SALES GROWTH, PROFITABILITY AND PERFORMANCE: EMPIRICAL STUDY OF JAPANESE ICT INDUSTRIES WITH THREE ASEAN COUNTRIES

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ABSTRACT

The world has witnessed remarkable growth and diffusion in information and communication technologies (ICT) system in this decade. The further development of the ICT industry will become a major factor for economic growth. This empirical research which aimed to investigate the performance by analysing sales growth ratio and profitability ratio in ICT industry between Japan and three ASEAN countries. Data from Orbis Database (OVBD) were analysed; 24 ICT companies in ASEAN region which consist of Thailand, Malaysia, and Philippines; and 69 ICT companies in Japan by using t test technique. The findings revealed that Japan and ASEAN had no significant difference with each other in their sales growth performance. Meanwhile, ASEAN shows better performance in profitability when comparing with Japan in ICT industry. The analysis also support The Global Information Technology Report publish by INSTEAD and World Economic Forum, OECD report and previous literature studies. It also has practical implications for business leaders and owner managers in ICT sector.

Keywords: ICT, ASEAN, Japan

1. INTRODUCTION

For several decades, Information and Communication Technology (ICT) had proved to be a key technology. The world has witnessed remarkable growth and diffusion in ICT system usage in this decade. The further development of the ICT industry will become a major factor for economic growth. Previous ICT researcher has examined the importance in measuring ICT developments (Hilbert, et.al, 2010), ICT diffusion (Wu & Chu, 2010;Vicente &López, 2006), ICT investment in growth performance (Colecchia& Schreyer, 2002; Jorgenson, 2001;), ICT production and productivity (Sam, et.al, 2012; Jorgenson, 2003; Oliner&Sichel, 2002; Bharadwaj, 2000; Powell & Dent-Micallef, 1997; Mata, et.al, 1995; Nault& Dexter, 1995;), ICT business owners and characteristics (Thatcher &Perrewe, 2002; Attewell, 1992; Delone, 1988) but none had measured the performance in ICT industry regarding in profitability ratio and sales growth.

ASEAN is structuring a network of ICT skills competency hubs to promote partnership amongst these hubs to harness the benefits of ICT applications including training of ASEAN SMEs. ASEAN efforts to establish the Information Infrastructure continued with a view to promote security, interconnectivity, and integrity. National Information Infrastructure profiles database has been created to boost competition, rapid positioning of new technology and ICT investment in the region. ASEAN needs an integrated and strategic approach to achieve these outcomes. With the ASEAN ICT Masterplan 2015, it will provide a clear plan of action till the year 2015.

It summarizes the delivery of a single shared vision driven by 6 strategic thrusts to deliver 4 key outcomes: 1. ICT as an engine of growth for ASEAN countries; 2. Recognition for ASEAN as a global ICT hub; 3. Enhanced quality of life for peoples of ASEAN; 4. Contribution towards ASEAN integration. As for the pillars, there are six strategic thrusts: 1. Economic transformation; 2. People empowerment and engagement; 3. Innovation; 4. Infrastructure; 5. Human capital development; 6. Bridging the digital divide. People can receive services without being aware of the networks under "the u-Japan policy," a continuous ubiquitous network environment. The aim is to realize a value-creation oriented culture and new values emerge in which ICT enters deeply into people's lives through creative ICT usage.
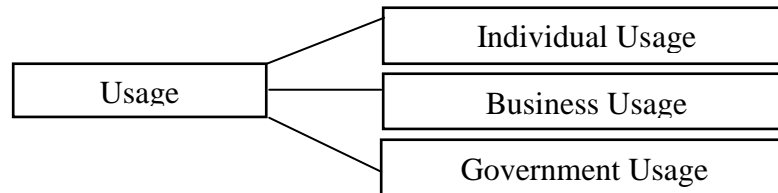
Therefore, the main objective of this paper is to investigate the performance by analysing sales growth ratio and profitability ratio in ICT industry between Japan and three ASEAN countries. Thus, the results of this empirical research will give an important indicator of financial report of ICT companies determine the performance by analysing the sales growth and the profitability ratio among the highly competitive market and less competitive market in the region.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1 INFORMATION AND COMMUNICATION TECHNOLOGY PERFORMANCE

As ICT continues to drive innovation, productivity, and efficiency gains across industries as well as to improve citizens' daily lives, The Global Information Technology Report series, produced by the World Economic Forum in partnership with INSEAD and published annually since 2001 has contributed to informative the drivers of ICT performance and the importance of ICT diffusion for overall competitiveness. The Networked Readiness Index (NRI), featured in the series, has provided a broad methodological framework identifies the enabling factors for countries to fully benefit from ICT advances while stressing the joint responsibility of all social actors namely businesses, individuals, and governments.

Based on three main principles, figure 1 below shows the NRI framework measures the level to which different economies benefit from the latest ICT developments as follows:

1. An ICT-conducive environment as crucial enabler of networked readiness for national shareholders in a given country to influence ICT for greater growth.

2. Although the government plays the main role when it comes to establishing an ICT environment and putting ICT penetration to a structural transformation of the economy, a multi-stakeholder effort is required to achieve ICT competency and to increased growth prospects.

3. Showing a greater interest toward ICT advances will be likely to use it more effectively and widely in ICT usage.

From the Global Technology Report, table 1 below shows the selected NRI according to the countries that being analysed in this study. In 2008-2009 report, Japan was in the 17th rank and a slight fall in 2009-2010 to rank 21st but climb up back to rank 19th. The best position is in 2006-2007 report whereby Japan position itself number 14. Meanwhile, Malaysia, throughout these six years, maintaining its rank position around the 26th and 29th. 2008-2011 report shows that Thailand and Philippines, both countries drop its rank position to 59th and 87th.

Insert Figure 1: The Networked Readiness Index: The framework
Source: World Economic Forum

Insert Table 1: The Networked Readiness Index rankings
Source: The Global Information Technology Report and summarize by the authors

The NRI report has stressed the importance of ICT in national development strategies and competitiveness and has proven a unique tool also providing a unique international benchmarking tool for decision makers and all relevant stakeholders toward enhanced networked readiness. This report is best practices in networked readiness relating to the ICT industry and inspired other countries to follow. Composition and computation of the Networked Readiness Index can be referred to Attachment A

2.2 SALES & PROFIT MAXIMIZATION

The main goal of leaders in large companies is to maximize the revenue and that the increase in sales will always continue, even at the expense of lower profits, in both the short and long-term (Baumol, 1959). Baumol has provided an addition to the ever-increasing body of oligopoly theory by substituting sales maximization, with a minimum profit constraint, for profit maximization as the goal of the large business firm.

Insert Figure 2: Baumol's Sales-Maximization Model
Source: Baumol (1959). "Business Behaviour, Value and Growth."
Sandmeyer(1964). "Baumol's Sales-Maximization Model: Comment."

In the figure 2 above, in the short-run, total sales are viewed as a function of output and prices while, in the long run, output, prices and advertising were shown. With a given demand curve, in the short term, the output will grow as prices fall beyond the point of maximum profit to total revenue, either maximum or, if total revenue is still growing up to achieve a minimum profit constraints (Baumol, 1959). In the total sales curve, each point represents a point of maximum total revenue, a specific level of advertising which associated with the demand curve. Sandmeyer, 1964 mentioned that beyond the point of maximum profit, sales are extended as in the short-run, but the ensuing decline of profits to the minimum profit constraint, resulting from a rate of increase on sales less than the rate of increase in costs-sets the limits to sales expansion.

Baumol had proved that the oligopolist is in equilibrium as the output and the price where recognized profit is equal to the minimum suitable profit. Without concern to the reactions of competitors, the firm varies output by increasing or decreasing price. Hence, the oligopolist has an independent price policy which can be used to increase sales revenue by a minimum adequate profit. By increasing the advertising budget and price, oligopolist continues until a maximum revenue is achieved which is just equivalent to total cost plus the minimum suitable profit. If the firm carried out to extremes, sales maximization could very well result in bankruptcy, Baumol (1959) note a minimum profits constraint importance: profits must be at least acceptable to satisfy shareholders and to provide funds for growth.

Oligopolistic firms tend to compete with their rivals' overseas investments (Knickerbocker, 1973). ''Oligopolistic reaction'' or the ''bandwagon effect'' is called from the subsequent concentration of entries into a country, over a short time period. Contrast to the implicit collusion in the competitive investment strategy is the result from the bandwagon affects whereby, the focus of the classical economics literature on oligopolistic industries (Scherer & Ross, 1990). It suggests that maximizing joint profits are the targets by the small number of players in an oligopoly, while situation to perfect competition are from industry with many firms and decreases the possibility of collusion.

Profit maximization is interpreted as the desire to maximize the present value of the firm. Since net revenue, total revenue and assets all expand permanently at the same rate, all this are in the context of a permanent growth maximization model interpretation. Meanwhile, study for Japan industry, main banks often tried to stress their client firms to involve in sales maximization rather than profit maximization (Meerschwam, 1991). The same cost structure, keiretsu firms will produce higher output levels and use more capital than other firms in the market, their connection with banks may provide a foundation for the common argument; keiretsu firms try to maximize market share rather than profits (Meerschwam, 1991).

Baumol hypothesizes that the firm tries to maximize sales to a profit constraint if the firm were a profit maximizer. A sales-maximizer who could only just satisfy his minimum profit constraint would act in the same way as a profit-maximizer is (Baumol's, 1959). This is extended to maximization of the growth rate of revenue in Baumol (1962).

3. FINANCIAL PERFORMANCE

Financial managerial performance is defined in terms of profitability, debt management, and asset management. Debt management is measured by total debt to equity and long-term debt to equity. Profitability is measured by return on equity, return on assets, and return on investment. Asset management is measured by receivable turnover, total asset turnover, and inventory turnover (Asheghian, 2012). Few research examining the accounting information from developing countries (Davis-Friday & Rivera, 2000). Prather and Rueschhoff (1996) note that comparative studies, especially those relating to the developing countries, concerning accounting harmonization in developing theories and models.

Traditional financial indicators are the most common used financial ratios in the performance evaluation that are usually related to profitability (Yalcin et. al., 2012). Balance sheet and data in income statement from financial ratios considered as critical measurement tools in determining financial assets of companies and performance. Financial performance concept is considered under different meanings such as productivity, return, economic and output growth, using the financial ratios for both companies and related sectors can be suitable for performance evaluation (Yalcin et. al., 2012).

Empirical evidence suggests that survival correlates positively with satisfaction measures of financial performance (Geringer and Hebert, 1991). Previous research suggests that for a firm's capacity to gain profit is highly correlated to the profitability and attractiveness of the industry operation (Elango&Sambharya, 2004). A company's profitability can be amplified through multinational operations, rents produced by proprietary assets that are developed at home and then used internationally (Geringer et. al., 1989; Bergsten et. al., 1978). Findings by Ghahroudiet. al., (2010) indicate that multinational companies (MNCs) prefers internalization where the market does not functions poorly or exist so that external route transactions expenses are high.

Traditional financial provide useful quantitative financial information to both experts and investors to evaluate company operation and analyse its position within a certain time (Gallizo& Salvador, 2003).Most practitioners accepted return on assets (ROA) and other financial ratios as indicators of performance in western companies (Doyle, 1994). Kim et. al., (1989) mentioned that ROA measures the efficiency with which a company produces its output, and matched for analyses of synergies and the actual performance in business operations.

Factors that influence sales growth range from promotion to internal motivation and retaining of talented employees to the implicit opportunities for investments in new technologies and equipment in the production process. In addition, it benefits learning curve and opportunities for economies of scale provided by sales growth. Most literature in market share explores whether underlying market features, such as economies of scale and market share, deliberate competitive advantage (Buzzell et al., 1975). Kaplan and Norton (1992, 1993, 1996) claim that to reach their financial objectives effectively, firms must use a wide diversity of goals, including sales growth.

Other studies investigate the relation between market share growth and profitability. Mancke (1974) suggests the market share benefits may come from unobserved variables that create imitation relation. Jacobson and Aaker (1985) and Jacobson (1988) empirically investigate this probability, statistically control for unobserved features and significantly reduce the estimated correlation between profitability and market share. Sales growth generally utilizes capacity more fully, which spreads fixed costs over more revenue resulting in higher profitability. Audretsch (1995) used a new data base to measure company-level innovative activity used for testing firm growth, profitability and size. He found that high growth generates more innovative activity for firms in low technological- opportunity industries, but not in high-technological opportunity environments.

Hypothesis 1 (H1)

Japanese ICT companies Sales Growth is better than ASEAN ICT companies Sales Growth

Hypothesis 2 (H2)

Japanese ICT companies Profitability is lower than ASEAN ICT companies Profitability

From the hypotheses above, a conceptual framework can be built and shown as Figure 3 below.

Insert Figure 3: Conceptual Framework

4. METHODOLOGY

4.1 SCOPE OF THE STUDY

The main objective of this study is to compare the performance of ICT industry between ASEAN and Japan by analysing sales growth ratio and profitability by using financial database and the linkage between these outputs with either Sales Maximization or Profit Maximization model.

4.2 SAMPLE

ASEAN are form by several country members; Malaysia, Thailand, Brunei Darussalam, Singapore, Philippines, Cambodia, Indonesia, Laos, Vietnam and Myanmar. In this research, only, Malaysia, Thailand, and Philippines were selected due to the limitation data availability in the Orbis database can only be found within these countries. Indeed, others countries in ASEAN which is not selected in this study do have ICT companies listed in the database but, the total population are very small and to find financial data in the consecutive years are hard to identify. Meanwhile, Japan was selected in this research because this country is well known for its up-to-date technology especially in ICT sector and also most ICT products were from Japan.

The sample consists of 24 companies in ASEAN; Thailand, Malaysia, and Philippines and 69 companies in Japan. The data was extracted from the Orbis Bureau Van Dijk Database (OBVD) published between 2006 and 2010. It provides a list of ICT industry which consist Telecommunication Industry; Computer Programming, Consultancy, and related activities; and Information Services Activities. The sample was selected based on the availability of Profitability Ratio.

The number of samples in this analysis was within 5 years and there were only a small number of companies provide their consecutive financial information. This limit dataset was supported by Keith et. al., (2010) who mentioned that although the dataset is small and limits the findings characterised by small samples that reflect the limited population of adequately knowledgeable respondents. Disclosure financial information by large firms that could endanger their

competitive position is also one of the reasons that limit the samples taken (Hossainet al.2006; Watson et al., 2002; and Ho& Wong, 2001).

4.3 MEASURES

All variables from Profitability Ratio are derived from the OVBD database such as return on capital employed (ROCE); return on total assets (ROA); and profit margin. ROCE is one of the types of return on investment (ROI) (operating profits/capital employed). It provides a test of profitability related to the source of long term funds. The higher the ratio, the more efficient is the use of capital employed. From ROA formulation shows the efficiency the management utilizes their assets to generate earnings and the higher return means the better profit performance for a company. It is one of the important tools to compare the company's performance with its competitor (Yalcin et. al., 2012). Profit margin shows how much profit the company makes for every dollar of sales. Sales growth should be considered within the context of industry conditions and trends as well as local, regional and national economies. . If the company is growing at rates that challenge its financial leverage, it may actually suffer financial problems due to its growth rate.

4.4 STATISTICAL METHODS

SPSS statistics package 13.0 will be used to run the t test technique will be used to test the hypothesized models.

5. DISCUSSION AND EMPIRICAL RESULTS

Profitability is the most substantial criteria for financial performance of an enterprise. In this study, profit margin has been selected to represent the profit. By t test, we can determine the mean for profit margin in each country that is going to be analyse. Variables were selected from the profitability ratio in the OVBD database; Return on shareholder funds % (ROSF), Return on capital employed % (ROCE), Return on total assets % (ROA), Profit margin %, Solvency ratio, Current ratio and Liquidity ratio.

As a measurement of the profit, ROSF had been by industry a stockholder which is available to the owner's stake in a company. ROSF high percentage indicates that the company is profitable and has more profit available to shareholders. The higher the ROCE, the better and this figure need to be compared from the previous year for a trend in rising or falling. ROA shows the ability for a company to generate profits for every dollar of assets they had invested (Palepu, Healy, & Bernard, 2000). Solvency ratio measure a company's ability to meet its long-term obligations. A high solvency ratio indicates a fit company. Current ratio and liquidity ratio measures a firm capability to meet its short-term debts. As for the current ratio, the acceptable value for a healthy company is generally between 1.5 and 3. Meanwhile, for the liquidity ratio, if the value is greater than 1.00, it means fully covered.

We analysed the data by using t test and the result is shown in Table 2, Table 3 and Table 4 below. From this result, it shows that ASEAN sales growth ratio from 2006 to 2010 is at 2.19 with its mean value; meanwhile Japan is at 3.48. We also conducted for 4 years data; 2007 to 2010 and shows that Japan with its mean value 0.44 and ASEAN 0.36. This can be concluded that Japan had a better sales growth than ASEAN in ICT industry and support hypothesis 1.

Insert Table 2: Mean Output for Sales Growth Ratio

Insert Table 3: Output for Profitability Ratio 2006-2010

Insert Table 4: Output for Profitability Ratio 2007-2010

The result in Table 3 shows that ASEAN had the highest mean value with 23.13 in ROSF compare with Japan which obtain 14.18. It shows that, in ICT industry ASEAN gains more profit available to its shareholders even if compare with Japan. As for the ROCE, ASEAN gets the top position by 20.48 in mean value and its shows that ICT industry in ASEAN gains better from its assets and liabilities while Japan has 12.57 in mean value. ASEAN again had set the highest score in the ROA with its mean value 13.02. This shows that ASEAN ICT companies had the highest ability to generate profits rather than Japan with mean value 8.16. All variables shows a significance value

Meanwhile, ASEAN had the best performance in Profit Margin which its mean value is at 15.05. It determines that, ICT companies in ASEAN are good in controlling their operation cost. Japan is at 7.06 in its mean value for profit margin. Profit Margin is a good measurement tool for investors to compare companies in the same industry and well as between industries to determine which are the most profitable. In the solvency ratio, current ratio and liquidity ratio, all countries shows that they are fit in the ICT industry and able to meet its short-term and long-term obligations. We also conducted for 4 years data; 2007 to 2010 and shows that ASEAN had better performance in profitability compare with Japan. From this analysis ASEAN ICT companies is the most profitable country compare to Japan supports the hypothesis 2.

According to the sales maximization model, Japan had a significant sales growth but gain a minimal profit in ICT industry. Japan focuses more on brand image rather than increase their business profit. This was the opposite view from the ASEAN countries which look forward into profit making. John Williamson (1966) provides a comparison of profit maximization, growth rate maximization, and discounted revenue maximization. These authors argue that the minimum profit constraint comes from the job security interest of the managers: a low profit level (thus share price) increases the possibility of seizures.

ASEAN and Japan had a great drop in their sales since 2008 to 2010 because of the economic recession. The semiconductor industry, as usual, was the earliest of all ICT sectors to be hit. High manufacturing over-capacity in the last quarter of 2008 and the first quarter of 2009 have significantly increased the pressure on employment in the industry, refer to figure 4 (OECD, 2009b). The electronic sector was hit by declining global sales led by falling demand for a wide range of consumer electronics and related components. Quarterly revenues started to fall in the last quarter of 2008, with Japanese firms suffering the strongest decline in the first quarter of 2009 partly due to a strong Japan Yen, suggesting significant layoffs in Japan (OECD, 2009a).

Insert Figure 4: Utilization Rate of Semiconductor Manufacturing Facilities

Source: Semiconductor Industry Association, August 2009

The Japanese consumers are said to be sophisticated and sensitive and at the same time they do not tend to be satisfied, but tend to be attracted by originality (JETRO, 2008). It is, therefore, a foreign company should differentiate its brand and claim originality to the Japanese consumers, but any product differentiation is likely to be imitated by Japanese competitors right away. This can be referring to the table 5 below where in Japan; the consumer sophistication ranking is in the top chart compare to other countries in three consecutive years.

Insert Table 5: Buyer sophistication rankings

Source: The Global Information Technology Report and summarize by the authors

6. CONCLUSION

In this study, the main objective was to explore the performance by analysing sales growth ratio and profitability ratio in ICT industry between Japan and ASEAN countries. Past literature review indicates study on ICT performance on usage, production and productivity, developments, diffusion, investment in growth performance, ICT business owners

and characteristics but none had measured the performance in ICT industry regarding in profitability ratio and sales growth. By using Global Information Technology Report publish by INSTEAD and World Economic Forum; ICT company financial report from OVBD database, Sales and Profit Maximization Model and OECD report as our references.

From these empirical results, we can summarize that Japan engage in Sales Maximization Model whereby, Japan had a good performance in sales growth rate compare with ASEAN but not in the profitability performance in ICT sector. This study revealed that Japan had better performance in sales growth compare with ASEAN and this support hypothesis 1. This result also supports the findings from Global Information Technology Report 2008, 2009 and 2010; buyer sophistication rankings where consumers play a big role in purchasing power. The Japanese consumers see the total product as consisting of tangible and intangible components. Tangible value is placed on the product by the purchaser and it is considered an image associated with the use of the product. In a marketing perspective, consumers need to be provided with items with maximum value. The determination includes the relationship between cost and quality. By the way, both region shows decline in sales from 2008 to 2010 due to economic recession and the effect from the semiconductor industry. This finding supports the report from the OECD report 2009.

Performance in ICT industry shows that ASEAN region had better profit gain compare with Japan by analysing the profitability ratio from OVBD database and this support hypothesis 2. ROSF, ROCE ROA and Profit Margin shows high mean value in ASEAN compare with Japan. Besides indicating overall efficiency, profit margins of firms competing on basis of costs are generally under pressure because of rising competition. The profit margin measures the relationship between profit and sales. Japanese ICT companies have a long-standing tradition of doing all of the activities in the production process in an integrated and continuous process, as they believe in the synergetic effect of a seamless operation. It was their view that good communication and flow of information cutting through the different stages of operations are of crucial importance to efficient production. The long-standing relationships between assembly companies and suppliers of parts and components, which were once criticized as the symbol of the impenetrable Japanese market, were formulated based on this conviction.

Moreover, Japanese companies are convinced that competencies in creating strategic international alliances with complementary strengths are significant for them to produce services and goods that meet various new needs arising from globalized ICT market. The limitation of our study is the financial information from the ICT industry is few. From the OVBD database there are hundreds of companies listed under ICT sector but few published their financial report maybe full disclosure of information could endanger their competitive position. Further studies can be applied through the analysis in R&D, consumer behaviour and also managers in ICT industry.

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Attachment A

Composition and computation of the Networked Readiness Index

NETWORKED READINESS INDEX

Networked Readiness Index = 1/3 Environment component subindex + 1/3 Readiness component subindex + 1/3 Usage component subindex

Environment subindex = 1/3 Market environment + 1/3 Political and regulatory environment + 1/3 Infrastructure environment

Notes

a The computation of the NRI is based on successive aggregations of scores, from the variables level (i.e., the lowest level) to the overall NRI score (i.e., the highest level). For example, the score a country achieves in the 3rd pillar, Infrastructure environment, accounts for one third of the Environment subindex. Similarly, the Usage subindex accounts for one third of the overall NRI score.

b The standard formula for converting hard data is the following:

6 x ((country score-sample minimum)/(sample maximum-sample minimum))+1

The sample minimum and sample maximum are, respectively, the lowest and highest country scores in the sample of countries covered by the NRI. In some instances, adjustments were made to account for extreme outliers. For those hard data variables for which a higher value indicates a worse outcome (e.g., total tax rate, time to enforce a contract), we rely on a normalization formula that, in addition to converting the series to a 1-to-7 scale, reverses it, so that 1 and 7 still correspond to the worst and best possible outcomes, respectively:

-6 x ((country score-sample minimum)/(sample maximum-sample minimum))+1

Sources:

The Global Information Technology Report, World Economic Forum

Dutta (2007- 2012)

Attachment B

List of Companies

Malaysia

1. KUB MALAYSIA BERHAD
2. HEITECH PADU BERHAD
3. IRIS CORPORATION BERHAD
4. COMINTEL CORPORATION BHD
5. MESINIAGA BERHAD
6. EFFICIENT E-SOLUTIONS BERHAD
7. WILLOWGLEN MSC BERHAD
8. EXTOL MSC BERHAD

Philippine

1. PHILIPPINE LONG DISTANCE TELEPHONE COMPANY
2. GLOBE TELECOM INC
3. LOPEZ HOLDINGS CORPORATION
4. ABS-CBN CORPORATION
5. GMA NETWORK INC
6. IPEOPLE INC
7. MANILA BROADCASTING COMPANY

Thailand

1. ADVANCED INFO SERVICE PCL
2. BEC WORLD PCL
3. ADVANCED INFORMATION TECHNOLOGY PCL
4. KRUNGTHAI COMPUTER SERVICES CO LTD
5. CS LOXINFO PCL
6. MFEC PCL
7. ADVANCED CONTACT CENTER CO LTD
8. BROADCAST THAI TELEVISION CO LTD
9. LOXLEY WIRELESS CO LTD

Japan

1. NIPPON TELEGRAPH AND TELEPHONE CORPORATION
2. NTT DOCOMO INC
3. KDDI CORPORATION

4. NTT DATA CORPORATION
5. OTSUKA CORPORATION
6. HIKARI TSUSHIN INC
7. COMSYS HOLDINGS CORPORATION
8. YAHOO JAPAN CORPORATION
9. KONAMI CORPORATION
10. NEC NETWORKS & SYSTEM INTEGRATION CORPORATION
11. TRANSCOSMOS INC
12. FUJI SOFT INC.
13. SCSK CORPORATION
14. TREND MICRO INCORPORATED
15. COMMUTURE CORPORATION
16. SOFTBANK CORP
17. INTERNET INITIATIVE JAPAN INC
18. WONDER CORPORATION
19. GMO INTERNET INC.
20. TOHOKUSHINSHA FILM CORPORATION
21. DTS CORP.
22. VIC TOKAI CORPORATION
23. F T COMMUNICATIONS CO LTD
24. COMPUTER ENGINEERING & CONSULTING LTD
25. CAC CORPORATION
26. INFOCOM CORPORATION
27. PANASONIC ELECTRIC WORKS INFORMATION SYSTEMS CO., LTD.
28. RYOYU SYSTEMS CO., LTD.
29. AGREX INC
30. JFE SYSTEMS INC.
31. ALPHA SYSTEMS INC
32. NIPPON SYSTEMWARE CO LTD
33. FUTURE ARCHITECT, INC.
34. CORE CORPORATION
35. I-NET CORP
36. MIROKU JYOHO SERVICE CO LTD
37. CROPS CORPORATION
38. INFORMATION DEVELOPMENT CO LTD
39. COMPUTER INSTITUTE OF JAPAN LTD
40. CRESCO LTD
41. IX KNOWLEDGE INCORPORATED

42. FORVAL TELECOM INC

43. HOKURIKU DENWA KOUJI CO LTD

44. WILLCOM Inc.

45. COMTEC INC

46. UCHIDA ESCO CO LTD

47. NIPPON COMPUTER DYNAMICS CO, LTD.

48. TOUKEI COMPUTER CO LTD

49. ISB CORPORATION

50. SOLXYZ CO., LTD.

51. CUBE SYSTEM INC

52. GMO CLOUD K.K.

53. JAPAN SYSTEM TECHNIQUES CO LTD

54. ASAHI INTELLIGENCE SERVICE CO LTD

55. CDS CO., LTD.

56. CROSS CAT CO LTD

57. SYSTEM RESEARCH CO., LTD.

58. IMAGICA ROBOT HOLDINGS INC.

59. SIOS TECHNOLOGY, INC.

60. YUKE'S CO., LTD.

61. ND SOFTWARE CO., LTD.

62. HONYAKU CENTER INC

63. JORUDAN CO., LTD.

64. SHOWA SYSTEM ENGINEERING CORPORATION

65. GAIAX CO., LTD.

66. KYCOM HOLDINGS CO., LTD.

67. MEDIASEEK. INC

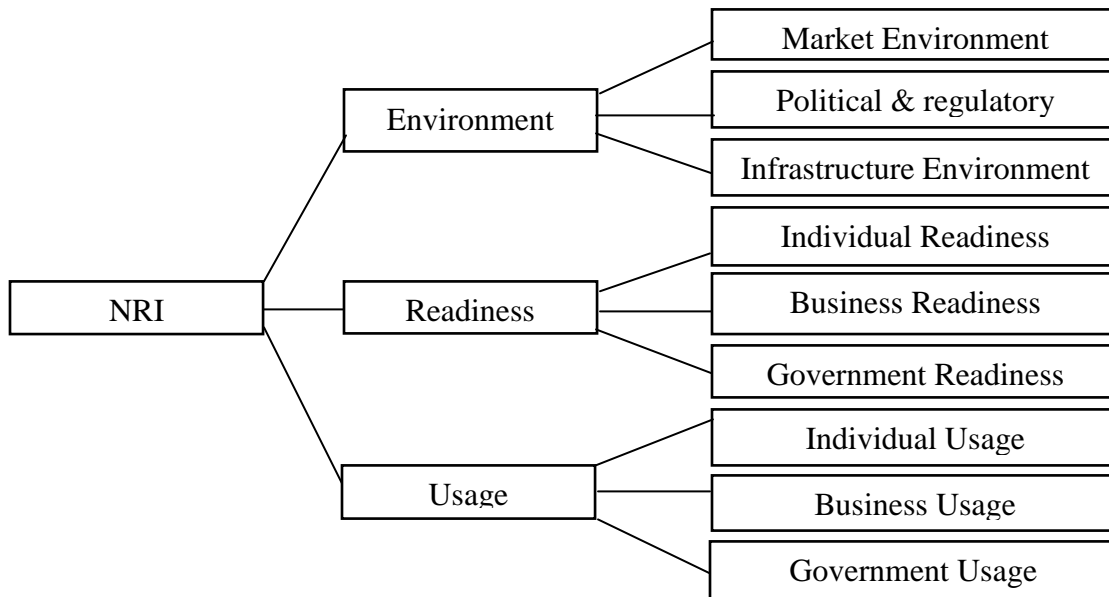68. DAIWA COMPUTER CO., LTD.

69. ASJ INC.

FIGURES

Figure 1: The Networked Readiness Index: The framework
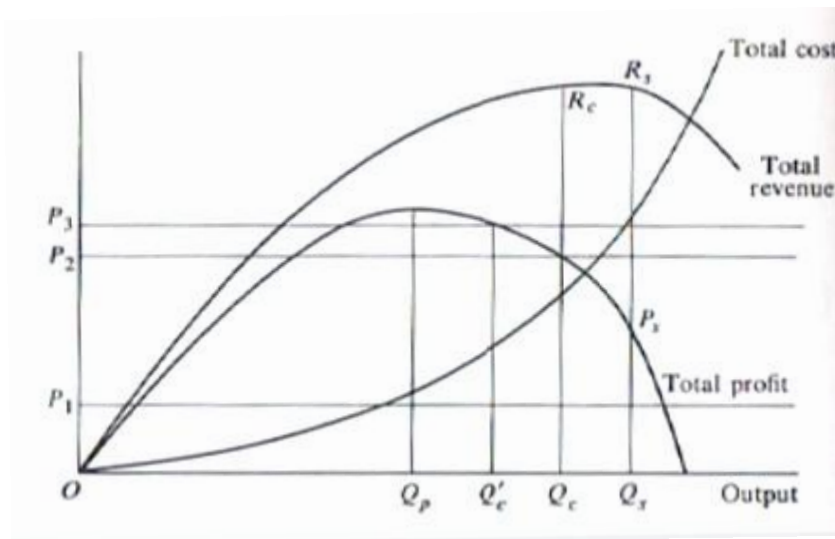
Source: World Economic Forum

Figure 2: Baumol's Sales-Maximization Model

Source: Baumol (1959). "Business Behaviour, Value and Growth."

Sandmeyer(1964). "Baumol's Sales-Maximization Model: Comment."
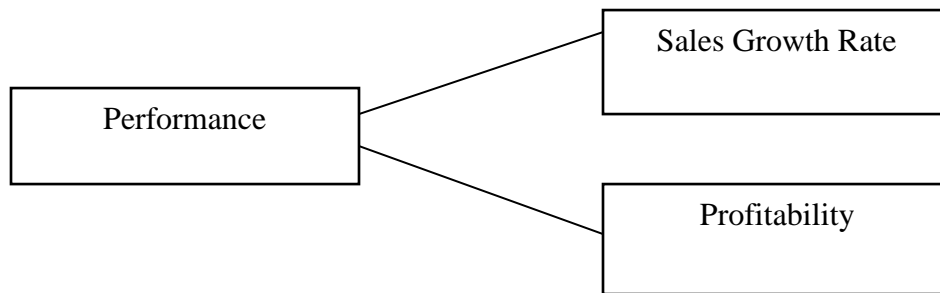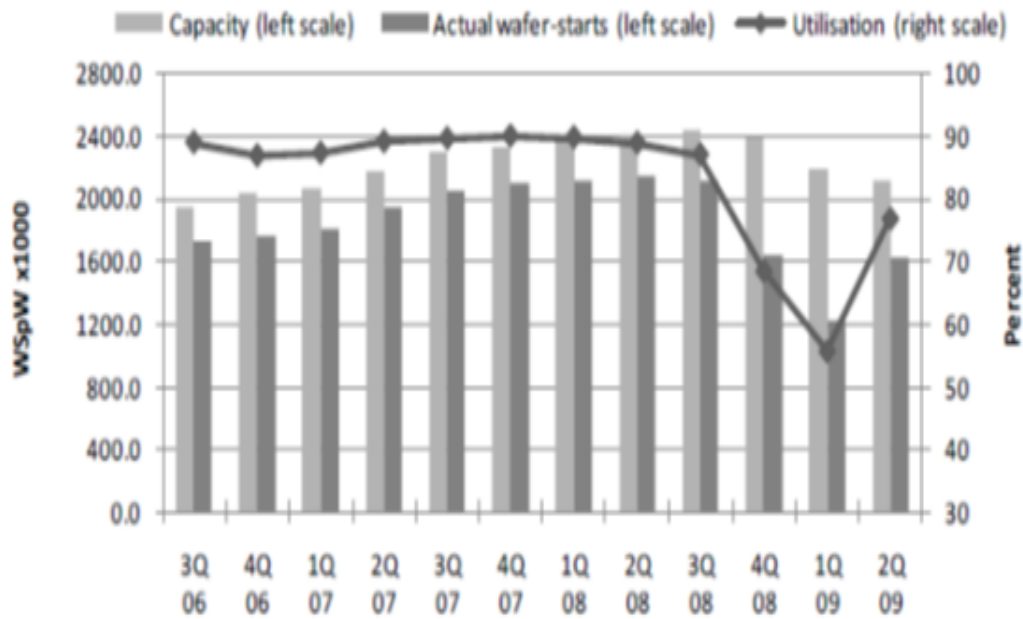
Figure 3: Conceptual Framework

Figure 4: Utilization Rate of Semiconductor Manufacturing Facilities

Source: Semiconductor Industry Association, August 2009

TABLES

	2006–2007		2007–2008		2008–2009	
Country	Rank	Score	Rank	Score	Rank	Score
Japan	14	5.27	19	5.14	17	5.19
Malaysia	26	4.74	26	4.82	28	4.76
Thailand	37	4.21	40	4.25	47	4.14
Philippines	68	3.55	81	3.56	85	3.6

	2009-2010		2010-2011		2012	
Country	Rank	Score	Rank	Score	Rank	Score
Japan	21	4.89	19	4.95	18	5.25
Malaysia	27	4.65	28	4.74	29	4.8
Thailand	47	3.97	59	3.89	77	3.78
Philippines	85	3.51	87	3.57	86	3.64

Table 1: The Networked Readiness Index rankings

Source: The Global Information Technology Report and summarize by the authors

	Sales Growth 2006-2010				Sales Growth 2007-2010			
Country	Mean	t	df	Sig. (2-tailed)	Mean	t	df	Sig. (2-tailed)
ASEAN	2.1886	-.673	370	.502	.3568	-.041	298	.968
Japan	3.4826	-.524	117.544	.601	.4422	-.030	93.407	.976

Table 2: Mean Output for Sales Growth Ratio

Country	ASEAN				JAPAN			
Variables	Mean	t	df	Sig. (2-tailed)	Mean	t	df	Sig. (2-tailed)
Return on shareholder funds	23.1333	12.975	119	.000	14.1885	10.368	344	.000
Return on capital employed	20.4832	14.409	119	.000	12.5767	18.213	344	.000
Return on total assets	13.0286	12.159	119	.000	8.1646	19.433	344	.000
Profit margin	15.0508	12.387	119	.000	7.0621	14.974	344	.000
Solvency ratio	56.6842	34.987	119	.000	53.7992	61.370	344	.000
Current ratio	2.2264	11.790	119	.000	2.0641	39.583	344	.000
Liquidity ratio	2.0719	11.157	119	.000	2.0854	13.022	344	.000

Table 3: Output for Profitability Ratio 2006-2010

Country	ASEAN				JAPAN			
Variables	Mean	t	df	Sig. (2-tailed)	Mean	t	df	Sig. (2-tailed)
Return on shareholder funds	22.1485	11.857	107	.000	13.7973	8.913	291	.000
Return on capital employed	19.6385	13.052	107	.000	11.7639	16.960	291	.000
Return on total assets	12.8829	11.070	107	.000	7.5946	18.074	291	.000
Profit margin	14.8428	11.220	107	.000	6.7088	14.380	291	.000
Solvency ratio	58.3866	33.922	107	.000	52.4167	51.203	291	.000
Current ratio	2.4170	10.838	107	.000	2.0277	36.378	291	.000
Liquidity ratio	2.2706	10.289	107	.000	2.0813	11.108	291	.000

Table 4: Output for Profitability Ratio 2007-2010

	2008–2009		2009-2010		2010-2011	
Country	Rank	Score	Rank	Score	Rank	Score
Japan	2	5.25	1	5.25	1	5.22
Malaysia	23	4.64	15	4.29	24	4.15
Thailand	44	3.97	46	3.78	46	3.78
Philippines	50	3.86	73	3.44	60	3.55

Table 5: Buyer sophistication rankings

Source: The Global Information Technology Report and summarize by the authors