

**THE STUDY ON SELECTED  
INDUSTRIAL PRODUCT  
DEVELOPMENT IN MALAYSIA**

**THIRD YEAR FINAL REPORT**

**(ADDENDUM)**

**NOVEMBER 1990**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

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国際協力事業団

22040

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## **I Castings**



**I-1 Results of the Questionnaire Survey Conducted in  
Japan; Possibilities of Tie-ups with Foreign Companies**



I - 1 Results of the Questionnaire Survey Conducted in Japan ; Possibilities of Tie-up with Foreign Companies

(1) Survey Methodology

- ① Pre-survey to 430 companies belong to the Nippon Cast Iron Foundry Association was conducted by the research company, which has been undertaken the survey at the end of October, 1989.
- ② Based on①above, a list of addresses was be drawn up, and a package consisting of a request for cooperation, the questionnaire itself, and a stamped return envelope was be sent to each.
- ③ Companies which have not responded by one week before the return deadline (November 30, 1989) were contacted by telephone.
- ④ Results of the returned questionnaires were compiled and a report drawn up.

(2) Survey statistics

- ① Number of questionnaires sent (confirmed by telephone) ..... 174
- ② Firms indicating that they were unable to respond due to the nature of the questionnaire ..... 37
- ③ Questionnaires returned ..... 101
- ④ Questionnaires which were expected to be returned but for some reason (postal error, etc.) were not ..... 65
- ⑤ Effective response rate ..... 58%

(3) Results of the survey by question

1) Present status of overseas operation

① Type of overseas operation

Country/region	fully owned subsidiary	Joint Venture	Technical tie-up	Office	Sales representative	Total
Korea	0	11	12	1	1	25
Taiwan	8	17	8	1	1	35
Malaysia	3	13	1	0	2	19
Singapore	14	5	0	1	3	22
Thailand	1	22	5	1	0	29
Sub total	26	68	26	4	7	131
U.S.A.	3	3	1	0	0	7
Brazil	0	0	0	0	0	0
G F R	—	—	—	—	—	—
Indonesia	0	4	4	0	0	8
Philippine	0	1	1	0	0	2
Pakistan	0	0	0	0	0	0
Myanmar	0	0	1	0	0	1
India	0	1	1	0	0	2
Others	3	2	3	0	0	8
Total	32	79	37	4	7	159

(Note: 13 firms indicated that they had no overseas operations.)

② Time frame of overseas operation (in Asia)

	Korea	Taiwan	Malaysia	Singapore	Thailand	Total
1956	1	0	0	0	0	1
59	1	0	0	0	0	1
60	1	0	0	0	0	1
61	0	0	0	0	1	1
62	1	0	0	0	0	1
63	0	0	0	0	1	1
64	0	0	0	0	2	2
65	0	2	0	0	0	2
66	0	1	0	0	0	1
67	0	1	2	0	0	3
68	0	1	1	0	1	3
69	1	1	0	0	0	2
70	1	1	0	0	0	2
71	0	0	0	1	0	1
72	0	0	1	2	2	5
73	0	0	0	1	0	1
74	1	0	0	0	1	2
75	0	0	1	0	1	2
76	1	0	0	0	0	1
77	1	0	0	0	0	1
78	0	1	0	4	1	6
79	0	0	0	1	1	2
80	0	1	1	1	0	3
81	0	2	0	0	1	3
82	2	0	0	0	0	2
83	0	0	2	0	1	3
84	0	1	1	0	0	2
85	2	3	0	1	1	7
86	1	3	0	1	2	7
87	3	2	1	0	4	10
88	1	4	1	3	1	10
89	0	3	1	4	5	13
合計 (件)	18	27	12	19	26	102

(Note: 31 companies did not respond to this question)

③ Products/sectors of overseas production

Korea	Small PCB drills, propeller manufacture, machinery, valves, electronics, fastener, steel piston rings, high-strength steel reinforcement, ship engines, engineering plastics, sewing machine manufacture, automotive springs, parts sourcing, passenger vehicles, metal surface treatment agents, vacuum devices, magnets
Taiwan	Small PCB drills, musical instruments, metal dies for die casting, cast metal, passenger vehicles, trucks, valves for machinery, home electrical appliances, electronics, semiconductor components, fasteners, monolithic refractories, stainless steel valves, piston rings, high-strength steel reinforcement, motorcycles, bearings, machine tools for ductile cast iron, chemical processing equipment, die casting, surface treatment, heat treatment agents, paints forecasting, bearing liner manufacture, magnets
Singapore	Cutting tools, tennis rackets, propeller manufacture, cast iron pipes, machinery, home electrical appliances, semiconductor components, fasteners, parts depots, injection molding machines, analytical/measuring devices, engines, forklifts, machine tools die casting, construction equipment sales, oil drilling equipment
Thailand	Coating service, casting and machining of automobile components, sporting goods, passenger vehicles, machinery, home electrical appliances, fasteners, bronze valves and piston rings, motorcycles, bearings, production of aluminum wheels for automobiles, sales, valves steel piping, aluminum pistons, pre-coated fin stock, ductile cast iron, air conditioners, electrical wiring, chemical processing equipment
Malaysia	Passenger vehicles, electronics, fasteners, motorcycles, iron and steel, small diesel engines, rare earth metals, metal surface treatment agents
Other	Textile machinery, monolithic refractories, automotive springs, material sourcing, industrial equipment, aerospace equipment, V pulleys for casting, vacuum devices, valves, piston rings, bearing retainer sales

2) Future plan for overseas investment

① Country/Region

U.S.A.	7
Canada	2
Europe	2
Italy	1
China	4
Korea	3
Malaysia	8
Thailand	4
Indonesia	2
Philippines	1
India	1
Taiwan	3

② Type of Investment

Joint Venture	15
Technical tie-up	11
Fully-owned subsidiary	3
Production plant	2
Manufacturing	1
Capital	1
No such plans	8

③ Products/Sectors of planned overseas operation

Philippines	Metal surface treatment agents
Indonesia	Petrochemical products, aluminum pistons
Malaysia	Cast metal products
Thailand	Injection moulding machines, casting, machining
China	Propellers, Forged products, V pulleys for casting, iron pipe
Korea	Forged products
Taiwan	Industrial furnaces
U.S.A.	Propellers, casting plants, environmental equipment manufacture and technical tie-ups, automobiles, piston rings
Canada	Spring materials, zinc plating, copper plates
Italy	Sales of aluminum wheels for automobiles

3) Evaluation of Malaysia as a candidate for production or technical tie-up.

Not under consideration for the time being	61
Possible within 4-5 years	10
Possible within 2-3 years	2
Could be or is being considered at present	6
Have concrete plans	2

② Type of operation

Fully owned subsidiary	6
Joint venture	11
Technical tie-up	11

③ Expected production items

- Cast metal products, aluminum die casting
- Rubber materials for vibration damping devices
- Pre-coated fin stock
- Valves and connectors
- Facilities and equipment for casting plants
- Machine tools
- Die casting machines
- Raw materials for glass manufacture
- V pulleys for casting
- Metal surface treatment agents



4) Motive of starting overseas production and/or operation in Malaysia

- To meet demand of main Japanese user(s) which shifted to production base abroad 15
- To access the overseas market(s) 12
- To cope with trade friction and regulation 7
- To tackle difficulty with export due to appreciation of the yen 19
- To have attractive incentive measures 10
- Lower labour cost 28
- Cheaper raw material 5
- Cheaper electricity 3

5) Necessary conditions for investment in Malaysia

- Availability of financial assistance 4
- Availability of personnel to deal with local procedures 6
- Availability of local information services such as a partner introduction service 20

Other conditions/comments:

- Wages, infrastructure, ease of obtaining raw materials
- Assurance of increased market share
- Existence of a good local partner
- Good opportunities for business development
- No plans at present for establishing a production base
- Importing products at present
- Technical tie-ups possible if they lead to cost reductions



## **I-2 Outline of Japanese Potential Investors**



Outline of Company which has Interests for Investment

(1)

Name of Company	FUJI DEMPA KOGYO CO., LTD.
Address	2-4-36 shintaka Yodogawa-ku, Osaka 532
Telephone	06-394-1151
Year of Establishment	1948
Capital	¥210 million
Gross Sales	
Total number of employees	150
Total number of overseas operation (Factory, sales representative)	
Main Products Treated Items	High temperature sintering furnace, Induction hotpress furnace, Vacuum metallurgical furnace

Respondent	Name of the Department/Division	General Affairs Division
	Official Position	Director
	Full name	Mr. Hiromi Yamaguchi

## Outline of Company which has Interests for Investment

(2)

Name of Company	Fujikin Incorporated
Address	C/O Kita-Hankyu Bldg., 1-4-8 Shibata, Kita-ku, Osaka 530
Telephone	06-372-7141
Year of Establishment	1930
Capital	¥160 million
Gross Sales	¥19 billion
Total number of employees	900
Total number of overseas operation (Factory, sales representative)	6
Main Products Treated Items	Valves, connectors and other precision instruments

Respondent	Name of the Department/Division <u>Overseas Activities Division</u>
	Official Position _____
	Full name <u>Mr. Sakae Inoue</u>

Outline of Company which has Interests for Investment

(3)

Name of Company	IZUMI INDUSTRIES, LTD.
Address	620 O-nakai, Kawaguchi-shi, 350 Saitama Pref.
Telephone	0 4 9 2 - 3 5 - 1 1 1 1
Year of Establishment	1 9 3 8
Capital	¥ 1, 1 1 6 million
Gross Sales	¥ 2 3. 4 billion
Total number of employees	1, 0 8 5
Total number of overseas operation (Factory, sales representative)	1
Main Products Treated Items	Pistons, Cylinder liners, Aluminium castings, Iron castings

Respondent	Name of the Department/Division	Planning Division
	Official Position	Deputy Director
	Full name	Mr. Hiroshi Kasahara

Outline of Company which has Interests for Investment

(4)

Name of Company	KAWASAKI DROP FORGING CO., LTD.
Address	12-2-4 Hinode, Kawasaki-ku, Kawasaki-shi 210
Telephone	0 4 4 - 2 7 7 - 2 5 1 1
Year of Establishment	1 9 4 5
Capital	¥ 9 3 million
Gross Sales	¥ 4 billion
Total number of employees	1 2 0
Total number of overseas operation (Factory, sales representative)	
Main Products Treated Items	Forgings for automobile

Respondent	Name of the Department/Division
	Official Position      Managing Director
	Full name                      Mr. Yuzuru Odagawa



Outline of Company which has Interests for Investment

(5)

Name of Company	KOBE STEEL, LTD.
Address	C/O Dai-ichi Tekko Bldg., 1-8-2 Marunouchi, Chiyoda-ku, Tokyo 100
Telephone	218-7111
Year of Establishment	1905
Capital	¥140.67 billion
Gross Sales	¥1,176.78 billion
Total number of employees	21,700
Total number of overseas operation (Factory, sales representative)	10
Main Products Treated Items	Iron & steel, Rolled steel products, machinery iron castings, steel casting aluminium & copper alloy products

Respondent	Name of the Department/Division	Overseas Planning Division, Planning Department
	Official Position	Chief
	Full name	Mr. Kyoichi Iijima

Outline of Company which has Interests for Investment.

(6)

Name of Company	MEEHANITE METAL CO. OF JAPAN LTD.
Address	2-1-1 Nihombashi Muromachi Chuo-ku, Tokyo 103
Telephone	03-270-0608
Year of Establishment	1951
Capital	¥50 million
Gross Sales	¥180 million
Total number of employees	11
Total number of overseas operation (Factory, sales representative)	
Main Products  Treated Items	(A) Technical guidance of meehanite metal (B) Sale for additives of castings

Respondent	Name of the Department/Division	
	Official Position	Director of Bussiness Affaires Department
	Full name	Mr. Ikuo Mitsukawa

Outline of Company which has Interests for Investment

(7)

Name of Company	Mitsubishi Metal Corporation
Address	4-6-23 Takanawa, Minato-ku, Tokyo 108
Telephone	03-280-8122
Year of Establishment	1950
Capital	¥53.31 billion
Gross Sales	¥718.47 billion
Total number of employees	6,972
Total number of overseas operation (Factory, sales representative)	7
Main Products Treated Items	Copper, zinc, lead, tin, gold, silver, sulphuric metal products

Respondent	Name of the Department/Division	President's Office
	Official Position	Chief
	Full name	Mr. Kohji Shigemura

## Outline of Company which has Interests for Investment

(8)

Name of Company	NIPPON LIGHT METAL COMPANY, DTD.
Address	3-13-12 Mita, Minato-ku, Tokyo 108
Telephone	03-456-9286
Year of Establishment	1929
Capital	¥25.36 billion
Gross Sales	¥267.48 billion
Total number of employees	4,281
Total number of overseas operation (Factory, sales representative)	6
Main Products  Treated Items	Aluminium ingot, aluminium sheet, aluminium building materials

Respondent	Name of the Department/Division <u>President's Office</u>
	Official Position _____
	Full name <u>Mr. Tadanobu Yasui</u>

**I-3 Questionnaire Sheet for the Survey in Japan**



QUESTIONNAIRE TO THE ENTERPRISE THAT IS INTERESTED IN OVERSEAS INVESTMENT

You are requested to make entries in articles below or to enclose proper numbers with circles about the epitome of your respective enterprise.

(Management indices are expected to go with the financial statement based of 1988)

Name of Company	
Name of Company (English name)	
Address	
Telephone	
Year of Establishment	
Type of Corporation	1. Japanese Company    2. 100% Foreign Affiliate 3. Over 50% Foreign Affiliate
Capital	Yen (Paid-up capital)
Gross Sales	Yen (Yearly Turnover)
Total number of employees	
Total number of overseas operation (Factory, sales representative)	
Main Products  Treated Items	

Respondent	Name of the Department/Division _____
	Official Position _____
	Full name _____

Please answer the question concerning the Overseas Operation

1. Presently do you have production base(s) abroad?  
 You are requested to write down type of operation (100% own capital, Joint venture, Technical Tie-up) establishment year, and main production items by country/region.

Country/region	Type of operation	Establishment year	Main production items
Korea			
Taiwan			
Malaysia			
Singapore			
Thailand			
Others			

2. Presently do you have any plan of overseas operations. Please answer it as long as it suits your convenience.

Country/region	Type of operation	Main production items

3. How do you evaluate Malaysia if you choose her as the production base in future? Please circle the appropriate item.

Impossible for a while		
Around 4-5 Years Later, There is Possibility		
Within 2-3 Years, There is Possibility as the Proposed		
Possible to Investigate or Under Investigation as one of the Proposed		
There is a Concrete Plan		
Type of operation	100% own capital	
	Joint venture	
	Technical Tie-up	
Production Items		



4. How do you think about motive of having production base in Malaysia?  
Please circle the appropriate items.

To meet demand of main Japanese user(s), which shifted to production base abroad	
To access the overseas market	
To cope with trade friction and regulation	
To tackle difficulty with export due to appreciation of the yen	
To have attractive Incentive measures	
Lower labour cost	
Cheaper raw material	
Cheaper electricity	
Others	
.....	
.....	
.....	

5. What would be the necessary condition for investment in Malaysia?  
Please circle the appropriate item.

Availability of financial assistance	
Availability of personnel to deal with local procedures	
Availability of local information services such is a partner introduction service	
Others	
.....	
.....	
.....	

Thank you very much for your cooperation.



## **I-4 List of Malaysian Companies Expecting for Tie-ups**



I-4 List of Malaysian Companies Expecting for Tie-ups

Company Name	Address	Telephone	Name of Representative	Established	No. of Employees	Capital (M\$)	Main Products	Expected Partners for Tie-ups	
								Joint Ventures	Technical Tie-ups
1. Kwan Cheong Engineering Sdn. Bhd.	312, Jalan Sg. Besi 57100 Kuala Lumpur	03-2215621	Soong Siew Hoong	1923	69	1,000,000	Machinery for rubber industry Chain sprocket Lamp post, Bearings housing	○ (Taiwan)	
2. Lien Yik Hardware (M) Sdn. Bhd.	89, Jalan Sg. Besi 57100 Kuala Lumpur	03-2218261	Tan. Ching Joon	1978	35	250,000	Cast iron pan C.I. pipe fittings	○	
3. United Casting Sdn. Bhd.	Lot 27, Jln 3A Persusahaan Kawasan Balakong, 1mn. Cheras Jaya, 43200 Cheras Selangor	9052186/137	Hew Hong Cheong	1978	45	1,900,000	Palm oil mill equipment parts etc.	○ (Japan) ○ (U.S.A.) ○ (U.K.)	○ (U.K.) (Japan)
4. Gah Hup Seng Sdn. Bhd.	Batu 6, Jalan Tg. Karang 47500 Tg. Karang, Selangor	03-8795812	Teow Boon Chee	1978	78	339,500	Motor cycle Kick starter Agricultural machinery parts	○ (Japan) ○ (U.S.A.) ○ (West Germany) (Taiwan)	
5. Teak Heng Foundry Sdn. Bhd.	Lot 39A 2nd mile, Ipoh Road, 31450 Menglembu Perak	05-542718	Lai Hon Chee Ho Sew Kong	1949	39	400,002	Drainage irrigation water works parts Rubber machinery OEM parts	○	
6. Adamai Sdn. Bhd.	61, Jalan Hujan Rahmat Tiga, Oversea Union Garden 5th mile, Jalan Klang Lama 58200, Kuala Lumpur	03-7832382	Ricky Chan	1987		500,000	Gas burner	○ (Taiwan)	
7. Bengkel Choy Soon Heng Sdn. Bhd.	Lot No.21 Jalan Besar Industrial Area 43000 Sri Kembangan, Selangor	03-8486836	Cheah Ah Tong	1982	8	200,000	General engineering parts Manhole cover Cast iron pipe fitting	○ (Taiwan) (Japan)	
8. Chee Woh & Co Foundry	18 Ipoh Road, Menglembu Ipoh, Perak	542564	Kong Tong	1945	5	90,000	Mining Parts	○ (Japan)	
9. Fine Cast Industries Sdn. Bhd.	Lot 285, 23 miles Sg. Lalang 43500 Semenyih Selangor	03-8138878	Kat Hoo Kang	1987	40	400,000	LPG burner	○ (Japan) (Taiwan)	
10. Kin Lee Engineering Works Trading	54-4 Jalan Bakarlah 84000 Muar	06-922542	Lee Boon Hean	1967	14	300,000	General engineering parts. Palm oil crusher parts Roller + Gear rubber machinery	○ (U.S.A.) (Taiwan)	

(List of Malaysian Companies Expecting for Tie-ups)

Company Name	Address	Telephone	Name of Representative	Established	No. of Employees	Capital (M\$)	Main Products	Expected Partners for Tie-ups	
								Joint Ventures	Technical Tie-up
11. Kolling Engineering Sdn. Bhd.	25 Jalan Sibu 17 Taman Wabyu, Jalan Ipoh 68100 Kuala Lumpur	03-6265017	William Kong Mei Fatt	1972	27	60,002	Fire fighting equipment parts	○ (Asian countries)	○ (U.K.)
12. Lian Aik	411-W Batu 4, Jalan Ipoh 51200 Kuala Lumpur	03-6269147	Tan Ching Joon	1988	12	500,000	Gas burner Electric iron base Palm oil mill parts	○	
13. Seng Fatt Engineering Works Sdn. Bhd.	134B, Jalan Chan Sow Lin, 50200 Kuala Lumpur	03-2215550	Tan Ching Joon	1947	62	200,000	Cast pipe fitting Mild steel pipe fitting General engineering parts	○	
14. Sun Weng Heig Hup Kee Foundry	555 New Village 31650 Pasir Piuji, Ipoh, Perak	500209	Loke Yoke Lan	1981	6	200,000		○ (U.K.) ○ (Japan) ○ (Singapore) ○ (West Germany)	
15. Super Liner Industries Sdn. Bhd.	681 Taman Kota Jaya, 34700 Simpang, Perak	05-841968	C.S. Low	1989		350,000	Cycloider Liner Break disc + drum	○ (Europe)	
16. Sykt K. Tai Soon Seng Sdn. Bhd.	Lot 55 Section 92A Batu 3 1/2 Sg. Besi Kuala Lumpur	03-7814968	Tan Ching Joon	1975	20	200,000	Telecom manhole cover C.I. pipe fitting	○	
17. Universal Foundry Sdn. Bhd.	Lot 6B 6C Merlimau Industrial Estate 77300 Melaka	06-391681	Roland Cheong	1988	20	1,000,000	Quarry & tin equipment parts Palm oil mill & Cement plant parts	○ (U.K.) ○ (Japan) ○ (Taiwan)	
18. See Seng Foundry Works Sdn. Bhd.	Sectin 92, 92A Lot No.3 Batu 3 1/2 Jln. Sg. Besi 57100 Kuala Lumpur	7821350 7830106	See Yit Seng	1982	45	125,000			○ (Japan)
19. Die Casting Products Sdn. Bhd.	1290 Jalan Kg. Baru, Ampang Selangor	4561282	Adam Harun	1974	80	750,000	Automotive components door lock & handle musical flares for toys		○ (Holland)
20. Taung Liang Industries (M) Sdn. Bhd.	44A1-D, Jalan Batu Tiga Kampong Baru, Subang 40000 Shah Alam, Selangor	7461221	Lim Kooi How	1989	45	660,000	Gas burners Gas burner head		○ (Taiwan)

**I-5 List of Approved Castings-related Manufacturers  
in Malaysia**





I - 5 List of Approved Castings-related Manufacturers in Malaysia

Company Name	Address	Products	Capital & Capital Construction	Investment Incentive	Date of Approval	State of Operation
1. Cast Iron Products Sdn. Bhd.	1, Jalan 19/1B Petaling Jaya.	C.I. pipes, fittings and manhole covers	Malaysia (Bumiputera) 100%	P S (Pioneer Status)	14.9.64.	In production
2. Indo Malaysia Eng. Sdn. Bhd.	K.P. Shah Alam, Selangor	Centrifugal pumps, other iron castings	M\$ 3,024,000 Malaysia (Bumiputera) 57.37% India, Singapore 42.63%			Closed
3. Perusahaan Besi Sdn. Bhd.	20 & 21, K.P. Senawang, Seremban	C.I. pipes & fittings, manhole covers, pig iron & steel billets	M\$ 1,118,000 Malaysia (Bumiputera) 10% Singapore 40%	P S	21.11.70.	In production
4. Bradken (M) Sdn. Bhd.	P.O. box 77, Ipoh	Steel casting & special alloy iron castings	M\$ 12,816,000 Malaysia (Bumiputera) 51% Australia 49%	P S	2.9.71.	In production
5. Jaya Jeewan Sdn. Bhd.	K.P. Batu Tiga, Shah Alam, Selangor	General steel castings	M\$ 3,240,000 Malaysia (Bumiputera) 72% India 28%	P S	27.12.71.	Closed
6. United Stainless Steel Sdn. Bhd.	75, Jalan Tampoi, Johor Bharu	Iron castings	M\$ 12,000,000 Malaysia (Bumiputera) 89% Singapore 63.3% 11%	P S	22.11.72.	Closed
7. Pony Metal Works (M) Sdn. Bhd.	Off Jalan Chan Sow Lin, Kuala Lumpur	Aluminium, brass castings	M\$ 1,000,000 Malaysia (Bumiputera) 61.9% H.K., Taiwan, Singapore 39.9%	W. T. I. (Without tax Incentive)	26.9.73.	In production (aluminium extrusion only)
8. Yodoshi Malleable (M) Sdn. Bhd.	97, K.P. Air Keroh, Melaka	Malleable fittings, & iron parts	M\$ 10,000,000 Malaysia (Bumiputera) 35% Japan 20% 65%	P S	18.11.73.	In production
9. Melcom Industries Sdn. Bhd.	K.P. Pandamaran, Kelang	Iron casting (for electric iron base)(Al & Zn die-casting)	M\$ 2,000,000 Malaysia (Bumiputera) 33.2% Japan 12.7% 66.8%	I. T. C. 25% (Investment Tax Credit)	8.1.74.	In production
10. Gapura Pelabuan Sdn. Bhd.	K.P. Selat Kelang Utara, Selangor	Iron & steel casting	M\$ 500,000 Malaysia (Bumiputera) 100% 80%	P S	21.6.76.	Not implemented
11. Melacca Iron Foundry Sdn. Bhd.	Tanjong Kling, Melaka	C.I. pipes & fittings manhole covers, C.I. machinery parts, C.I. ingots	M\$ 500,000 Malaysia (Bumiputera) 100% 30%	P S	21.10.76.	Not implemented

(List of Approved Castings-related Manufacturers in Malaysia)

Company Name	Address	Products	Capital & Capital Construction	Investment Incentive	Date of Approval	State of Operation
12. Wah Hup Eng. Works Sdn. Bhd.	324, Jalan Sungei Besi, Kuala Lumpur	C.I. pumps & parts, C.I. pipes & fittings, Non-ferrous castings	M\$ 1,125,000 Malaysia (Bumiputera —) 100%	W. T. I.	26.7.77.	In production
13. Kitz (M) Sdn. Bhd.	Melaka	Stainless steel valves, general stainless steel casting on a jobbing basis	M\$ 1,700,002 Japan 100%	PS	11.5.77.	Closed
14. Mabobo Metal Ind. Sdn. Bhd.	8626-C, Tansga Batu K.O. tanjung Kliling Melaka	C.I. pipes & fittings (manhole cover, pillar tap, stop cock, bib-cock)	M\$ 660,000 Malaysia (Bumiputera 75%) Taiwan, Singapore 25%			In production
15. Seng Fatt Eng. Works Bhd.	184-B, Jalan Chan Sow Lin, Kuala Lumpur	C.I. casting, pressure vessels, brass & aluminium casting	M\$ 168,093 Malaysia (Bumiputera —) 100%	W. T. I.	16.6.77.	In production
16. Dah Yung Steel Sdn. Bhd.	12, Jalan Empat Off Jalan Chan Sow Lin, Kuala Lumpur	Steel castings	M\$ 6,000,000 Malaysia (Bumiputera 40.2%) Foreign 2.5%) 59.8%	W. T. I.	22.8.77	In production
17. Chiang Xoon Hong & Sons Sdn. Bhd.	184-B, Jalan Chan Sow Lin, Kuala Lumpur	Iron & steel castings, bronze alloy castings	M\$ 500,000 Malaysia (Bumiputera —) 100%	W. T. I.	30.8.77.	In production
18. Malaysia Casting Co. Sdn. Bhd.	18, Tasek Square K.P. Tasek, Ipoh	C.I. soil pipes, manhole covers, other C.I. castings	M\$ 436,120 Malaysia (Bumiputera —) 29% Singapore, H.K. 71%	PS	27.10.77.	In production
19. Hoong Cheong Eng. Works	2, Jalan Empat Off Jalan Chan Sow Lin, Kuala Lumpur	Iron & steel castings	M\$ 269,950 Malaysia (Bumiputera —) 100%	W. T. I.	10.11.77	In production
20. Menglembu Wah Cheong Foundry Sdn. Bhd.	2 3/4 mile, Ipoh Road, Menglembu, Ipoh	C.I. pumps & spares valves, Non-ferrous castings	M\$ 80,000 Malaysia (Bumiputera —) 100%			In production
21. Boon brothers Sdn. Bhd.	155, Jalan Pinang, Pulau Pinang	Iron & brass castings	M\$ 200,000 Malaysia (Bumiputera —) 100%			In production
22. Lee Industries Sdn. Bhd.	78, 74 & 75 K.P. Semambu, Kuantan Pahang	Iron & steel castings	M\$ 2,150,000 Malaysia (Bumiputera —) 100%	I. T. C. 25%	5.3.78.	In production
23. Continental Casting Sdn. Bhd.	Batu 5 1/2, Jalan Kapar, Kelang	Grey iron casting, malleable iron pipe fittings	M\$ 2,000,000 Malaysia (Bumiputera —) 67% Singapore, Taiwan 33%	PS	4.4.78.	In production

(List of Approved Castings-related Manufacturers in Malaysia)

Company Name	Address	Products	Capital & Capital Construction	Investment Incentive	Date of Approval	State of Operation
24. Kwang Cheong Eng. Sdn. Bhd.	312, Jalan Sungei Besi, Kuala Lumpur	Iron castings (rubber processing machine)	M\$ 845,000 Malaysia (Bumiputera —)	W. T. I.	21.4.77.	In production
25. Sung Sang Heng Kee Foundry Sdn. Bhd.	48-F & G, Jalan Lima, Off Jalan Sow Lin, Kuala Lumpur	C.I. frying pan C.I. pipes, tubes C.I. fittings other C.I. products	M\$ 600,248 Malaysia (Bumiputera —)	W. T. I.	11.5.78.	In production
26. Tong Fatt Eng. Works Sdn. Bhd.	4, Jalan Empat, Off Jalan Chan Sow Lin, Kuala Lumpur	Iron castings Non-ferrous castings	M\$ 1,105,000 Malaysia (Bumiputera —) U.K. 2.6%	W. T. I.	15.6.78.	In production
27. Hup Neai Foundry	55, Jalan Lalat, Pusing, Perak	Fabrication and machinery operation	M\$ 31,000 Malaysia (Bumiputera —)	W. T. I.	22.6.78.	In production
28. Hup Neai Leong Foundry Sdn. Bhd.	1409, Lahat Road, Menglembu, Perak	C.I. products N.F. products (C.I. pumps & parts, monitors and valves)	M\$ 140,000 Malaysia (Bumiputera —)	W. T. I.	22.6.78.	In production
29. Hup Yik Foundry Sdn. Bhd.	Lahat Road Menglembu, Ipoh Perak	C.I. pump parts C.I. castings Bronze and aluminium castings	M\$ 55,000 Malaysia (Bumiputera —)	W. T. I.	22.6.78.	In production
30. Kwong Hup Cheong (Kampar)	21 & 23, Jalan Hussein Ipoh Perak	C.I. products N.F. products (C.I. parts for pumps)	M\$ 1,180,000 Malaysia (Bumiputera —)	W. T. I.	22.6.78.	In production
31. Sun Kong Luan Cheong Foundry Sdn. Bhd.	32, Main Road Pusing, Perak	C.I. pump castings C.I. pipe fitting	M\$ 250,000 Malaysia 100%	W. T. I.	22.6.75.	In production
32. Kwong Hup Hin Foundry	Lahat Road Pusing, Perak	C.I. products N.F. products	M\$ 14,800 Malaysia 100%	W. T. I.	29.6.75.	In production
33. Keong Lee Yoon Foundry Sdn. Bhd.	Site 14, Tasek Road, K.P. Tasek, Ipoh	Iron & steel castings	M\$ 2,000,000 Malaysia 100%	W. T. I.	3.7.78.	In production
34. Kwong Thong Fatt Foundry Sdn. Bhd.	34317, 1 3/4 miles, Lahat Road, Ipoh	C.I. products	Malaysia 100%	W. T. I.	13.7.78.	In production
35. Sun Heng Yip Foundry Sdn. Bhd.	Lot 15108, Jalan Batu Gajah, Pusing, Perak	C.I. pumps parts, other C.I. products	M\$ 37,000 Malaysia Singapore 89.2% 10.8%	W. T. I.	19.7.78.	In production

(List of Approved Castings-related Manufacturers in Malaysia)

Company Name	Address	Products	Capital & Capital Construction	Investment Incentive	Date of Approval	State of Operation
36. Nam Hing Eng. Sdn. Bhd.	21, Jalan Lima, Off Jalan Chan Sow Lin, Kuala Lumpur	Iron castings (production of bandsaw machinery) N.F. castings	M\$ 389,970 Malaysia 100%	W. T. I.	21.7.78.	In production
37. Gopeng Foundry & Co	Batu 14, Jalan Kampar, Gunong Mesah, Gopeng, Perak	C.I. products	M\$ 12,000 Malaysia (Bumiputera -)	W. T. I.	21.3.78.	In production
38. Yan Fong Foundry	Lot 24, Jalan Kuala Kangsar, Ipoh, Perak	C.I. water & gravel pumps, pump parts & valves, other C.I. products, N.F. castings	M\$ 150,000 Malaysia (Bumiputera -)	W. T. I.	21.8.78.	In production
39. Teak Heng Foundry Sdn. Bhd.	Batu 2, Jalan Ipoh, Menglembu, Perak	C.I. castings N.F. castings (penstocks, water valves, pipes & fitt- ings)	M\$ 62,144 Malaysia (Bumiputera -)	W. T. I.	25.9.78.	In production
40. Weng Cheong Foundry	204/206, Jalan Iskandar, Kampar, Perak	Iron castings N.F. castings	M\$ 12,000 Malaysia (Bumiputera -)	W. T. I.	26.9.78.	In production
41. Associated Metal Works Sdn. Bhd.	37, K.P. Bintawa, Kuching, Sarawak	C.I. pipes, fittings, manhole covers, N.F. castings	M\$ 1,200,000 Malaysia (Bumiputera 80%) Foreign 20%	PS	21.10.78.	In production
42. Foong Seong Foundry Sdn. Bhd.	226, Jalan Ipoh, Menglembu, Perak	Iron castings (mining parts, industrial machinery equipment & parts)	M\$ 170,000 Malaysia (Bumiputera -)	W. T. I.	16.12.78.	In production
43. Kinko Steel Mill Bhd.	K.P. Tanjong Agas, Muar, Johor	Malleable pipe fittings	M\$ 3,292,303 Malaysia (Bumiputera -) Singapore 3.8%	PS	19.1.79.	In production
44. See Cheong Foundry	Lot 1205, Lahat Lane, Ipoh, Perak	C.I. products for mining equipment	M\$ 300,408 Malaysia (Bumiputera -)	W. T. I.	27.7.79.	In production
45. Steel Casting & Manu- facturing Sdn. Bhd.	K.P. Ringan, Kepong, Kuala Lumpur	Manganese steel castings, stainless steel castings, other alloy steel castings, iron castings, N.F. castings	M\$ 400,000 Malaysia (Bumiputera 30%)	W. T. I.	30.7.79	Not implemented
46. Tasek Iron & Steel Foundry Sdn. Bhd.	Lot 24, K.P. Tasek, Ipoh, Perak	Alloy steel castings, iron castings, N.F. castings	M\$ 1,500,000 Malaysia (Bumiputera 80%)	I. T. C. 25%	20.11.69.	In production

(List of Approved Castings-related Manufacturers in Malaysia)

Company Name	Address	Products	Capital & Capital Construction	Investment Incentive	Date of Approval	State of Operation
47. United Engineers (M) Bhd.	219, Lahat Road, Ipoh, Perak	Ferrous & N.F. castings, fabrication machinery & equipment	M\$ 15,000,000 Malaysia (Bumiputera 30%) Singapore 49%	W. T. I.	11.2.80.	Closed (since March 83)
48. Gaya Cast Iron Factory	Lot 12, K.P. SEDCO, Jalan Kolombuons, Kota Kinabalu, Sabah	C.I. manhole covers, C.I. surface boxes, C.I. pipes & fittings, C.I. sluice valves, other C.I. valves	M\$ 100,000 Malaysia (Bumiputera 80%)	P S	28.4.80.	In production
49. Castwell Sdn. Bhd.	98, K.P. Air Keroh Melaka	C.I. pipes manhole covers	M\$ 1,300,000 Malaysia (Bumiputera 51%)	W. T. I.	29.8.80.	Closed
50. Jasa Kita Eng. Sdn. Bhd.	308, Jalan Ipoh, Kuala Lumpur	Iron & steel castings & electric motors, sluice valves and gate valves	M\$ 1,000,000 Malaysia (Bumiputera 30%)	W. T. I.	19.2.81.	Not implemented
51. United Castings Sdn. Bhd.	Lot 3457, Batu 7 1/2 Jalan Puchong, Selangor	C.I. pipe fittings, manhole covers, C.I. hydrants	M\$ 380,000 Malaysia (Bumiputera 30%)	W. T. I.	26.2.81.	In production
52. Malaysia Forse & Foundry Sdn. Bhd.	K.P. Bukit Rajah, Selangor	Iron & steel castings	M\$ 500,000 Malaysia (Bumiputera 80%)	I. T. C. 50%	30.7.71.	Not implemented
53. Unicast Eng. Sdn. Bhd.	K.P. Merlimau, Melaka	Iron & steel castings N.F. castings	M\$ 750,000 Malaysia (Bumiputera 30%)	I. T. C. 25%	4.9.81.	Not implemented
54. Duclite Iron Sdn. Bhd.	K.P. Kanthan, Chemor, Perak	Iron & steel castings	M\$ 700,000 Malaysia (Bumiputera 8.6%)	I. T. C. 25%	4.9.81.	Not implemented
55. Eureka Ferro-Alloy Sdn. Bhd.	975, Batu 7, Jalan Kapar, Kelang	Iron & steel castings N.F. products	M\$ 400,000 Malaysia (Bumiputera 30%)	W. T. I.	10.8.82.	Not implemented
56. Lien Yew Eng. Works	Kuala Lumpur	N.F. castings	M\$ 250,000 Malaysia (Bumiputera 30%)	W. T. I.	8.10.82.	In production
57. Puchong Foundry Sdn. Bhd.	126-1, Jalan Mega Mendung, Bandar Park, 5th miles, Jalan Kelang, Kuala Lumpur	Automotive products, valves, hydrants, waterwork fittings	M\$ 2,000,000 Malaysia	W. T. I.	27.1.83.	In production
58. Suh Sung Lee Eng. Sdn. Bhd.	183, West Jelutong, Putau Pinang.	C.I. & N.F. castings	M\$ 350,000 Malaysia (Bumiputera —)	W. T. I.	22.10.82.	In production

(List of Approved Castings-related Manufacturers in Malaysia)

Company Name	Address	Products	Capital & Construction	Investment Incentive	Date of Approval	State of Operation
59. Num Soon Metal Mfg. Sdn. Bhd.	Lot 1, Section 92 & 92A, 3 1/2 miles, Jalan Sungai Besi, Kuala Lumpur	C.I. distribution pipes & fittings, C.I. manhole covers & frames & other C.I. products on jobbing basis	M\$ 300,000 Malaysia (Bumiputera —)	W. T. I.	18.10.84.	In production
60. Svarikat Besi Ban Sun Sdn. Bhd.	K.P. Prai, Pulau Pinang	C.I. sanitary pipe fittings, ferrous and non-ferrous cast parts on jobbing basis	M\$ 400,000 Malaysia	W. T. I.	12.9.85.	In production
61. Lian Yew Mfg. Sdn. Bhd.	Lot 8, Section 92 & 92A, 3 1/2 miles, Jalan Sungai Besi, Kuala Lumpur	i) Castings of bronze, brass, copper & aluminium ii) C.I. hydrants, air valves, manhole covers, breeching & others on jobbing basis	M\$ 300,000 Malaysia (Bumiputera 30%)	W. T. I.	10.10.85.	In production
62. Heavy Industries Corporation of Malaysia Bhd.	HICOM Industrial Estate, Damansara, Shah Alam	Raw cast components	M\$ 97,551,000 Malaysia (HICOM 100% 51%)	I. T. A. 55% (Investment Tax Allowance)	23.8.87.	Under planning
63. Anshin Casting Industries Sdn. Bhd.	K.P. Shah Alam, Selangor	Iron & steel castings for automobile application, valves and pipe fittings & general engineering application. (70% eksport)	M\$ 4,500,000 Malaysia U.S.A., H.K., Singapore	I. T. A. 70%	7.5.87.	In production
64. Matsushita Foundry Industries Sdn. Bhd.	34, Jalan 18/11, Seksyen 16, K.P. Shah Alam, Selangor	Electric graphite cast iron, grey cast iron, modular graphite cast iron (100% eksport)	M\$ 9,800,000 Japan	PS	27.8.87.	Not operating yet
65. Central Foundry (M) Sdn. Bhd.	Kawasan Perindustrian Merlimau, Melaka	Cast iron, malleable iron, ductile iron pipe fittings and other castings (90% eksport)	M\$ 2,000,000 Malaysia (Bumiputera —) Taiwan, Australia 55%	PS	10.12.87.	Under planning
66. Sapura Automotibe Industries Sdn. Bhd.	Lot 98, Jalan Usaha 7, Kawasan Perindustrian Air Keroh, 75450 Melaka	Cast iron/steel automotive parts, pipe fittings, pump parts, valves, manhole cover and other castings	M\$ 1,130,054 Malaysia Foreign 55.3% 44.7%	W. T. I.	17.11.88.	In production
67. Micasfer Sdn. Bhd.	No.36, Jalan Sesama, Kawasan Perusahaan, Ringan Batu Caves, 68100 Selangor	Cast iron/steel castings for railway military & others on the job order basis	M\$ 1,000,000 Malaysia (Bumiputera 100%)			Not operating yet

Source: MIDA

## **II Computers and Computer Peripherals**





**II-1 Questionnaire Survey of Japanese Firms Concerning  
Overseas Production**



## II-1. Questionnaire Survey of Japanese Firms Concerning Overseas Production

Survey period:	November-December 1989
Number of questionnaires sent:	37
Number of valid responses:	20
Response rate:	54.1%

### (1) Exports

Export ratios at the responding companies were as follows:

<30%	11 firms (of which one had no exports)
30-60%	4 firms
≥60%	5 firms

The leading markets for those firms engaged in exports were the U.S. (indicated by 89.5% of the respondents), Europe (73.7%), Asia (36.8%), and Oceania (21.1%), indicating the importance to Japanese manufacturers of markets in the developed nations of Europe and the U.S.

### (2) Distribution of Overseas Production

Table II-1 provides a summary of production plants for computer-related products (excluding semiconductor manufacturing plants) maintained by survey respondents.

17 of the responding firms (of which three were not engaged in overseas production) reported overseas production ratios of less than 30% for the respective products; and three firms, ratios of 30-50%. Thus, production at these firms is concentrated at plants in Japan.

**Table II-1 Overseas Production of Computer-related Products**

	Personal computers	Monitors	Printers	Keyboards	Other	Total number of production bases
U.S.	6 (3)	0	4	0	9	17 (3)
Europe	2 (1)	0	7 (1)	2	0	7 (1)
Korea	1 (1)	0	2 (2)	1 (1)	2 (2)	6 (6)
Taiwan	2 (1)	0	0	1 (1)	0	3 (2)
Singapore	1	0	1	0	1	3
Malaysia	0	0	0	1	0	1
Thailand	0	0	0	0	2(1)	2 (1)
Indonesia	0	0	1 (1)	0	0	1 (1)
Philippines	0	0	0	0	1	1
China	0	0	2 (2)	0	0	2 (2)
India	0	0	1 (1)	0	0	1 (1)
<b>Total</b>	<b>12 (6)</b>	<b>0</b>	<b>18 (8)</b>	<b>5 (2)</b>	<b>17 (3)</b>	<b>—</b>

Note: Figures in parentheses indicate the number of joint ventures, technical tie-ups, and OEM production agreements. Since a variety of products are sometimes produced at the same plant, the total number of plants is sometimes less than the individual total would suggest.

### (3) Forecast for Overseas Production

Regardless of future plans at their own companies, respondents' views concerning the question of which countries/areas would see an increase in overseas production of computers and peripherals are summarized in Table II-2.

The U.S. was by the far the most commonly noted. Overall, there is a trend towards increased local production of personal computers and printers in Europe and the U.S. due to trade friction, while overseas production of keyboards and monitors is expected to rise in Malaysia and Thailand because of the labour-intensive nature of this type of production. Some increase is expected for all products in the NIEs. This is a reflection of two facts: first, despite increased production costs and reduced competitiveness on the international market, these nations have accumulated a great deal of valuable experience as suppliers of keyboards and monitors; and second, improvements in the technical standards of firms in these countries have made them more suitable as production bases for personal computers and printers. In terms of the total number of production plants, Malaysia is third following Europe and the U.S. Concerning peripherals, Malaysia is thought to have the potential to become a leading supplier of low-priced products, following in the footsteps of Korea and Taiwan.

**Table II-2 Forecast for Overseas Production**

	Personal computers	Monitors	Printers	Keyboards	Total
U.S.	18	5	10	4	37
Europe	10	7	9	3	29
Taiwan	5	6	6	6	23
Korea	3	6	7	5	21
Singapore	4	5	4	6	19
Malaysia	1	8	3	13	25
Thailand	2	7	3	9	21
Central and South America	0	2	0	3	5
<b>Total</b>	<b>43</b>	<b>46</b>	<b>42</b>	<b>49</b>	<b>180</b>

Ten responses were obtained from nine companies concerning future plans for overseas production.

Location	Products
U.S.	(1) Personal computers, (2) printers, (3) workstations
Europe	(1) Personal computers, (2) personal computers, (3) undecided
Taiwan	(1) Terminals, (2) monitors
Malaysia	(1) Monitors, (2) parts for printers

#### (4) Evaluation of Malaysia as an Offshore Production Base

In contrast to the predictions obtained in the above-described question, companies were rather pessimistic in evaluations of Malaysia as a candidate for their own overseas production operations, as can be seen from Table II-3. (The figures in the Table indicate the number of companies answering affirmatively.)

Finished product sectors in which Malaysia was indicated as a possible candidate, regardless of the time frame, were monitors (noted by four firms) and keyboards (three firms), while in the field of intermediate components the results were: monitors, four firms; keyboards, five firms; and printers, four firms. At present, therefore, there is greater potential for investment in component production operations.

**Table II-3 Evaluation of Malaysia as a Potential Production Base**

Response	Personal computers	Monitors	Keyboards	Printers
<b>Finished products</b>				
Unthinkable for the time being	12	11	10	14
Possible 4-5 years into the future	1	1	2	1
Possible within 2-3 years	0	2	1	0
May or is now being considered	0	0	0	0
Concrete plans	0	1	0	0
<b>Intermediate components</b>				
Unthinkable for the time being	9	10	7	10
Possible 4-5 years into the future	2	2	4	1
Possible within 2-3 years	1	1	1	3
May or is now being considered	0	1	0	0
Concrete plans	0	0	0	1

**(5) Importance of Criteria for Overseas Production**

What criteria are emphasized by companies when selecting a location for overseas production? Table II-4 shows the results of company evaluations of various criteria based on the following rating system:

- A. Extremely important            3 pts
- B. Relatively important            2 pts
- C. Not particularly important      1 pt

The "basic conditions" required of an investment environment (i.e., infrastructure, political stability, and labour situation, etc.) were of course highly ranked, with most companies considering this item to be extremely important. This was followed by high rankings for "local sourcing," "local market," and "hiring of engineers." "Low wages" received a total of 41 points, placing it almost exactly in the middle. Only 26.3% of the respondents considered this to be extremely important, however, significantly less than the figures for the first four criteria. "Investment incentives" were considered by the respondents to be the least important, and the end result was that those areas in which the industrialized nations are at an advantage were considered to be the most important.

**Table II-4 Importance of Conditions for Overseas Production**

Condition	Evaluation	Percentage of As
Large domestic market	43	70.6
Good availability of local components	47	66.7
Inexpensive labour	41	26.3
Easy hiring of engineers	42	44.4
Difficulty of exports from Japan	35	41.2
Outstanding conditions (infrastructure, political stability, labour situation, etc.)	46	70.6
Availability of investment incentives (tax exemptions, etc.)	35	23.5
Future potential	39	33.3

Note: "Percentage of As" indicates the percentage of responding companies who gave the respective condition an "A" rating.

In general, condition facilitating the location of companies in the computer industry are as follows: (1) a high concentration of industry; (2) the availability of plentiful labour; (3) good access to transportation routes; and (4) a high concentration of urban areas and academia. Computer plants generally include both development and manufacturing divisions. Even if basic research is carried out by a separate organization, it is generally thought to be advantageous for the applied technology and production technology divisions to be integrated with the manufacturing division.

#### (6) Local Sourcing of Components

Companies were asked to rank the necessity of local sourcing of major components based on the following rating system when conducting overseas production of personal computers, monitors, keyboards, and printers.

- A. Local sourcing necessary 3 pts
- B. Local sourcing preferred 2 pts
- C. Local sourcing not very important 1 pt
- D. Large possibility of in-house production 0 pts

Table II-5 shows the importance of local sourcing for various components based on the total of points and the percentage of respondents giving an "A" ranking to the item in question.

In terms of total points, high rankings were given to bulky items like turning parts, plastic injection-moulded parts, and pressed metal parts together with items having a wide variety of applications, such as screws and washers, transformers, switching power supplies, and precision bearings. From the standpoint of universality, general electronic components such as diodes and transistors and resistors and capacitors also received high ratings.

Plastic injection-moulded parts and printed circuit boards boasted the largest percentage of As, with approximately 50% of all respondents indicating that local sourcing was necessary. These were followed by pressed metal components, screws and washers, transformers, switching power supplies, and precision bearings, each receiving an A ranking from about 40% of the responding firms. Parts receiving low rankings were generally products not seeing frequent use, such as LCD panels, rubber rollers, and electromagnetic clutches.

**Table II-5 Necessity of Local Sourcing for Main Components**

Name of part	Evaluation	Percentage of As
Plastic injection-moulded parts	34	53.3
Pressed metal parts	32	40.0
Turning parts (axes, dowels)	35	33.3
Rubber rollers	25	7.1
Rubber belts	28	14.3
Rubber moulded parts	27	15.4
Screws, washers, etc.	34	40.0
Precision springs (coils, sheets)	31	35.7
Precision bearings (balls, sintered alloy)	34	40.0
IC, LSI (MP, ROM, RAM, Gate-alloys TTL, etc.)	28	20.0
Hybrid ICs	25	6.7
Printed circuit boards	31	46.7
Resistors, capacitors	33	35.7
Diodes, transistors, LEDs	33	33.3
Switches	31	28.6
Transformers	34	40.0
Switching power supplies	34	40.0
Solenoids, coils	30	28.6
Wire harnesses, connectors	33	35.7
Photocouplers	23	8.3
Electromagnetic clutches	18	9.1
DC motors, stepping motors	24	23.1
Fans	25	36.4
Liquid crystal panels	18	0
Piezoelectric buzzers	20	9.1
FDD/HDDs	26	14.3
CDTs	27	21.4



Table II-6 shows the results of a questionnaire survey distributed to electronics firms in Malaysia concerning local sourcing of the same components. Rankings were based on the following rating system:

- |                                                                               |       |
|-------------------------------------------------------------------------------|-------|
| A. No problem                                                                 | 3 pts |
| B. Local sourcing possible, but some problems with quality or stable supplies | 2 pts |
| C. Realization of local sourcing is strongly desired                          | 1 pt  |
| D. Little merits for local sourcing                                           | 0 pts |

**Table II-6 Possibility of Local Sourcing of Main Components in Malaysia**

Condition	Evaluation	Percentage of As
Plastic injection-moulded parts	190	40.2
Pressed metal components	172	41.3
Turning parts (axes, dowels)	77	19.0
Rubber rollers	61	25.8
Rubber belts	72	34.3
Rubber moulded parts	73	25.6
Screws, washers, etc.	181	41.5
Precision springs (coils, sheets)	115	28.8
Precision bearings (balls, sintered alloy)	72	25.0
IC, LSI (MP, ROM, RAM, Gate-alloys TTL, etc.)	107	31.6
Hybrid ICs	57	17.5
Printed circuit boards	123	25.7
Resistors, capacitors	168	42.5
Diodes, transistors, LEDs	137	34.3
Switches	126	31.3
Transformers	159	54.5
Switching power supplies	90	26.5
Solenoids, coils	110	26.8
Wire harnesses, connectors	126	30.2
Photocouplers	51	21.9
Electromagnetic clutches	49	17.2
DC motors, stepping motors	66	17.5
Fans	81	51.4
Liquid crystal panels	54	16.7
Piezoelectric buzzers	49	12.5
FDD/HDDs	36	20.8
CDTs	41	15.6

When the two sets of evaluations are compared, large differences can be found in the areas of turning parts, precision bearings, printed circuit boards, and switching power supplies, all of which received poor evaluations for local sourcing. Parts which received better evaluations included IC/LSI, resistors, capacitors, and transformers.



**II-2 List of Companies which Responded to the  
Questionnaire in Japan, and which Have Interest in  
Malaysia as a Potential Production Base**



## (1) List of Companies which responded to the Questionnaire in Japan

1/2

Company	Address	TEL	Product 1)	Product 2)
1. Omron Tateisi Electronics Co.,	〒105 Omron Tokyo Building 4-10 Toranomom 3 Chome Minato-ku	03 436-7271	PC D K P C	—
2. Hitachi Koki Co., Ltd.	〒100 6-2 Ohtemachi 2 Chome Chiyoda-ku	03 270-6130	P	—
3. Canon Inc.	〒163 Shinjuku Daiichi Seimei Building 4-1 Nishishinjuku 2 Chome Shinjuku-ku	03 348-2121	PC D K P	—
4. Casio Computer Co., Ltd.	〒160 Sumitomo Building 39F 6-1 Nishishinjuku 2 Chome Shinjuku-ku	03 347-4790	PC D K P C	—
5. Yamaha Corporation	〒430 10-1 Makazawacho Hamamatsu-shi	0534 60-1111	C	—
6. Sumitomo Electric Industries Ltd	〒107 3-12 Motoakasaka 1 Chome Minato-ku	03 423-5711	C	—
7. Toshiba Corporation	〒105-10 1-1 Shibaura 1 Chome Minato-ku	03 457-2376	PC D K P C	—
8. Fuji Electric Co., Ltd	〒100 Shinyurakucho Building 12-1 Yurakucho 1 Chome Chiyoda-ku	03 211-1175	C	—
9. Kokusai Electric Co.	〒105 3-13 Toranomom 2 Chome Minato-ku	03 591-0498	D K C	—
10. Alps Electric Co., Ltd,	〒145 1-7 Ohtsukacho Ukigaya Ohta-ku	03 726-1211	PC D K P C	—
11. Nanao Corporation	〒924 153 Shimokashiwanoma- cho Matsuto-shi Ishikawa-ken	0762 75-4127	D	—

Note : 1) Main products at present.

PC= Personal Computers, D= Monitors, K= Keyboards, P= Printers,

C= Computer-related Parts

2) Products which are planned to be produced in Malaysia by the company.

## List of Companies which responded to the Questionnaire in Japan

2/2

Company	Address	TEL	Product 1)	Product 2)
12. Seiko Epson Corporation	〒392 3-3-5 Yamato Suwa-shi Nagano-ken	0266 52-3131	PC D K P C	Parts for printers
13. Sanyo Electric Co., Ltd.	〒570 18 Keihanhondori 2 Chome Moriguchi-shi Osaka-fu	06 991-1181	PC D K P C	—
14. Hitachi Ltd.	〒101 4-6 Kanda Surugadai Chiyoda-ku	03 258-1111	PC D K P C	—
15. Matsushita Electric Industry Co.	〒571 1006 Ohaza kadoma Kadoma-shi Osaka-fu	06 908-1121	PC D K P C	—
16. Mitsubishi Electric Co.	〒100 2-3 Marunouchi 2 Chome Chiyoda-ku	03 218-2111	D K P C	Monitors
17. Fujitsu Limited	〒100 6-1 Marunouchi 1 Chome Chiyoda-ku	03 216-3211	PC D K P C	—
18. Tokyo Electric Co.	〒101 14-10 Uchikanda 1 Chome Chiyoda-ku	03 292-4815	P C	—
19. Oki Electric Industry Co. Ltd.	〒108 10-3 Shibaura 4 Chome Minato-ku	03 454-2111	P	—
20. NEC Corporation	〒108 33-1 Shiba 5 Chome Minato-ku	03 798-6521	PC D K P C	—

Note: 1) Main products at present.

PC= Personal Computers, D= Monitors, K= Keyboards, P= Printers,

C= Computer-related Parts

2) Products which are planned to be produced in Malaysia by the company.

(2) Companies Which Have Interest in Malaysia as a Potential Production Base of Computer-related Products

Period	Company	Objective Product
Possible 4-5 years into the future	①Toshiba Corporation	PC and keyboard parts
	②Kokusai Electric Co.,.	Monitor parts
	③Alps Electric Co., Ltd	Keyboards and parts therefor
	④Sanyo Electric Co.,Ltd	Monitors and parts therefor Keyboards and parts therefor
	⑤Matsushita Electric Industry Co.,.	Keyboard parts
	⑥Oki Electric Industry Co., Ltd	Printer parts
Possible within 2-3 years	①Fuji Electric Co., Ltd	PC, keyboard, printer and monitor parts
	②Kokusai Electric Co.,.	Monitors
	③Alps Electric Co., Ltd	Printers and parts therefor
	④Mitsubishi Electric Co	PCs
	⑤Tokyo Electric Co.,.	Printer parts
	⑥NEC Corporation	Monitors and keyboards
May or is now being considered	①NEC Corporation	Monitor parts
Has a concrete plan	①Seiko Epson Co.,.	Printer parts
	②Mitsubishi Electric Co	Monitors





## **II-3 Questionnaire Sheet for the Survey in Japan**



No. \_\_\_\_\_

Questionnaire to the Personal Computer and  
Peripherals Manufacturers in Japan

You are requested to make entries in articles below or to enclose proper numbers with circles about the epitome of your enterprise.  
(Management indices are expected to go with the financial statement base of 1988.)

Name of Enterprise																						
Address																						
Telephone Number																						
Number of Overseas Plants																						
Treated Items	<table> <tr> <td>• Personal Computer</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• Monitor</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• Keyboard</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• Printer</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• HDD</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• Components of the Above Products</td> <td>Have</td> <td>Not Have</td> </tr> <tr> <td>• Others Specifically:</td> <td></td> <td></td> </tr> </table>	• Personal Computer	Have	Not Have	• Monitor	Have	Not Have	• Keyboard	Have	Not Have	• Printer	Have	Not Have	• HDD	Have	Not Have	• Components of the Above Products	Have	Not Have	• Others Specifically:		
• Personal Computer	Have	Not Have																				
• Monitor	Have	Not Have																				
• Keyboard	Have	Not Have																				
• Printer	Have	Not Have																				
• HDD	Have	Not Have																				
• Components of the Above Products	Have	Not Have																				
• Others Specifically:																						
Ratio of Out-sourcing (Shared to Domestic Deal)	<p>A. Less than 30%</p> <p>B. More than 30% (including 30%) and Less than 50 %</p> <p>C. More than 50% (including 50%) and</p>																					
Respondents	<p><u>Division:</u> _____</p> <p><u>Position:</u> _____</p> <p><u>Name:</u> _____</p>																					

I. Present Condition of Overseas Production

You are requested to answer the present condition of your enterprise concerning computer and peripherals.  
As for main markets, please enclose the alphabet among the following note with a circle.

Note) Main Markets: a. Domestic and neighbouring countries b. The U.S. c. Europe d. Asia exclude Japan e. Others

Name of Country	Number of Plants and Partner Enterprises				Main Product	Main Markets
	Self- Investment (100 %)	Joint venture	O E M Arrangement Partner	Technical Tie-up		
Malaysia						a b c d e
Singapore						a b c d e
Korea						a b c d e
Taiwan						a b c d e
The U.S.						a b c d e
The U.K.						a b c d e
* Others						a b c d e
						a b c d e
						a b c d e
						a b c d e

\* Please write down the name(s) of country/countries or area(s)

II. Perspective to Overseas Production in Future

1. Please answer your plan about overseas production in future as long as it suits your convenience.

- A. Advance with 100% Self-capital
- B. Advance through Joint Venture
- C. Consignment of OEM Production
- D. Technical Tie-up

Objective Country	Objective Item	Advance Form	Time of Advance Commencement(Plan)

2. You are requested to put the mark on more suitable column with a circle in evaluating Malaysia as the candidate site for your overseas production of personal computer, monitor, keyboard and printer in future.

	personal computer	monitor	keyboard	printer	H D D
<u>(i) Finished Products</u>					
Impossible for a While					
Around 4-5 Years Later There is Possibility.					
Within 2-3 Years There is possibility as the Candidate Site.					
Possible to Investigate or under Investigation as one of the candidate site.					
There is a Concrete Plan.					
<u>(ii) Intermediary Parts/ Components</u>					
Impossible for a While					
Around 4-5 Years Later There is Possibility.					
Within 2-3 Years There is possibility as the Candidate Site.					
Possible to Investigate or under Investigation as one of the candidate site.					
There is a Concrete Plan.					

3. You are requested to show your priority in choosing the candidate site for your overseas production of personal computer, monitor, keyboard and printer.

- A : Very Important
- B : Relatively Important
- C : Not So Conscious

- ( ) Domestic market is large.
- ( ) High-level local procurement of parts/components can be expected.
- ( ) Labor wage is low.
- ( ) Employment of technicians is easy.
- ( ) Export from the U.S. is not competitive.
- ( ) Fundamental conditions (eg. infrastructure, political situation, labor situation) are excellent.
- ( ) There is potentiality as a market in future.
- ( ) Others (Specifically: \_\_\_\_\_)

4. In which countries/areas do you think production plants possessed by Japanese enterprises of personal computer, monitor, keyboard and printer increase in future in terms of the competent industry as a whole?  
(Plural answers have no objection.)

	personal computer	monitor	keyboard	printer	H D D
The U.S.					
Europe					
Korea					
Taiwan					
Singapore					
Malaysia					
Thailand					
Latin America					
Others :					

5. From which countries/areas do you think overseas OEM procurement of personal computer, monitor, keyboard and printer increase in future in terms of the terms of the competent industry as a whole?  
(Plural answers have no objection.)

	personal computer	monitor	keyboard	printer	H D D
The U.S.					
Europe					
Korea					
Taiwan					
Singapore					
Malaysia					
Thailand					
Latin America					
Others :					





**II-4 List of Malaysian Companies Expecting for Joint  
Ventures or Technical Tie-ups**



	Company	Interests in productions of computer-related products			Desire for technical tie-ups etc.		
		C.P	I	Planned Products	T.T.	OEM	J.V.
21	PERNAS NEC (KEDAH) SDN. BHD.	○	○	PCB PROTOCOL EQUIPMENT		○	○
22	RADIOLA CORPORATION (M) SDN.BHD.		○	—		○	
23	RECTRON (M) SDN.BHD.	○		UNINTERNOPROBLE POWER SUPPLY			
24	RICHWEL INDUSTRIES SDN.BHD.		○	CAPACITORS			
25	SIONG EXPORT INDUSTRIES SDN.BHD		○	COMPUTERS IN GENERAL	○		
26	SWILYNN (M) SDN.BHD.		○	COMPUTER & PERIPHERALS	○	○	○
27	TECHTRANS SYSTEMS SDN.BHD.	○		PCS AND RELATED PARTS			○
28	ACCENT TECHNOLOGY SDN.BHD.	○		ACCENT ENTERPRISE/ATLANTIS /ODYSSEY/386SX/LAPTOP	○	○	○
29	ELECTRONIC OKANO (M) SDN.BHD.		○	KEYBOARD CURL CORDS			
30	EPSON PRECISION (JOHOR) SDN.BHD.	○		EPSON PC PRINTER			
31	I.E.S. INDUSTRIES SDN.BHD.		○	—		○	
32	KYOTRONICS (M) SDN.BHD.	○		—			○
33	MICROCOMPUTER SYSTEMS (M) SDN.BHD.	○		ALRENSY PRODUCING PC	○	○	○
34	MITSUMI ELECTRONICS (BP) SDN.BHD.	○		—			
35	PRECIMA SDN.BHD.		○	PC PERIPHERALS MODEM	○	○	
36	PNE ELECTRIC SDN.BHD.		○	—	○		
37	SINGAMIP INDUSTRY SDN.BHD.		○	—	○		
38	SINGATRONICS (M ) SDN.BHD.		○	PCB ASSEMBLIES	○	○	
39	TECHNOCOM SYSTEMS SDN.BHD.	○		—	○		
40	TELETRON INDUSTRIES SDN.BHD.		○	STABILDER EMARGENCY POWER SUPPLY			○
41	TODAI (M) SDN.BHD.		○	UNDER DISCUSSION			○
42	WEARNES ELECTRONICS (M) SDN.BHD.		○	MONITOR DISK DRIVE			○
43	ZENITH ELECTRIC COMPANY (M) SDN. BHD.		○	—	○		
44	ASTEK PEKAN SDN.BHD.		○	POWER SUPPLY		○	

Note: C.P = Has a concrete plan  
I = Has a interest  
T.T.= Technical tie-up  
J.V.= Joint Venture

List of Companies which Wish to Make Joint Ventures or Technical Tie-ups

1/2

	Company	Interests in productions of computer-related products			Desire for technical tie-ups etc.		
		C.P	I	Planned Products	T.T.	OEM	J.V.
1	APPLIED MAGNETICS (M) SDN.BHD.		○	DISK-HARD PERIPHERALS	○		
2	CANAL ELECTRONIC (M) SDN.BHD.		○	POWER SUPPLY SWITCH		○	
3	CINETECH MANUFACTURING SDN.BHD.		○	PCB ASSEMBLY AND COMPACT MANUFACTURING			○
4	CONNER PERIPHERALS (M) SDN.BHD.	○		FOR NEW PRODUCTS IN HEAD-STACKS			○
5	CYBRON TECHNOLOGY (M) SDN.BHD.	○		SWITCH MODE POWER SUPPLY & CAE EQUIPMENT			
6	DISCCOMP MAGNETICS (M) SDN.BHD.		○	—			
7	EAST COAST ELECTRONIC SDN.BHD.	○		MONITOR	○	○	○
8	EASTRADE ELECTRONICS (M)SDN.BHD.		○	SWITCH MODE POWER SUPPLY, KEYBOARD AND OTHER COMPUTER PERIPHERALS	○		○
9	FRS (M) SDN.BHD.		○	—			
10	GG CIRCUITS INDUSTRIES SDN.BHD.		○	PERSONAL COMPUTER	○	○	○
11	INNO POWER ELECTRONICS SDN.BHD.	○		—			○
12	INNO POWER KEIDENKI SDN.BHD.	○		—			○
13	LEMTRONICS SDN.BHD.	○		PARTS FOR IBM PRODUCTS			
14	MEXTOR SINGAPORE LIMITED	○		DISK DRIVES SUB ASSEMBLIES ONLY INTERVAL TO COMPANY			
15	MEUAUGE MICRO ELECTRONICS SDN.BHD.		○	MASS MEDIA STORAGE EQ ROM COMPACT DISK FOR DATA			○
				COATING FOR DATA STORAGE MEDIA			
16	MERANTI COMPUTERS SDN.BHD.		○	—	○		
17	MITSUOKA ELECTRONICS (M) SDN.BHD.	○		DIE-CASTING			
18	MOLEX (M) SDN.BHD.		○	—			
19	PAN INTERNATIONAL ELECTRONICS (M) SDN.BHD.		○	PCB COMPUTER PARTS			
20	PERNAS NEC TELECOMMUNICATIONS SDN BHD.	○	○	PCB PROTOCOL EQUIPMENT		○	○

**II-5 List of Approved Computer-related Manufacturers  
in Malaysia**



## Approved Computer-related Manufacturers in Malaysia

Company	Address	Products	Capital Consturaction	a	b	c	d	e
1. Acculine Industries (M)	Plot No.66, Non Free Trade Zone K.P. Bayan Lepas, Bayan Lepas, 11900 Pulau Pinang.	Computer peripherals	U.S. 100%			100	87	△
2. Inforland Industry	60 Weld Quay, 10300 Pulau Pinang.	Computer peripherals & parts therefor	Taiwan 50% Local 50%			50	87	△
3. Kyodo Industries	Suite 1404, Tingkat 14, Merlin Tower, Jalan Meldrum, 80000 Johor Bahru, Johor.	Computer sub-assembly	Japan 49% Local 51%			100	87	△
4. Maxtor Singapore	7A Jalan Kampong Attap, 50460 Kuala Lumpur.	Computer peripherals Parts for disk drives	Bahama 100%			100	87	○
5. Micro Base Electronic	No.219, Imbi Plaza, Jin, Imbi, 55100 Kuala Lumpur.	Computer peripherals & parts therefor	Singapore 40% Local 60%			70	87	○
6. Control Data Components (M)	Lot 1979, K.P.Bebas Bayan Lepas, Pulau Pinang.	Parts for disk drives	U.S. 100%			100	88.5	○
7. Applied Magnetics (S)	Fasa I, Kawasan Perdagangan Bebas Bayan Lepas, Pulau Pinang.	Parts for disk drives	U.S. 100%			100	88.6	○
8. Lemtronics	Lot 1997, K.P.Bebas Fasa II, Pulau Pinang.	Computer read-heads assembly	Australia -		WTI	100	88.8	○
9. Eng Technologi	Plot 69, Pesiaran Kpg. Jawa, Bayan Lepas Non Free Trade Zone, 11900 Bayan Lepas, Penang.	Parts for disk drives	Unknown 30%			80	88.7	In '90'

Source: Compiled from projects approval lists of MIDA (1987-1990.3)

Note: a = Type of investment, b = Type of investment incentive enjoying, c = Export ratio, d = Year of approval, e = Progress of the project (○ = In production, △ = Unknown)

## Approved Computer-related Manufacturers in Malaysia

2/4

Company	Address	Products	Capital Consturaction	a	b	c	d	e
10.kobe Precision (M)	PT 74, Seksvyen A, K.P. Hicom, Shah Alam, Selangor.	Parts for disk drives	Japan 100%			100	88.8	○
11.Saimag Inc.	K.P. Pasir, Gudang, Johor.	Parts for disk drives	U.S. 100%			100	88.8	△
12.Hitachi Metals Electronics (M)	K.P. Bebas, Prai, Prai, Pulau Pinang.	Parts for disk drives	Japan 100%			85	88.9	○
13.Vikay Industrial	K.P. Pasir, Gudang, Johor Darul Takzim.	Liquid crystal displays	Singapore 100%			100	88.9	○
14.Data dunia	14G, Jalan Dato' Abdullah Tahir, Johor Bharu, Johor Darul Takzim.	keyboard cords	Singapore 90%			90	88.10	△
15.Hitec Electronics	Jalan Permatang Tingsi, Seberang Prai, Pulau Pinang.	Computer and peripherals	Taiwan 100%	New	PS	80	89.2	△
16.Conner Peripherals (S)	No. 981, Solok Perusahaan Tiga, Kaw. Miel, K.P. Prai, 13600 Prai, Pulau Pinang.	Disk drives Parts for disk drives	Singapore 50% U.S. 50%	New	PS	100	89.2	○
17.Brother Industries Technology (M)	K.P. Teprau, Johor Darul Takzim	Printer heads and keyboards for typewriters	Japan 100%	New	ITA	100	89.3	○
18.Ribbon Cassettes	Tampoi, Johor Bahru, Johor Darul Takzim.	Computer printer ribbons	S'pore 100%	New		90	89.4	△
19.San Teh Industries	Lot 58, Batu II, off Jalan Cheras, 43000 Kajans, Selangor Darul Ehsan	Keypads and keyboards	Singapore 80%	New		-	89.4	△

Source: Compiled from projects approval lists of MIDA (1987-1990.3)

Note: a = Type of investment, b = Type of investment incentive enjoying, c = Export ratio, d = Year of approval, e = Progress of the project (○ = In production, △ = Unknown)



## Approved Computer-related Manufacturers in Malaysia

Company	Address	Products	Capital Consturaction	a	b	c	d	e
20. Wajarama	Lot 8, Kinapar off mile 6 1/2, Jalan Tuaran, 88300 K.K'Balu, Sabah	Computer cables assembly	-	New		100	89.4	
21. Siltek Corporation (M)	Pulau Pinang.	Keyboards, keypads and computers assembly	Taiwan 100%	New		80	89.6	
22. Sony Mechatronic Products (M)	K.P. Bebas, Pai, Pulau Pinang.	Disk drives	S'pore 100%	New		100	89.6	
23. Chew Chuan Seng	Plo 319, Jalan Perak Dua, Pasir Gudang Ind. Est Johor Bharu.	Parts for disk drives	S'pore 100%	New		100	89.6	
24. Mitsubishi Electronics MFG. (M)	Plot 32 KP. Senai Johor Bharu.	Colour monitors	Japan 100%	New		100	89.8	
25. Acer Sdn. Bhd.	K.P. Seberang Jaya Pulau Pinang.	Computer and prlipherals and parts therefor	Taiwan 100%	New		90	89.9	In 90'
26. Sonica Technologies Sdn. Bhd.	Plot 41 KP. Senai Johor Bharu.	Colour monitors	S'pore 100%	New		95	89.9	
27. Wearnes Electronics (M)	No. 99, Jalan Parit Masjid 82000 Pontian, Johor Bharu.	Colour monitors	S'pore 67.5%	Add		100	89.9	○
28. Yano Electronics (M)	KP. Tuanku Jaafar, Batu 3 Jalan Tampin, Senawang Negeri Sembilan.	Parts for floppy disk drives	Japan 100%	New		100	89.9	
29. Chia Loo High Tech Co. (M)	Plot No. 98, Ke. Jawa Penang	Computer diskets	Taiwan 100%	New		100	89.10	
30. Stanford Industries Sdn. Bhd.	No. 1016 Jalan Baru, Prai Pulau Pinang	Power supplies	Taiwan H.K. 62.5% 27.5%	New		80	89.11	

Source: Compiled from projects approval lists of MIDA (1987-1990.3)

Note: a = Type of investment, b = Type of investment incentive enjoyings, c = Export ratio, d = Year of approval,  
e = Progress of the project (○ = In production, △ = Unknown)

## Approved Computer-related Manufacturers in Malaysia

4/4

Company	Address	Products	Capital Consturaction	a	b	c	d	e
31. Elitech Electronics (M)	Johor Bahru, Johor	Computer mouses Computer net-working devices	S'pore 100%	New		100	89.12	
32. Fine Jack Industrial (M)	KP. Kulim, Kedah	Modular jacks for computers and telecommu- nications	Taiwan 100%	New		90	89.12	
33. Hiroshiga (M)	Lot 616, Phase I, Nilai Ind. Est. Negeri Sembilan	Parts for hard disk drives	Japan 100%	New		80	90.2	
34. Ever Great Industrial	No. 3165, Jalan Permatang Pauh, 13400 Butterworth Penang	Computer and peripherals and parts therefor	Taiwan 100%	New		90	90.2	
35. Taiwan Liton Electronic (M)	Plot 150, Fasa I, KP. Bayan Lepas, Penang	Power suppllies Computer FAX machines	Taiwan 100%	New		95	90.2	

Source: Compiled from projects approval lists of MIDA (1987-1990.3)

Note: a = Type of investment, b = Type of investment incentive enjoying, c = Export ratio, d = Year of approval, e = Progress of the project (O = In production, Δ = Unknown)



JICA