



**Asia-Pacific
Economic Cooperation**

2008/SMEWG/SYM/004

Agenda Item: 2.1

Information Service Industry in Japan

Purpose: Information

Submitted by: Japan



**APEC Symposium on Improving Market
Access for ICT Outsource SMEs
Hanoi, Vietnam
27–29 October 2008**

The APEC Symposium on Improving Market Access for ICT Outsource SMEs

— Information Service Industry in Japan —

October 27, 2008

Katsuhiko Yoshida
President, System Center NANO Corporation

Doctoral Student (International and Regional Economics)
Graduate School for Creative Cities, Osaka City University

Visiting Researcher, Institute of Information Technology
(Vietnamese Academy of Science & Technology)

Director, Japan Office, Institute of Information Technology
(Vietnamese Academy of Science & Technology)

I. Information Service Industry in Japan

II. Offshore Software Development

III. Embedded Software

I. Information Service Industry in Japan

II. Offshore Software Development

III. Embedded Software

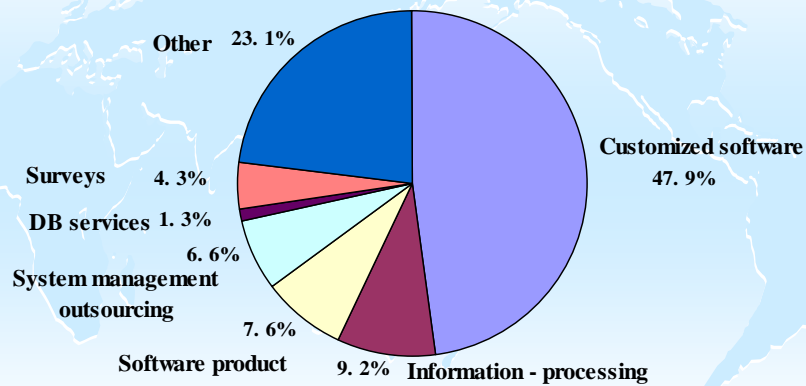
2006 Information Service Industry Statistics

No. of Businesses	16,262
No. of Employees	820,723
Annual Sales	JPY 18.9 trillion

Industry	Businesses		Employees		Annual Sales	
	Total	(%)	Total	(%)	(JPY 100 million)	(%)
Software	10,789	66.3	567,498	69.1	137,517	72.8
Information-processing & Information-service	5,473	33.7	253,225	30.9	51,435	27.2
Total	16,262	100.0	820,723	100.0	188,952	100.0

Source: Ministry of Economy, Trade and Industry "2006 Survey of Selected Service Industries"

2006 Information Service Industry Sales (by Product Type)



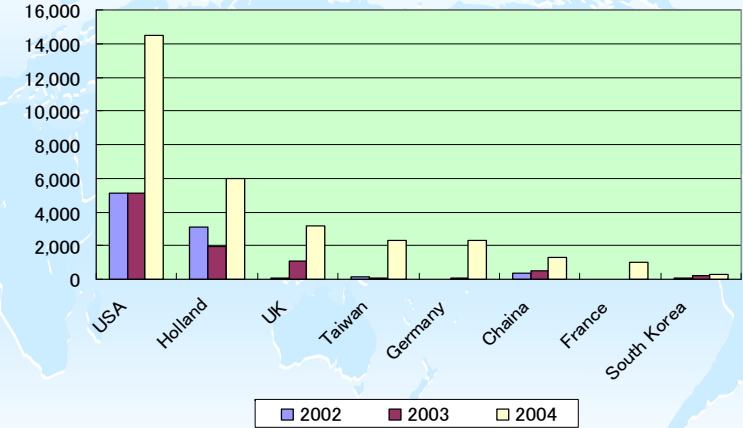
Source: Ministry of Economy, Trade and Industry "2006 Survey of Selected Service Industries"

© Copyright System Center NANO

5

Japan Software Exports

(Unit: JPY million)



Source: JISA, JEITA, JPSA

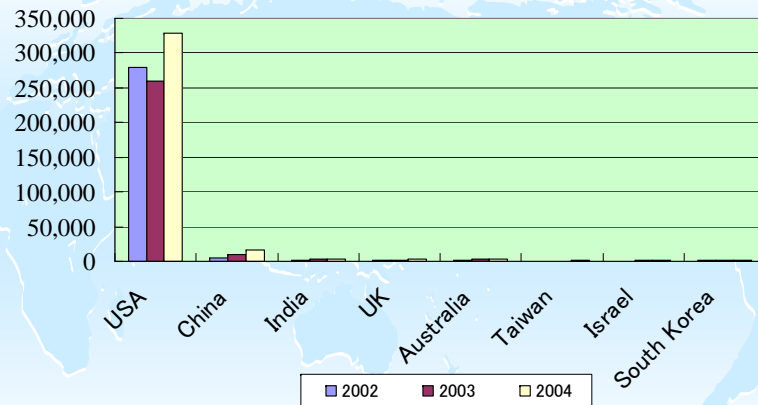
"2005 Survey of Overseas Transactions in the Field of Computer Software & Employment of Foreigners in Japan"

© Copyright System Center NANO

6

Japan Software Imports

(Unit: JPY million)



Source: JISA, JEITA, JPSA

"2005 Survey of Overseas Transactions in the Field of Computer Software & Employment of Foreigners in Japan"

© Copyright System Center NANO

7

Ratio of Engineering Fee Payment / Receipt (Japan's Overseas Transactions)

Amount Paid vs. Amount Received, by Industry	2004	2005	2006
All industries	0.37	0.32	0.35
Manufacturing	0.33	0.29	0.30
Pharmaceutical	0.27	0.18	0.23
Chemical	0.51	0.48	0.71
Telecom equipment	1.04	1.01	1.25
Electronics parts/devices	0.99	0.65	0.75
Transport machinery	0.03	0.02	0.03
Auto	0.01	0.01	0.01
Software/Information-processing	14.89	10.31	15.80

Source: Ministry of Internal Affairs and Communications' "Science & Technology Research Survey" (2004, 2005, 2006)

© Copyright System Center NANO

8

Japanese Information Service Industry Characteristics

- Focused on software development (55.5% of total sales)
 - Customized software: 47.9%
 - Software product: 7.6%
- Closed nature of the market
 - The majority of transactions are finalized domestically (most exports target Japanese-owned companies overseas)
- Inadequate software development competency and international competitive strength
 - 2004 imports were 11.4 times exports
 - Imports: JPY 364.6 billion Exports: JPY 32.0 billion
 - 2006 ratio of overseas engineering fee payment/receipt (overseas transactions)
 - All industries 0.35 Software/Information-processing 15.80

I. Information Service Industry in Japan

II. Offshore Software Development

III. Embedded Software

Offshore Software Development

Definition:

The outsourcing of software development to an overseas subsidiary or other overseas company

Objectives:

- ① Reduce development costs
- ② Compensate for inadequate human resources
- ③ In the case of China: to enter the Chinese market
 - ➡ Provide support to Japanese-owned companies in Chinese markets

Offshore Software Developers for Which Japanese Companies Hold High Expectations

(Unit: Company/Multiple Answers)

Country or region	Companies that outsourced overseas		Companies considering using outsource overseas		Total	
	2003 (58 companies)	2004 (58 companies)	2003 (204 companies)	2004 (193 companies)	2003 (262 companies)	2004 (251 companies)
1 China	48	54	127	120	175	173
2 India	21	21	61	56	82	76
3 South Korea	13	12	53	53	66	64
4 Vietnam	13	16	13	18	26	34
5 Taiwan	3	1	11	19	14	20
6 USA	2	1	11	14	13	15
7 Thailand	1	1	1	9	2	10
8 Hong Kong	0	0	3	6	3	6
9 Singapore	2	1	8	4	10	5
10 Philippines	3	2	2	2	5	4
Other	14	2	10	14	24	16
No response	3	1	57	45	60	46

Source: JISA, JEITA, JPSA

"2004 Survey of Overseas Transactions in the Field of Computer Software & Employment of Foreigners in Japan"

Offshore Software Developers Utilized by Japanese Companies

(Unit: JPY million)

Country or region		2002 (58 companies)	2003 (58 companies)	2004 (77 companies)	2004 compared with 2003
1	China	9,833	26,280	33,241	126.5%
2	USA	3,260	4,988	5,147	103.2%
3	India	1,908	6,312	4,255	67.4%
4	Australia	0	2,626	3,133	119.3%
5	UK	20	1,827	2,126	116.4%
6	Philippines	1,864	2,494	2,117	84.9%
7	South Korea	1,952	1,871	1,415	75.6%
8	France	0	834	548	65.7%
9	Canada	496	616	292	47.4%
10	Vietnam	30	30	216	720.0%
Other		888	1082	237	21.9%
Total		20,251	48,960	52,727	107.7%

Source: JISA, JEITA, JPSA

“2005 Survey of Overseas Transactions in the Field of Computer Software & Employment of Foreigners in Japan”

© Copyright System Center NANO

13

Comparison of China, India, the Philippines & Vietnam

Software industry size	China	India	Philippines	Vietnam
Total sales	JPY 8.7 trillion (2007)	JPY 3.3trillion (2007)	JPY 150 billion (2005)	JPY 38.7 billion (2006)
Total Export	JPY 606 billion (2006)	JPY 2.5 trillion (2006)	JPY 1050 billion (2005)	JPY 11.2 billion (2006)
Export Ratio to Japan	60% (2006)	3% (2006)	---	10% ? (2010)
Software engineers	400,000 (2005)	1,300,000 (2007)	160,000 (2005)	35,000 (2007)
No. of IT-related graduates	340,000 (2005)	280,000 (IT) 500,000 (Engineering) (2006)	80,000 (2006)	10,000 (every year)
Monthly salary (middle engineers)	US\$120-600	US\$250-430 (2004)	US\$140-230 (Elementary)	US\$170-360

Source: CICC “Asia IT Report 2008 – Comparative Study on IT Status in Asia”

© Copyright System Center NANO

14

Offshore Software Development-related Issues Attributable to Japanese Companies

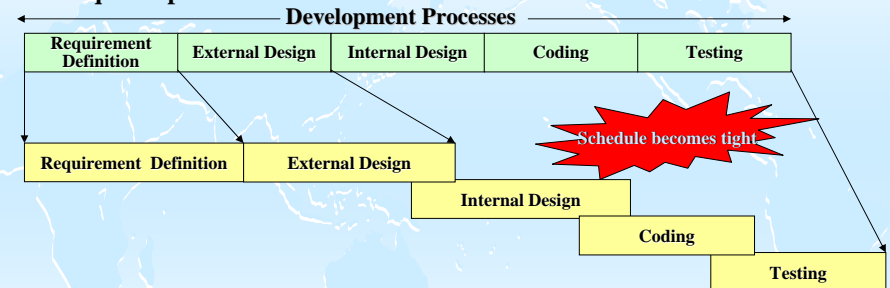
- ① Japan-specific business practices
 - Closed nature of the market
 - Multilayered subcontractor structure
 - Contract ambiguity
- ② Japanese-style development methods
 - Ambiguity of required specifications
 - Frequent specification changes
- ③ Communication
 - Difficulty communicating in foreign languages

© Copyright System Center NANO

15

Problems Related to Japanese Development Methods

- Ambiguity of required specs
- Frequent spec modifications



Specifications are continually changed but short lead-times are still required.

➡ Impossible to secure man-hours required for design revisions, document updates, and testing

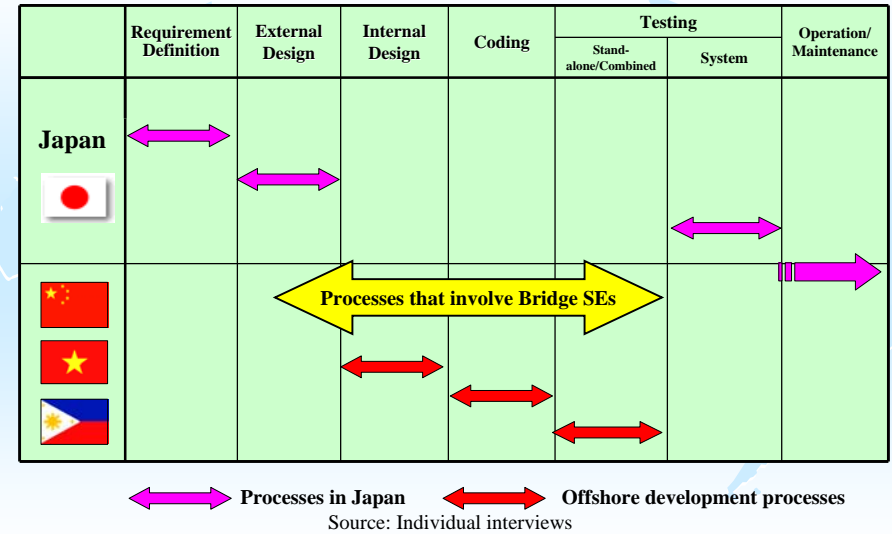
© Copyright System Center NANO

16

Offshore Software Development-related Issues Attributable to Offshore Companies

- ① Confidential information leaks
 - Sense of loyalty is extremely weak
 - Employee turnover rate is extremely high
- ② Internal training
 - No sharing of technical skills
- ③ Development environment
 - Power sources, networks, and other elements are unstable
 - Development tools are inadequate

Offshore Software Development Process Examples



What Is a Bridge SE?

Definition:

A Bridge SE works at the subcontractor's location and serves as a liaison between the contractor and the subcontractor in an effort to effectively facilitate the project.

Required skills:

- ① SE (System Engineer) technical skills
- ② Language skills (excellent Japanese-language skills), a superb awareness of cultural and business practice differences, and expert knowledge of project development
- ③ PM (Project Manager) skills
 - Understanding of contractual terms
 - Schedule management
 - Risk management



**Asia-Pacific
Economic Cooperation**

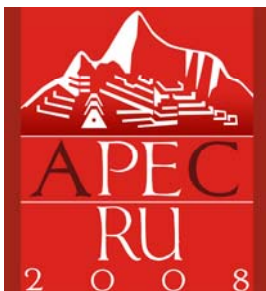
2008/SMEWG/SYM/005

Agenda Item: 2.2

Outsourcing by Omron Software Co.,Ltd

Purpose: Information

Submitted by: Japan



**APEC Symposium on Improving Market
Access for ICT Outsource SMEs
Hanoi, Vietnam
27–29 October 2008**

Outsourcing by Omron Software Co., Ltd.

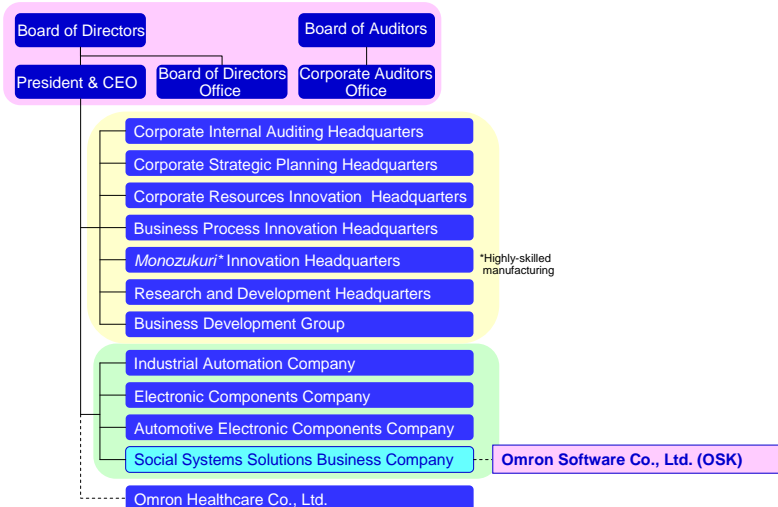
October 27, 2008

Table of Contents

1. Company Profile
2. Summary of Outsourcing
3. Establishing Outsource Policy
4. Outsourcing Style
5. General System of Maintaining Quality
6. Issues of Overseas Outsourcing
7. Expectations of Overseas Contractors

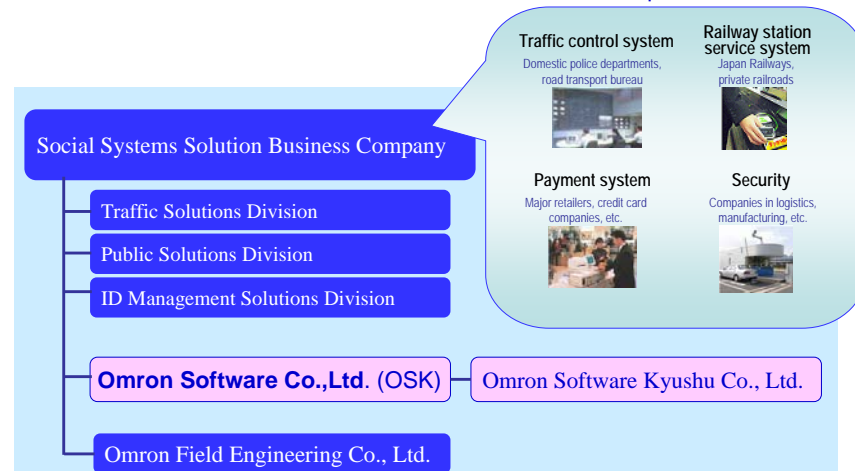
Omron Group Organization Chart

Omron Software, a member of Omron Group, has an edge in software technology.

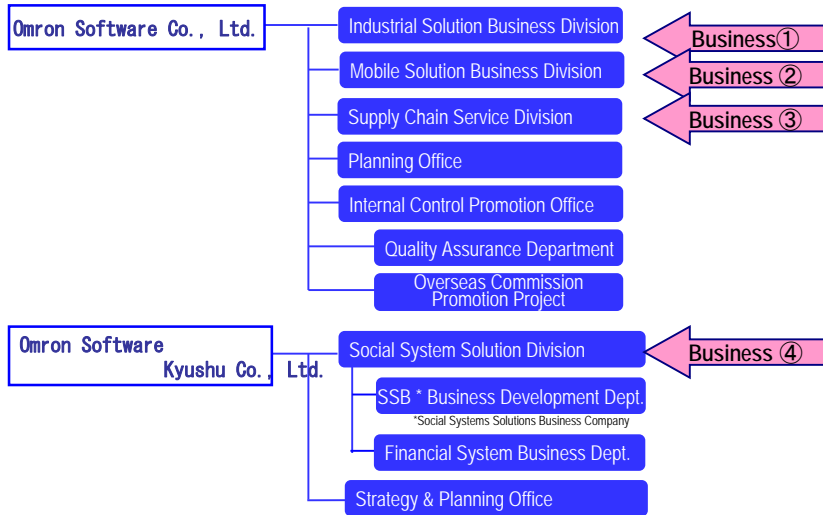


Social Systems Solution Business Company (SSB) : Businesses and Organization

SSB company provides value of security, safety, and convenience to social infrastructures in Japan.



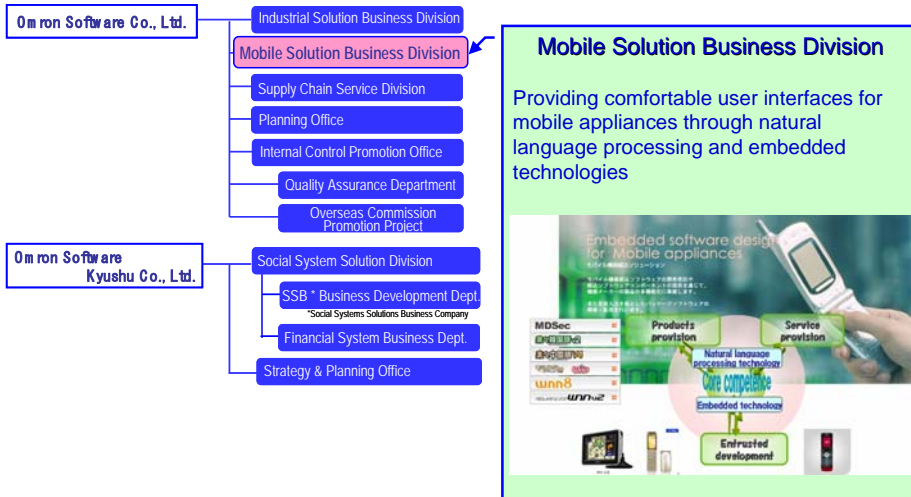
OSK Group: Overview and Organization



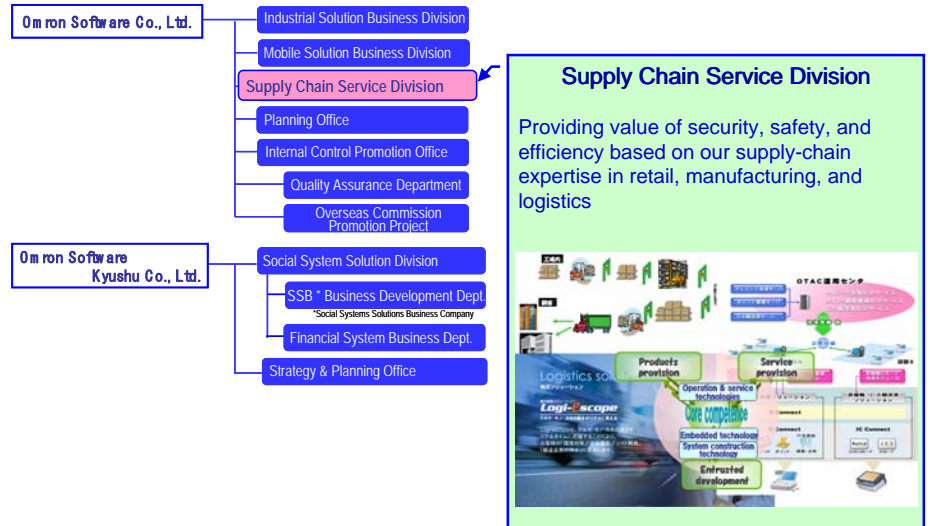
OSK Group: Overview



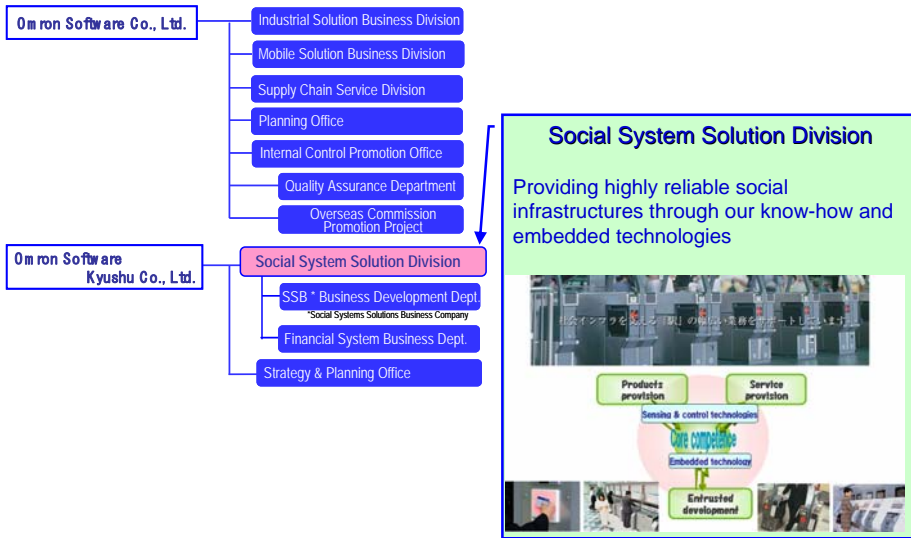
OSK Group: Overview



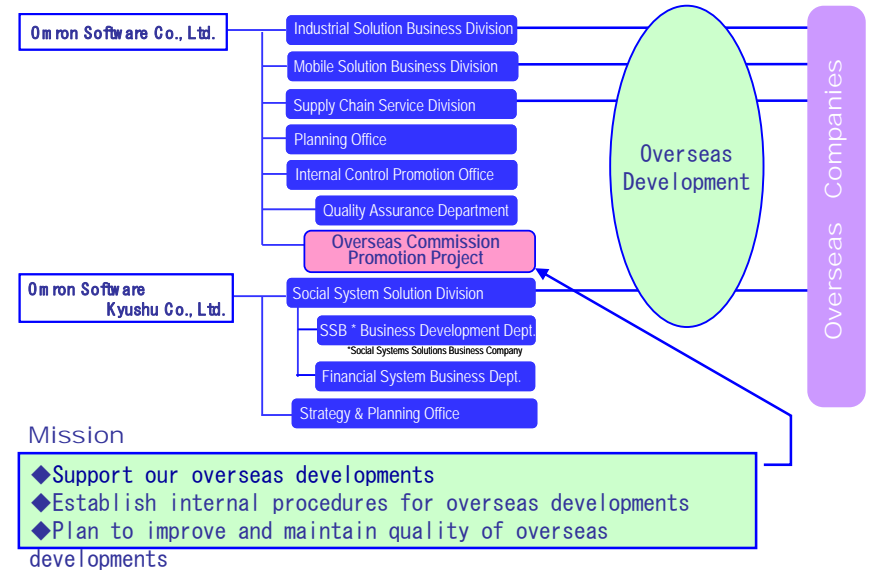
OSK Group: Overview



OSK Group: Overview



OSK Group: Overview



Summary of Outsourcing

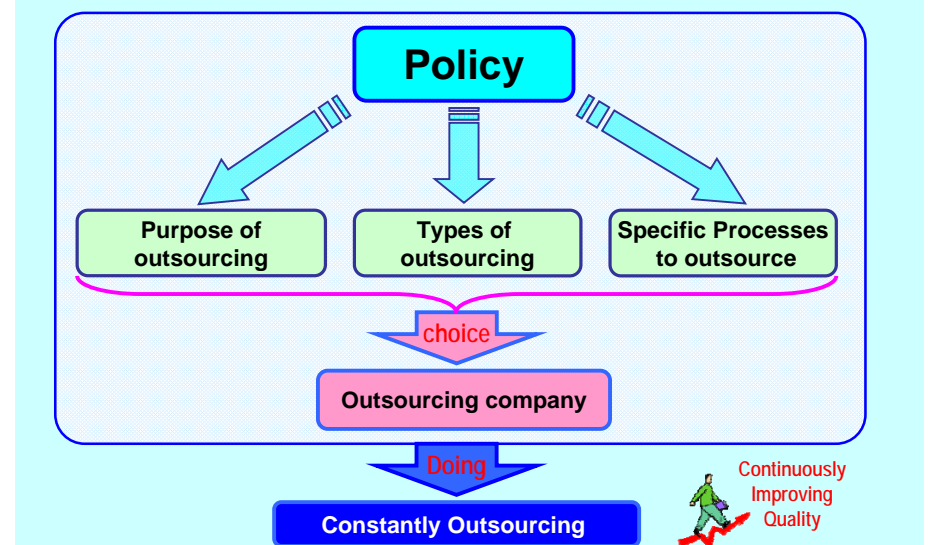
- Size : (Results in FY2007)
 - Domestic outsourcing about 3,300 man-months
 - Overseas outsourcing about 700 man-months

- Outsourcing contents : Software development

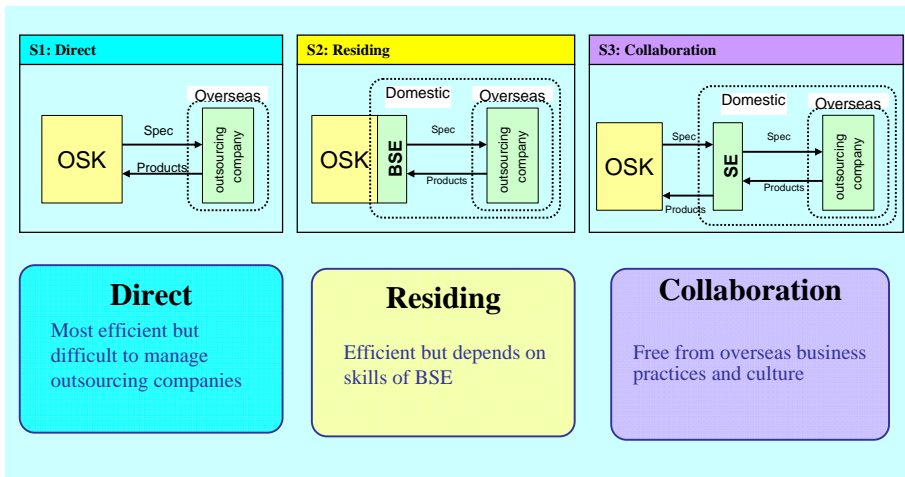
- Outsourcing processes :

Development Process	Domestic	Overseas
CD: Concept design	○	×
FD: Function design	○	△
SD: Structure design	○	○
MD: Module design	○	○
PG: Programming	○	○
MB: Monolithic debug	○	○
SB: Synthesis debug	○	○
FB: Function debug	○	△
TG: Testing	○	×

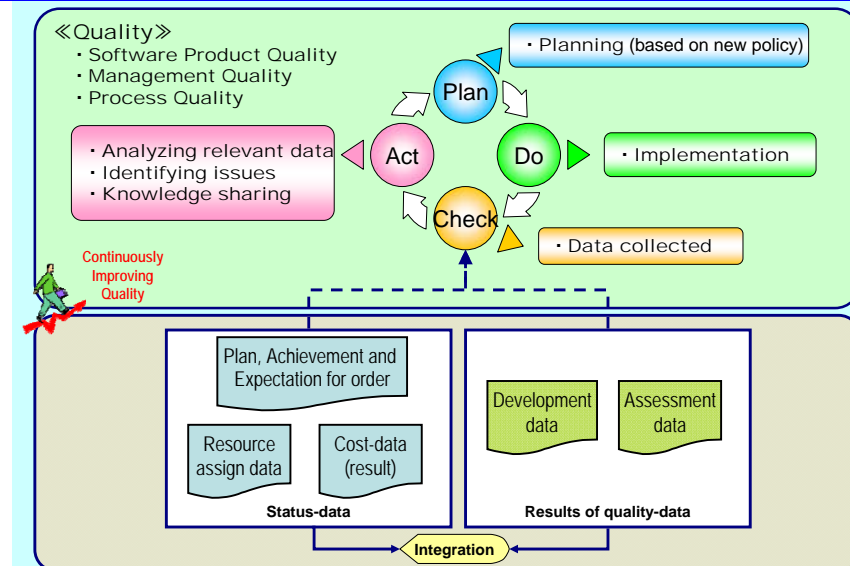
Establishing Outsource Policy



Outsourcing Style



General Systems of Maintaining Quality



Issues of Overseas Outsourcing

- Quality**
 - Different concepts of quality
 - Securing quality when specifications are constantly changed
 - Deterioration of quality due to insufficient reviewing
- Different interpretation of specifications**
 - Lack of communication
 - Lack of domain knowledge/understanding
- Cost performance**
 - Effect of cost reduction on the total cost

Expectations of Overseas Contractors

- Quality**
 - High quality awareness**
 - Understanding Japanese quality concept
 - Continuing efforts for quality improvement**
 - Quality improvement within the organization
- Delivery**
 - Understanding Japanese delivery concept**
 - The delivery date never changes, because various works after delivery are already planned.
- Maintaining Cost / Performance Excellence**
 - Supplying excellent performance and cost efficiency
 - Employing and training excellent human resources more aggressively
- Management of security**
 - Maintaining confidentiality and customer information privacy
- Problem-Identifying and Solving Skills**
 - Being proactive in finding and solving problems independently