

Japan's IT Business and IT Policy

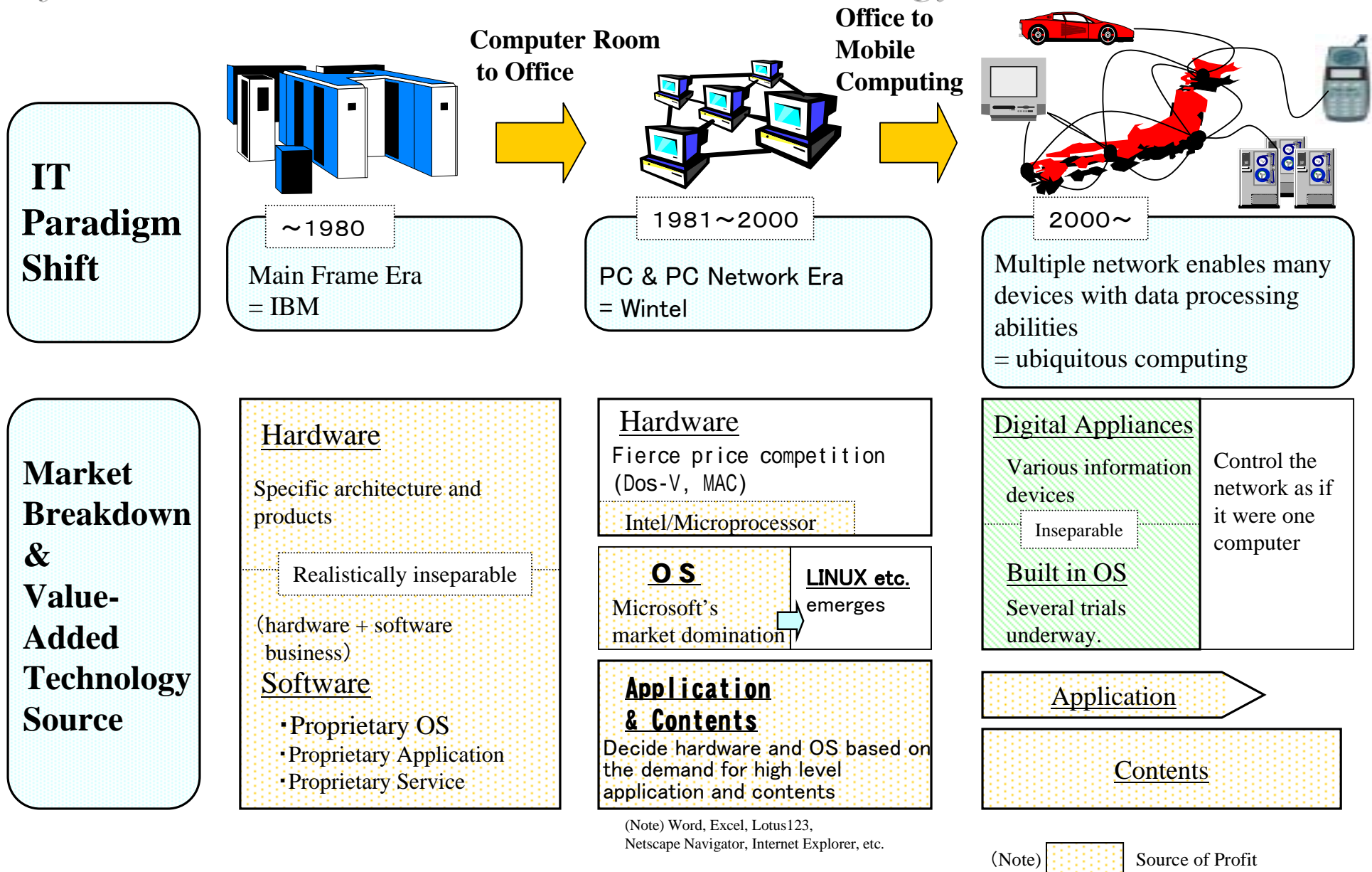
June, 2000

Ministry of International Trade and Industry

1. IT Industry / Where the Growth is

- Technology Stage: Current stage of technology evolution and business opportunities for Japan's IT industry
- Market Stage: The current market and growth outlook for Japan's electronic commerce market
- Japan's IT enterprises: Overall environment
- Policy approach of the Japanese government

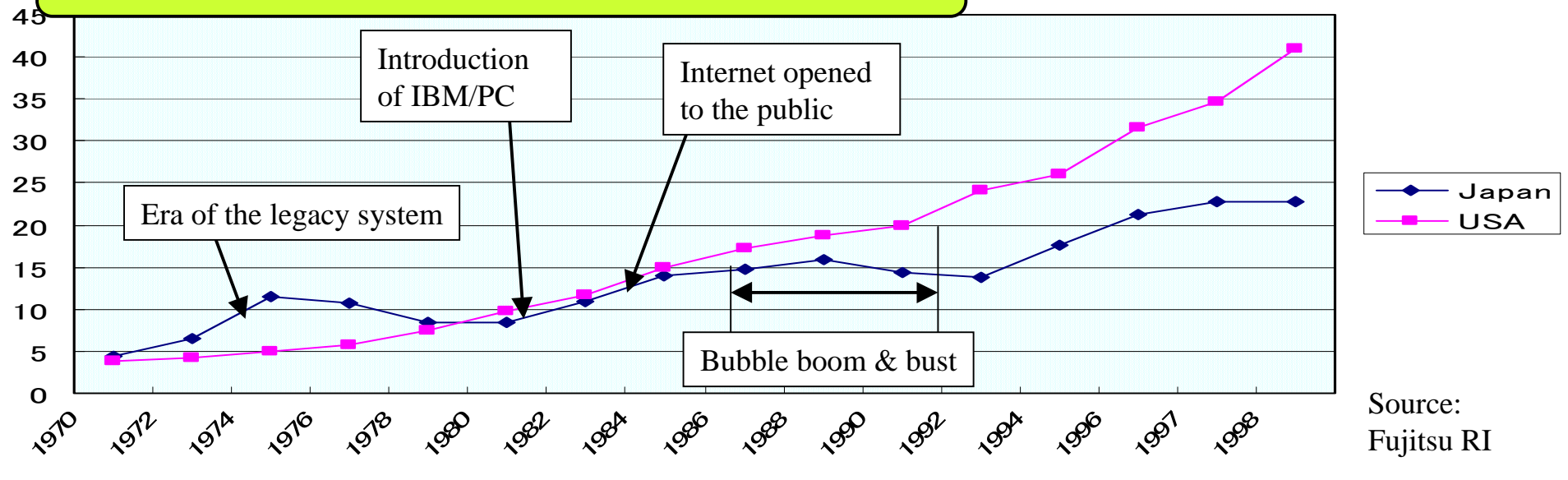
2. Different Stages Based on the Information and Communication Technology Revolution



3. IT Investment Trends

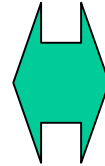
Japan's IT investments stagnated after the burst of the economic bubble, which created a disparity with the U.S. As a result, there is a huge gap between Japan and the U.S. in per worker IT investment. It was unfortunate for Japan that the gap and the IT paradigm shift occurred at the same time. Japan's IT investments started to increase in the latter half of the 1990s, but stagnated during the economic slow down in 1998, which widened the gap. The gap is expected to have narrowed in 1999, through various investment promotion measures.

Ratio of IT investments to total private investments



4. Development of the Network Business “The Japanese Way”

- Japan’s PC shipments
 - = 1997: 7.04 million units
 - 1998: 7.02 million units
 - 1999: 9.22 million units



- NTT-DoCoMo i-mode
 - ★ Started service last February, with current subscribers over 7 million. (Bigger than Nifty which is the largest Internet Service Provider in Japan)
 - ★ i-mode to be installed on all mobile phones of NTT-DoCoMo starting this summer. (There are 60 million mobile telephones in Japan.)
- Sony Play Station 2
 - = Sold 1 million sets in a day
- SEGA Dream Cast: more than half are connected to the Internet
- Car Navigation: VICS, ETC , ITS to be connected to the Internet

- Seven-Dreams, e-shop books (Seven Eleven Japan), “Loppy” (Lawson)
 - = Japan’s geographical character & new e-commerce model utilizing convenience stores
- E-government: Rapid change to an electronic government

5. Comparison of E-Commerce Market (Japan & U.S.)

There is a wide gap between Japan and the U.S. in the e-commerce market. For Business to Consumer (B to C), U.S. is 40 times as large. But this gap will decrease in the coming few years, with Japan's e-commerce market expected to surpass 70 trillion yen in the year 2003.

E-commerce market comparison

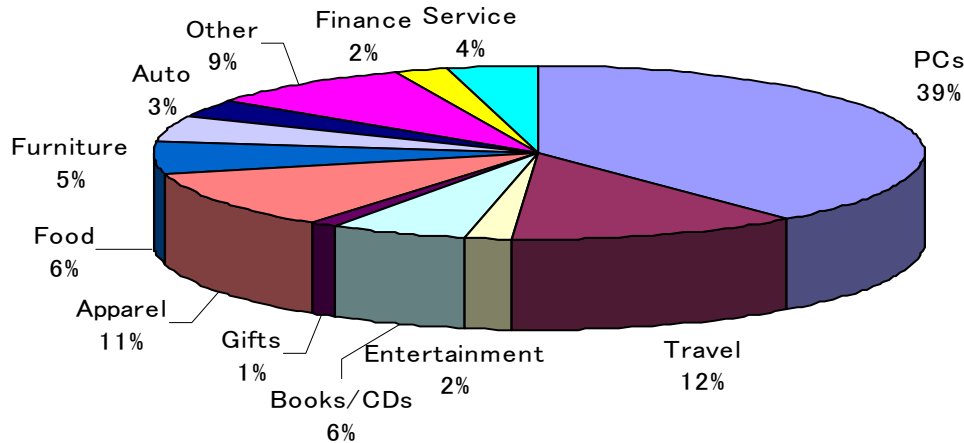
		Japan (trillion yen)				USA (trillion yen)	
		1998	1999	2003	2004	1998	2003
B to C (Business to Consumer)	Mar. '99 survey	0.07	0.19	3.16	-	2.25	21.3
	Jan. '00 survey	-	0.25	3.57	5.54	-	-
B to B (Business to Business)		8.6	-	68.4	-	19.5	165.3

Note: Data based on a joint survey by Andersen Consulting and the Ministry of International Trade and Industry

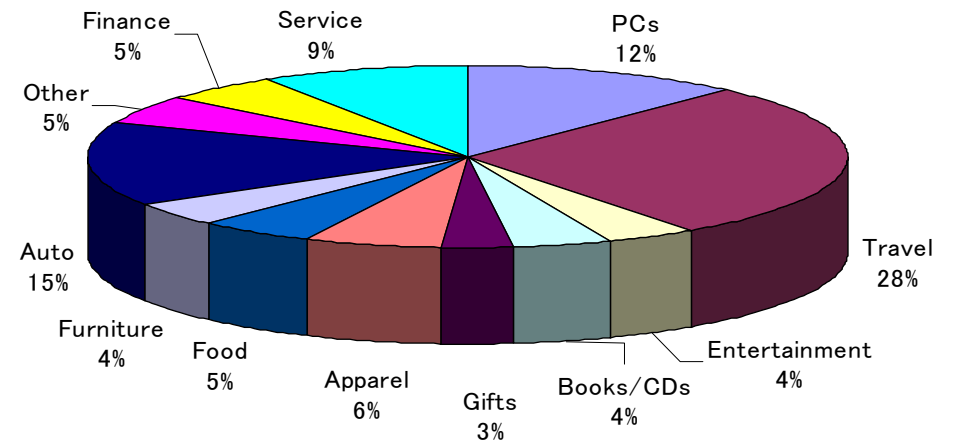
Jan.'00 survey conducted by Andersen Consulting and E-com, e-commerce is defined as commercial transactions through TCP/IP

6. B to C Comparison, Japan & USA (estimate)

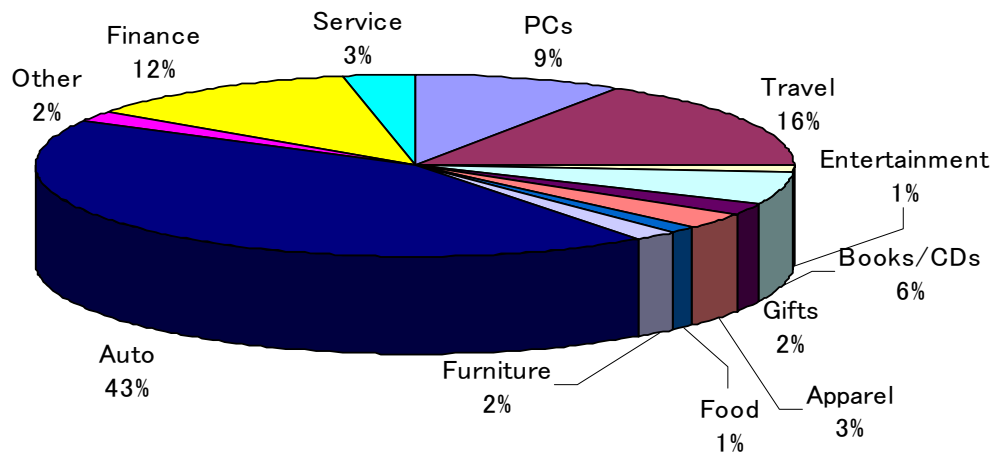
Japan: 1998 (market estimate: ¥65 billion)



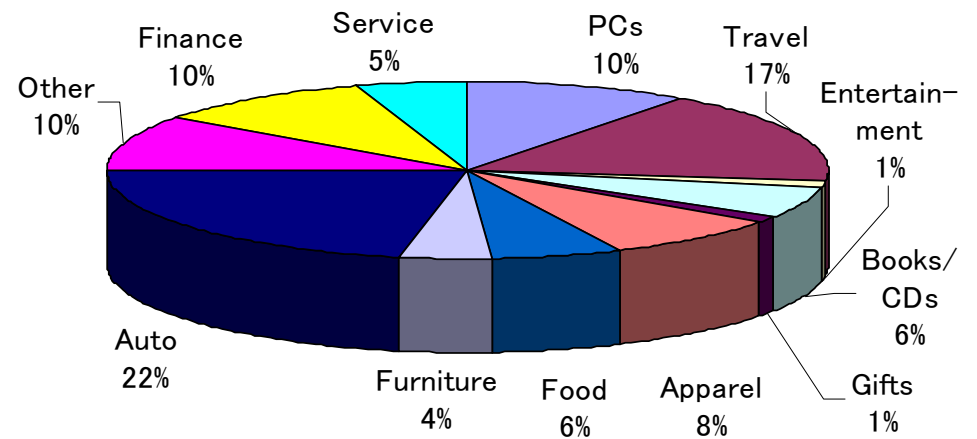
Japan: 2003 (market estimate: ¥3.16 trillion)



USA: 1998 (market estimate: ¥2.25 trillion)



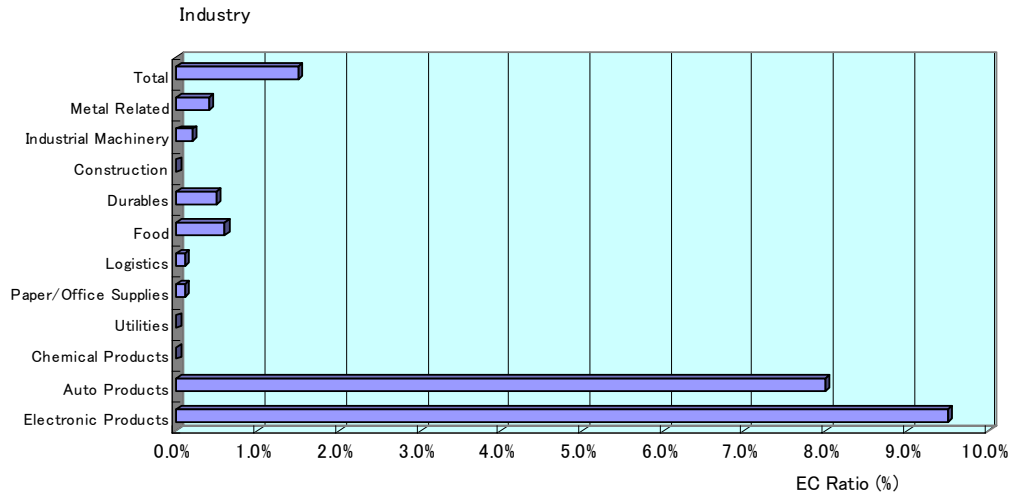
USA: 2003 (market estimate: ¥21.32 trillion)



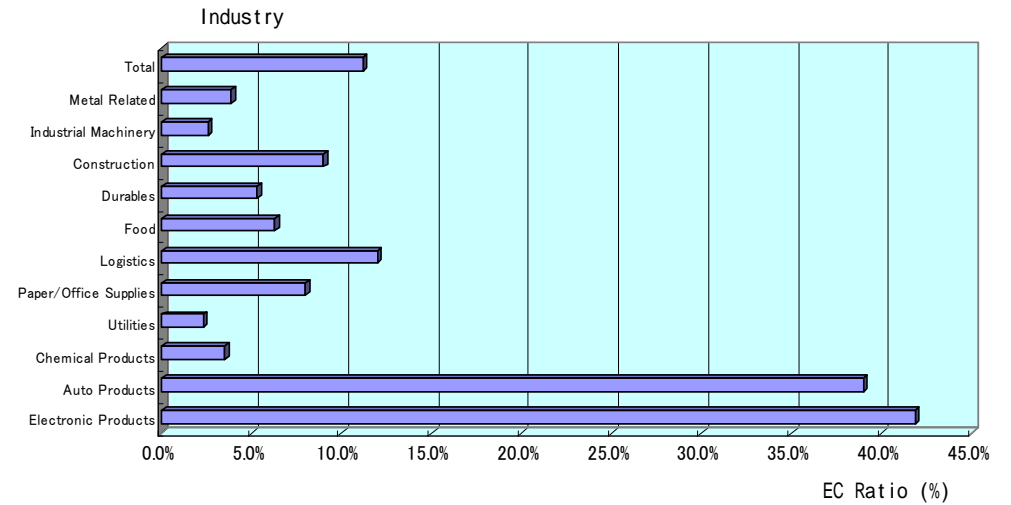
Source: Ministry of International Trade and Industry, Andersen Consulting

7. B to B Comparison, Japan & USA (estimate)

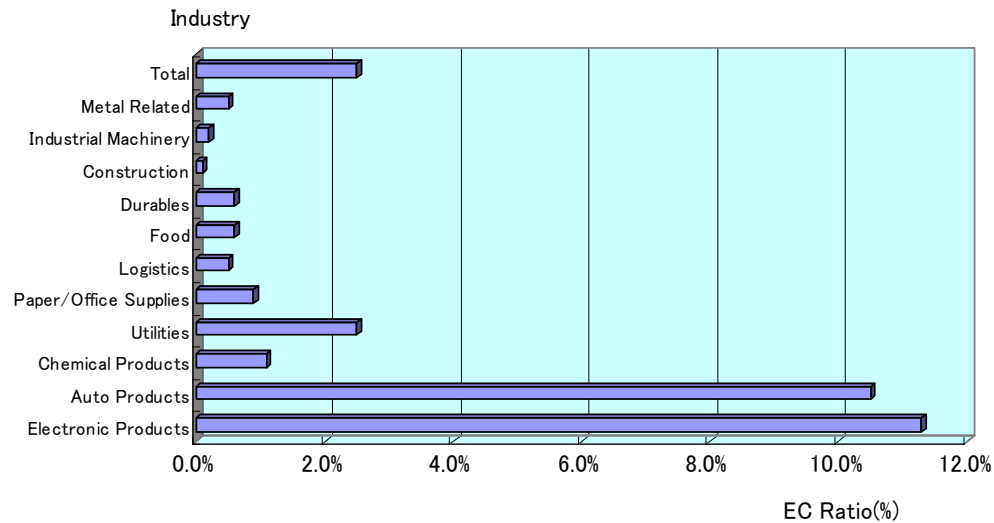
Japan: 1998 (market estimate: ¥8.6 trillion)



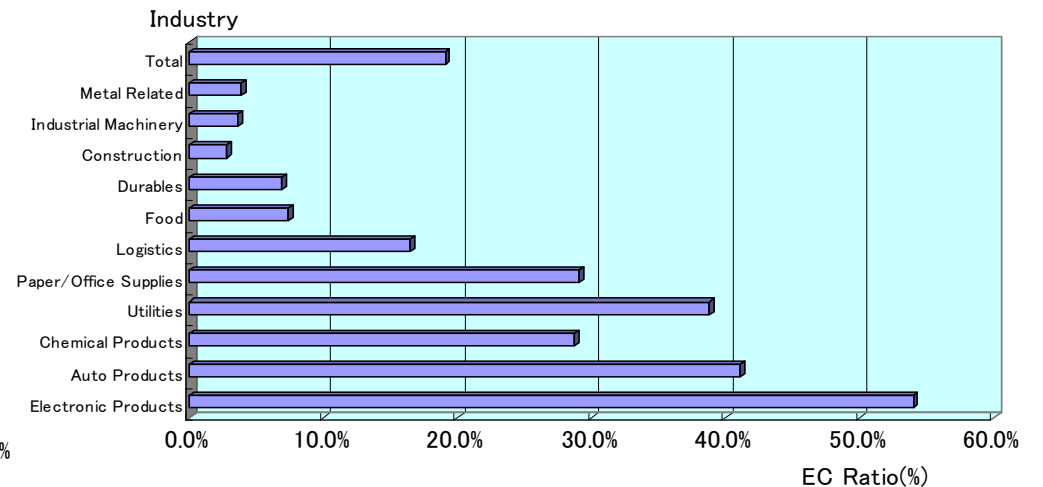
Japan: 2003 (market estimate: ¥68.3 trillion)



USA: 1998 (market estimate: ¥19.5 trillion)



USA: 2003 (market estimate: ¥165.3 trillion)



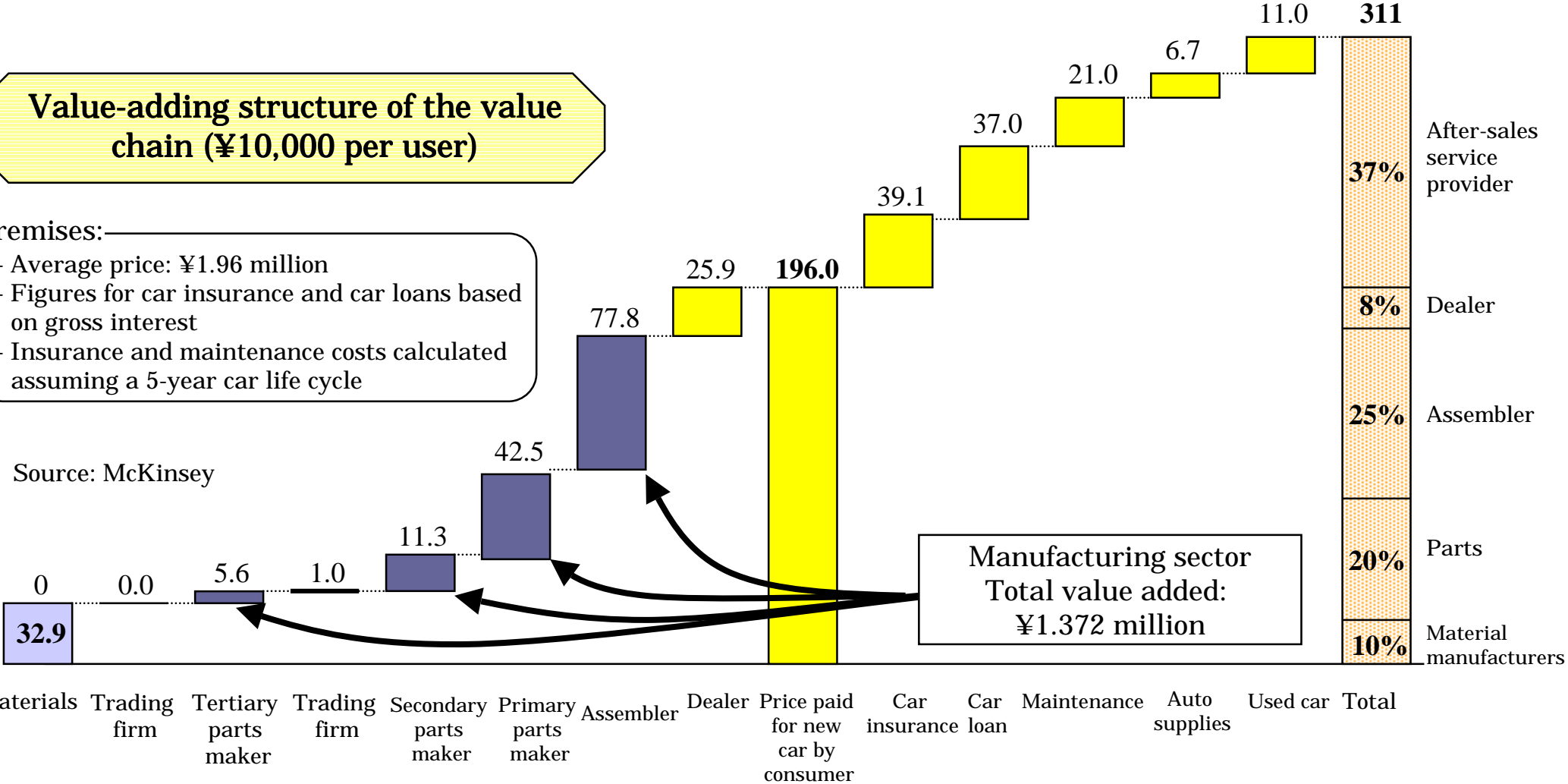
Source: Ministry of International Trade and Industry, Andersen Consulting

8. The Corporate Value Chain and IT in the Auto Industry

Value-adding structure of the value chain (¥10,000 per user)

- Premises:
- Average price: ¥1.96 million
 - Figures for car insurance and car loans based on gross interest
 - Insurance and maintenance costs calculated assuming a 5-year car life cycle

Source: McKinsey



Manufacturing sector
Total value added:
¥1.372 million

Materials Trading firm Tertiary parts maker Trading firm Secondary parts maker Primary parts maker Assembler Dealer Price paid for new car by consumer Car insurance Car loan Maintenance Auto supplies Used car Total

Value chain for providing a car

Value chain for provision of ancillary goods and services

Market size (¥trillion / year)

1.2 2.5 3.5 3.6 6.8 12.9 19.5 21

3.6 1.7 6.5 3.1 5.4

9. Interaction Between Technology Revolution and the Expansion of E-Commerce. What will the new growth model be?

** Introduction of various information devices: Aggregate number of next-generation mobile phones, car navigation systems and next-generation games will surpass the number of PCs. Various platforms for B to C e-commerce*

** Trend towards free business platforms: Importance of open platforms like JAVA and the Internet. The upcoming information devices will be more user-based and usage-focused compared to the all-round PC. (Users do not directly select the operating system or the processor). Examples: i-mode telephone, Play Station 2, car navigation, 3 com palm pilot*

** Improving the network infrastructure will change business practices: ability to exchange programs easily over the internet. Download the program itself from the server.*

> Drastic decline in PC unit prices and maintenance costs

> From package-type businesses to server-type businesses (ASP)

System expandability and flexibility to improve

10. Japan's New IT Business: Overall Environment & Outlook

① Where there is no differentiation: Cost reduction & decline in marginal profit (e.g. hardware, ISP, long-distance communication, e-trade)

② Structural change and an aggressive quest for added value (e.g. ISP shift to ASP, software package tie-up with ASP)

③ Emergence of a new information business field

- e-commerce model based on new information devices (mobile phones, car navigation, games)

- Japan is strong in attractive box manufacturing and there is the possibility that it will become the world's de facto standard (e.g. i-mode, games).

- However, box manufacturing by itself does not usually create added value in the long run.

- Upcoming realization of new technology

- Terrestrial digital broadcasting, next-generation Internet, ITS etc

- Reduce the inefficiencies of the Internet society

- Security, privacy of personal data issues

Roots for SCM & ERP-related IT business models are found in Japan

11. Environmental Changes for the IT Business

*Enables direct fund-raising from the capital markets

→MOTHERS, NASDAQ

→Holding company, share exchange scheme

→Angel Tax Plan, Stock option plan

→401k (capital shift): If Japanese pensions were to be invested at the U.S. 1980s level, venture capital would increase by 50% - 60%.

*MITI support package for venture businesses

For venture corporations of a certain size:

→Widen the usage for stock options

→Non-voting shares issuance deregulation

→Financial support package (credit backup, loans)

→Relaxation of inspection process based on commercial law

12. Overview of Policy Agendas (Regulatory Environment)

Criminal Law • Civil Law

- *Value of information → information theft, seized goods under criminal action law
- **Positioning of “Electronic signature / authentication” under civil action law (to introduce a bill during the ordinary Diet session : MITI •MPT •MoJ)*

Intellectual Property Rights Law • Illicit Competition Prevention Law

- *Legal protection of data base
- *Domain name versus copyright-protected names
- **Intermediary Business Law (currently under discussion at Agency of Cultural Affairs)*
- *Program patent, business model patent

Consumer Protection Law

- *Regulation of spam e-mail
- *Errors
- *Direct Sales Law, installment sales (contractual basis)
- *Consumer Agreement Law, etc.

Information Infrastructure

- *The introduction of low-priced fixed rate access to the Internet
- *Building of a new information telecommunications system to fit this era that unites telecommunications and broadcasting

Finance / Taxation System

- *Building of an environment that utilizes electronic money and electronic commercial paper (both based on paper, bank settlement on the network)
- *Consumption tax / Customs

Others

- **Electronic government (the need for an electronic-signature system for governmental usage)*
- **Protection of personal information (currently under review)*