maps can be drawn – **there's not always one single best strategic group map**

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What Can Be Learned from Strategic Group Maps

- Driving forces and competitive pressures often favor some strategic groups and hurt others
- Profit potential of different strategic groups often varies due to strengths and weaknesses in each group's market position
- The closer strategic groups are to each other on the map, the stronger the competitive rivalry between them tends to be

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Predicting the Next Strategic Moves Rivals Are Likely to Make

A firm's ***best strategic moves*** are affected by

- Current strategies of competitors
- Future actions of competitors

Profiling key rivals involves gathering ***competitive intelligence*** about

- Current strategies
- Most recent actions and public announcements
- Resource strengths and weaknesses
- Efforts being made to improve their situation
- Thinking and leadership styles of top executives

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Putting a "Scouting Report" Together

Sizing up strategies, resource ***strengths***, and competitive ***weaknesses*** of *rivals* involves ***monitoring*** each rivals moves in the marketplace, what its management is saying and doing, and assessing

- Which rival has the best strategy? Which rivals appear to have weak strategies?
- Which firms are poised to gain market share, and which ones seen destined to lose ground?
- Which rivals are likely to rank among the industry leaders five years from now? Do any up-and-coming rivals have strategies and resources to overtake the current industry leader?

Predicting Moves of Rivals: Things to Consider

- Which rivals need to increase their unit sales and market share? What strategies are rivals most likely to pursue?
- Which rivals have a strong incentive, along with resources, to make major strategic changes?
- Which rivals are good candidates to be acquired? Which rivals have the resources to acquire others?
- Which rivals are likely to enter new geographic markets?
- Which rivals are likely to expand their product offerings and enter new product segments?

Key Goals of the U.S. Economic System

Economic Growth

- Aggregate Output and Standard of Living
- Gross Domestic Product
  - Real Growth Rate
  - GDP per Capita
  - Real GDP
  - Purchasing Power Parity
- Productivity
- Balance of Trade
- National Debt

Economic Stability

- Inflation
  - Measuring Inflation: The CPI
- Unemployment
  - Recessions and Depressions

Aggregate Output and Standard of Living

- Business cycle **is a pattern of short-term ups and downs (*expansions* and *contractions*) in an economy**
- Aggregate output **is the total quantity of goods and services produced by an economic system during a given period**
- Standard of living **is the total quantity and quality of goods and services that a country's citizens can purchase with the currency used in their economic system**

U.S. GDP and GDP per Capita

Gross Domestic Product (GDP) ($ Billion)	GDP: Real Growth Rate (%)	GDP Per Capita: Purchasing Power Parity
9,255.00	4.1	$33,900

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Gross Domestic Product

- GDP**, or** gross domestic product**, is the total value of all goods and services produced within a given period by a national economy through domestic factors of production**

- GNP**, or** gross national product**, is the total value of all goods and services produced by a national economy within a given period *regardless* of where the factors of production are located**

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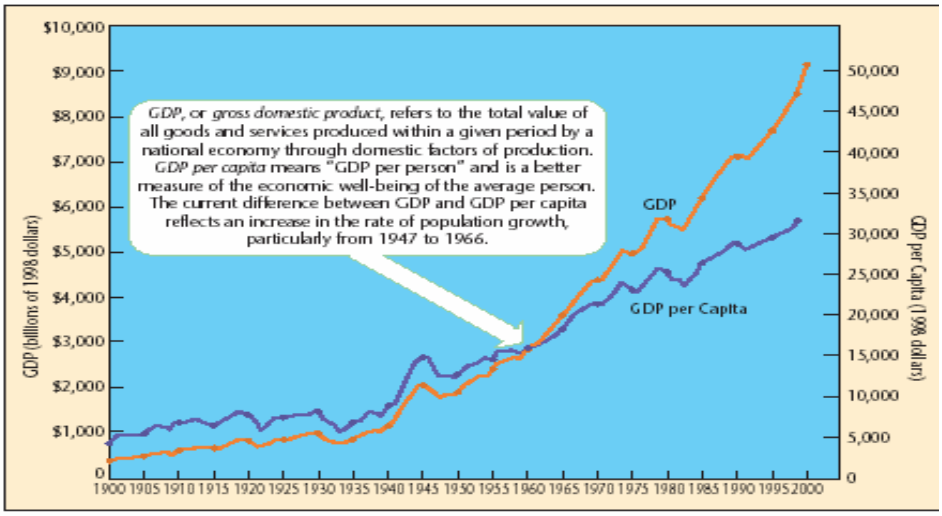
U.S. GDP and GDP per Capita



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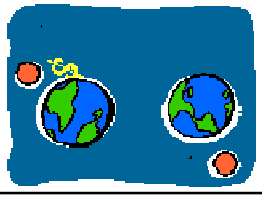
What Is Purchasing Power Parity?

- **Principle that exchange rates are set so that the prices of similar products in different countries are about the same**



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What Is Productivity?

- **Measure of economic growth that compares how much a system produces with the resources needed to produce it**

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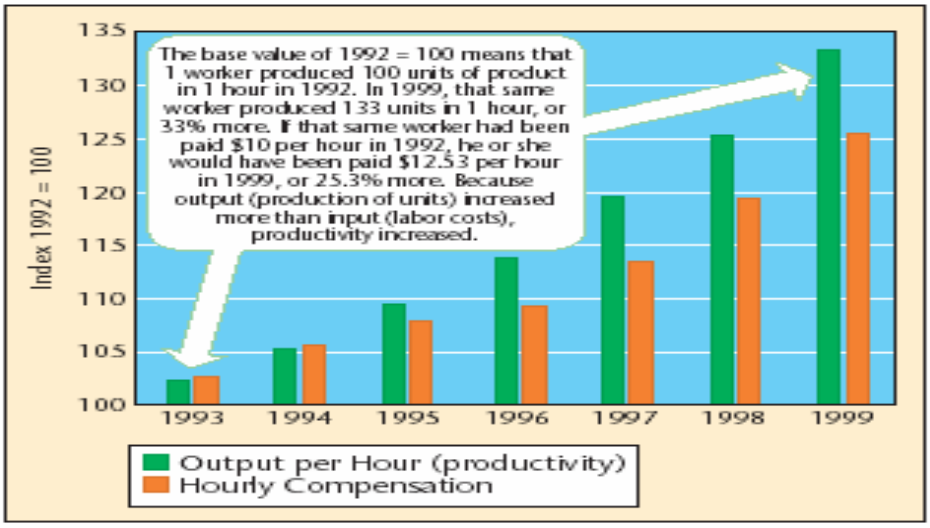
Productivity and Labor Compensation in U.S. Manufacturing



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What Is Balance of Trade?

- Economic value of all the products that a country *exports* minus the economic value of *imported* products

What Is National Debt?

- Amount of money that a government owes its creditors

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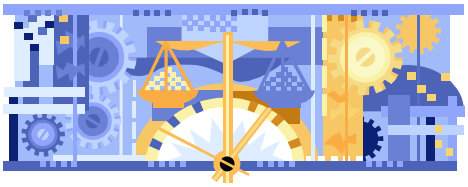
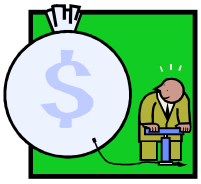
What Is Stability?

- Condition in an economic system in which the amount of money available and the quantity of goods and services produced are growing at about the same rate



What Is Inflation?

- Occurrence of widespread price increases throughout an economic system



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When Did the Cost of a Hamburger Go Up?

YR1 Income	YR2 Income	YR2 % Increase Over YR1 Base	YR3 Income	YR3 % Increase Over YR1 Base
$5,000	$10,000	100	$17,500	250
YR1 Hamburger Price	YR2 Hamburger Price	YR2 % Increase Over YR1 Base	YR3 Hamburger Price	YR3 % Increase Over YR1 Base
$2	$4	100	$7.50	275

Measuring Inflation: The CPI

- **Measure of the prices of typical products purchased by consumers living in urban areas**

What Is Unemployment?

- **Level of joblessness among people actively seeking work in an economic system**

Recessions and Depressions

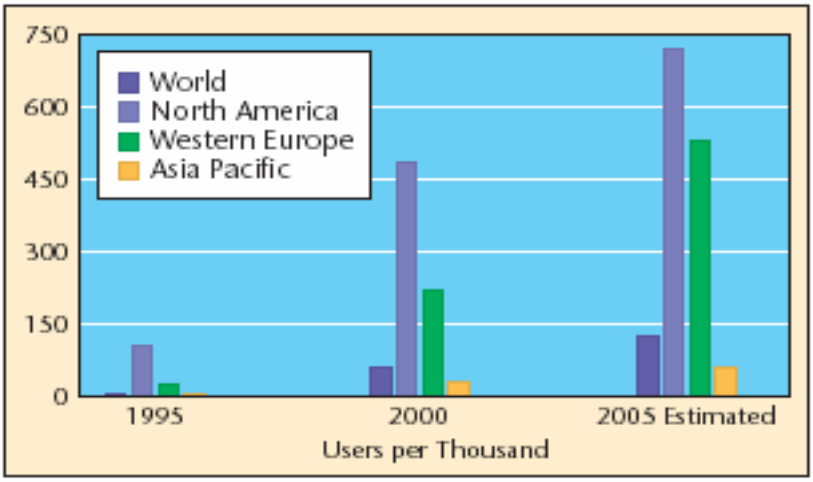
- Recession **is a period during which aggregate output, as measured by real GDP, declines**
- Depression **is a particularly severe and long-lasting recession**

The Global Economy in the 21st Century

Major forces driving the economy:

- **The information revolution will continue to enhance productivity across all economic sectors.**
- **New technological breakthroughs will create entirely new industries.**
- **Increasing globalization will create much larger markets while fostering tougher competition among global businesses.**

Internet Users per 1,000 People



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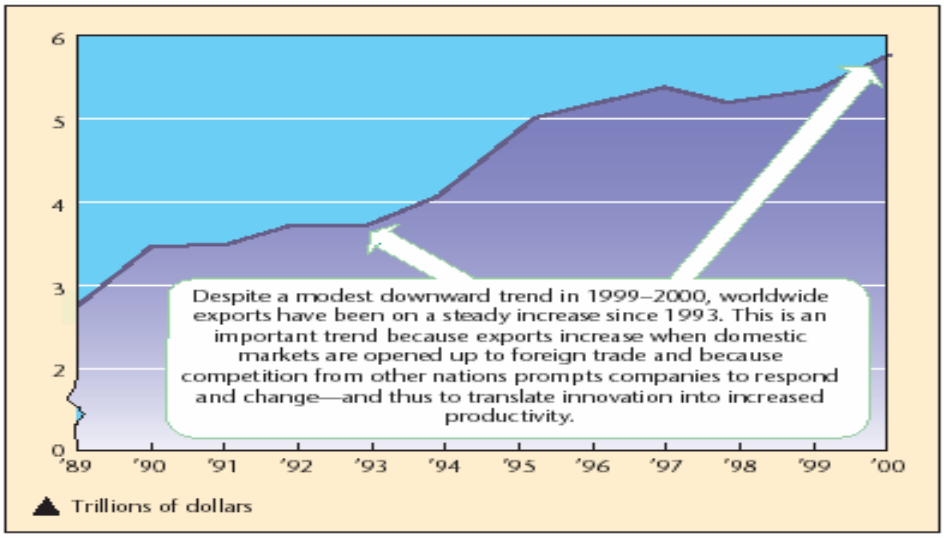
The Export Resurgence



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