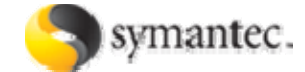


# **EIU's IT Competitiveness Index**

## **Overview and Purpose of Study**

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Business Software Alliance  
8 November 2007

# BSA Global Members



# BSA Asia Regional Members



# IT Industry Competitiveness

- IT is a compelling driving force
  - IT software, hardware and services
  - Core of every economic sector
- Stronger IT industry leads to
  - Greater contribution to GDP
  - Greater job creation
  - Higher living standards
  - Faster economic and social progress

# EIU IT Competitiveness Index

## *Why this index?*

- Important to understand IT industry foundation
  - What enables an economy to develop competitive IT firms?
  - What are the strengths and weaknesses in each economy?
  - Why do some economies have stronger IT firms than others?
  - How to prioritize steps to support healthy IT sector?
  - How to leverage factors that enable economies to bolster IT sector and participate in global networked economy?
- Comprehensive analysis by EIU
  - Independent, experienced and credible research team
  - Sophisticated model capturing the range of enabling elements

# Why did BSA sponsor study?

- BSA represents IT industry
  - Including international, regional and local IT companies
- Provide better and more information and research to governments and policy makers
  - Enable better policies and strategies to be developed
  - Ultimately benefiting industry
- Need for a more comprehensive study and wider perspective of all aspects of IT industry development

# How will the study be used?

## *Guide for Governments & Policy Makers*

- Study findings as Roadmap
  - Elements identified and evaluated for each economy
  - Compare and contrast with other economies
  - Develop strategy to enhance strengths and address weaknesses
- Improve on rankings
  - Capitalize and improve factors that strengthen IT innovation and competition, greater contribution to GDP and productivity
  - Make environment more conducive, e.g. better IPR protection, more comprehensive legislation in e-commerce, cyber crime, security, spam, privacy

# Competitive IT Industry

- Favorable environment is an indicator, not guarantee, of IT industry success
- High scoring countries
  - Cannot be complacent – others will catch up
- Rising competitors
  - Identify areas to improve and exploit to move up
  - Greater awareness of advantages that will erode
- Becoming more attractive for both local and international companies to invest and grow
  - Create a sustainable virtuous cycle

# **WHITEPAPER BY EIU**

**The means to compete:  
Benchmarking IT industry competitiveness**



## **The means to compete**

**Benchmarking IT industry  
competitiveness**

The Economist Intelligence  
Unit

# Background

## Project objective

*Assess and compare the IT industry environments of 64 countries, in order to determine the extent to which they enable IT sector competitiveness*

- Research conducted from November 2006 through April 2007
- Component 1 – building the “IT industry competitiveness index”
- Component 2 – conducting in-depth interviews with >20 executives and experts
- Sponsored by the Business Software Alliance
- All research and analysis conducted by the Economist Intelligence Unit

## What's new?

### The first global effort to benchmark industry environments for IT production – hardware, software and IT services

*Other cross-country research focuses on technology diffusion ...*

- *WEF, ITU, UN, EIU*

*... Or demand for IT*

- *Analyst firms*

✓ ***This study addresses: What factors enable IT industries to become competitive globally?***

***IT sector performance is important to economies:***

Directly:

- Significant contribution to GDP
- A major source of productivity growth

Indirectly:

- Assists technology diffusion throughout the economy

# The benchmarking model

## The model assesses 64 countries across all regions

- A weighted scoring model, with 25 indicators grouped in six categories
- A balance of quantitative and qualitative indicators
- Scores are on a 0-100 scale, with 100 being the highest score
- Weights are formulated by EIU, using correlation coefficients of each indicator against a measure of IT labour productivity

### *Indicator categories and weights*

Overall business environment	10%
IT infrastructure	20%
Human capital	20%
Legal environment	10%
R&D environment	25%
Support for IT industry development	15%

*Data sources include EIU, World Bank, WIPO, UNESCO, IDC, Pyramid Research, other*

# Labor Productivity

## Hardware and Software Output per Industry Employee

Rank	Country	Score
6	Taiwan	\$386,413
3	S Korea	\$310,393
11	Singapore	\$216,941
5	Australia	\$208,014
2	Japan	\$148,560
17	N Zealand	\$148,384
49	China	\$136,506
22	Hong Kong	\$39,629

Rank	Country	Score
46	India	\$39,033
36	Malaysia	\$27,114
47	Philippines	\$16,897
50	Sri Lanka	\$13,818
60	Pakistan	\$4,337
57	Indonesia	\$2,894
61	Vietnam	\$2,323
41	Thailand	\$1,882

# The benchmarking model

## The individual indicators

### *Overall business environment*

Foreign investment policy	15%
Private property protection	40%
Government regulation	25%
Freedom to compete	20%

### *IT infrastructure*

IT investment	20%
PC ownership	60%
Broadband penetration	10%
Internet security	10%

### *Human capital*

Enrolment in higher education	25%
Enrolment in science	05%
Employment in IT	10%
Quality of technology skills	60%

# The benchmarking model

## The individual indicators (cont'd)

### *R&D environment*

Public sector R&D	10%
Private sector R&D	10%
Patents	65%
Royalty and license fees	15%

### *Legal environment*

Intellectual property protection	35%
Enforcement of IP rights	35%
Electronic signature law	10%
Data privacy and spam law	10%
Cybercrime law	10%

### *Support for IT industry development*

Access to investment capital	25%
E-government strategy	30%
Public procurement of IT	10%
Government technology neutrality	35%

## The results – global

Of the index top 22, all but 4 are in the top tier in terms of IT sector performance

### The IT industry competitiveness index

Rank	Country	Score	Rank	Country	Score
1	US	77.4	12	Neth'lands	62.9
2	Japan	72.7	13	Finland	62.7
3	S Korea	67.2	14	Norway	59.7
4	UK	67.1	15	Ireland	58.6
5	Australia	66.5	16	Germany	58.2
6	Taiwan	65.8	17	N Zealand	57.5
7	Sweden	65.4	18	France	55.8
8	Denmark	64.9	19	Austria	55.3
9	Canada	64.6	20	Israel	54.5
10	Switz'land	63.5	21	Hong Kong	53.4
11	Singapore	63.1	22	Belgium	53.3

### IT labour productivity:

#### Total output per IT employee

1	Taiwan	12	Norway
2	S Korea	13	UK
3	Ireland	14	Belgium
4	Singapore	15	Germany
5	Australia	16	Israel
6	Switz'land	17	France
7	US	18	Austria
8	Japan	19	Brazil
9	N Zealand	20	Greece
10	China	21	Hong Kong
11	Denmark	22	India

## The key findings

### Most countries with strong competitiveness enablers also have strong IT sectors

✓ The US boasts the strongest environment in the world for IT firms



- Ranks in the top five in all index categories
- Combines scale and quality in all key areas that promote competitiveness

✓ Asia-Pacific nations are prominent in the top tier of leaders



- East Asia and Australia are strong performers in R&D – a heavily weighted index category
- Asia and Australia – as well as the US – do better than most in developing talent for the industry

✓ Few can compensate for major environmental weaknesses



- India and China are exceptions, but few can replicate their unique assets
- Their cost advantages will erode

## The key findings

### Government priorities: ensure the flow of talent; support competition and innovation – without stifling them

✓ Skills requirements are changing radically



- *The supply of skilled talent will tighten*
- *Only a few – US, Singapore, Australia – have begun to address new demands on training*

✓ Legal and business environments are key differentiators



- *Open competition among IT firms must be balanced with robust protection for IPR*
- *Few APAC nations match the US and western Europe in legal & business environment strength*

✓ Eager governments must strike the right balance



- *Wise policy – particularly in education, R&D, tech adoption – can help enable competitiveness*
- *But they must avoid picking winners*

# ASIA'S PERFORMANCE



# Overall Ranking

## EIU's IT Competitiveness Index

Overall Rank	AP Rank	Country	Score
2	1	Japan	72.7
3	2	South Korea	67.2
5	3	Australia	66.5
6	4	Taiwan	65.8
11	5	Singapore	63.1
17	6	New Zealand	57.5
21	7	Hong Kong	53.4
36	8	Malaysia	34.9
41	9	Thailand	31.9
46	10	India	29.1
47	11	Philippines	28.7
49	12	China	27.9
50	13	Sri Lanka	26.0
57	14	Indonesia	23.7
60	15	Pakistan	20.2
61	16	Vietnam	19.9

# Ranking across 6 categories in AP

Business Environment (10%)	IT Infrastructure (20%)	Human Capital (20%)	Legal Environment (10%)	R&D Environment (25%)	Support for IT Industry (15%)
Hong Kong (1)	Australia (4)	Singapore (2)	Australia (4)	Japan (1)	Singapore (3)
Australia (7)	South Korea (9)	Australia (4)	Singapore (16)	South Korea (2)	Australia (6)
New Zealand (8)	Hong Kong (11)	S Korea (5)	N Zealand (17)	Taiwan (3)	Hong Kong (12)
Singapore (9)	Singapore (12)	Taiwan (7)	Japan (18)	Australia (12)	N Zealand (13)
Taiwan (11)	Japan (17)	New Zealand (8)	Hong Kong (21)	Singapore (17)	Japan (18)
Japan (24)	Taiwan (18)	Japan (9)	Taiwan (32)	N Zealand (19)	Taiwan (19)
S Korea (25)	New Zealand (19)	India (35)	S Korea (35)	Hong Kong (26)	S Korea (20)
Thailand (31)	Malaysia (33)	Hong Kong (36)	Malaysia (43)	China (38)	Malaysia (28)
Malaysia (35)	China (46)	Thailand (38)	Philippines (44)	Malaysia (40)	Thailand (31)
Philippines (38)	Thailand (49)	China (42)	China (45)	India (49)	Sri Lanka (37)
India (47)	Philippines (55)	Malaysia (44)	India (48)	Indonesia (50)	Philippines (45)
Sri Lanka (48)	Vietnam (60)	Philippines (49)	Sri Lanka (49)	Thailand (51)	India (46)
Pakistan (51)	Sri Lanka (61)	Indonesia (52)	Pakistan (56)	Philippines (52)	China (53)
Indonesia (55)	India (62)	Sri Lanka (53)	Thailand (57)	Vietnam (53)	Indonesia (54)
Vietnam (56)	Pakistan (63)	Vietnam (61)	Vietnam (58)	Pakistan (60)	Vietnam (57)
China (59)	Indonesia (64)	Pakistan (63)	Indonesia (59)	Sri Lanka 64)	Pakistan (60)



# Overall (10%) Business Environment

- Policy on foreign capital (15%)
- Private rights guaranteed & protected (40%)
- Government regulation for new businesses (25%)
- Freedom to compete (20%)

Overall Rank	Category Rank	Country	Score
21	1	Hong Kong	100.0
5	7	Australia	92.0
17	8	New Zealand	92.0
11	9	Singapore	91.0
6	11	Taiwan	88.0
2	24	Japan	82.0
3	25	South Korea	80.0
41	31	Thailand	76.0
36	35	Malaysia	73.0
47	38	Philippines	68.0
46	47	India	60.0
50	48	Sri Lanka	60.0
60	51	Pakistan	59.0
57	55	Indonesia	51.0
61	56	Vietnam	48.0
49	59	China	47.0



# IT (20%) Infrastructure

- Market spending on IT (20%)
- Computers per 100 people (60%)
- Broadband per 100 people (10%)
- Secure Internet servers per 100 people (10%)

Overall Rank	Category Rank	Country	Score
5	4	Australia	75.9
3	9	South Korea	61.7
21	11	Hong Kong	59.1
11	12	Singapore	58.8
2	17	Japan	52.3
6	18	Taiwan	51.3
17	19	New Zealand	50.9
36	33	Malaysia	16.5
49	46	China	8.0
41	49	Thailand	6.4
47	55	Philippines	2.2
61	60	Vietnam	0.6
50	61	Sri Lanka	0.5
46	62	India	0.5
60	63	Pakistan	0.4
57	64	Indonesia	0.0



# Human Capital (20%)

- Students in higher education (25%)
- Enrolment in tertiary science (5%)
- Employment in technology sector (10%)
- Capacity to train with business skills (60%)

Overall Rank	Category Rank	Country	Score
11	2	Singapore	84.9
5	4	Australia	76.2
3	5	South Korea	74.8
6	7	Taiwan	73.4
17	8	New Zealand	69.5
2	9	Japan	67.4
46	35	India	49.6
21	36	Hong Kong	49.2
41	38	Thailand	47.7
49	42	China	44.7
36	44	Malaysia	43.7
47	49	Philippines	40.7
57	52	Indonesia	36.6
50	53	Sri Lanka	32.7
61	61	Vietnam	22.4
60	63	Pakistan	19.4



# Legal (10%) Environment

- Comprehensive IP legislation (35%)
- Enforcement of IPR (35%)
- E-signature legislation (10%)
- Privacy / Spam legislation (10%)
- Cybercrime legislation (10%)

Overall Rank	Category Rank	Country	Score
5	4	Australia	87.0
11	16	Singapore	80.5
17	17	New Zealand	79.5
2	18	Japan	79.0
21	21	Hong Kong	74.5
6	32	Taiwan	70.0
3	35	South Korea	66.0
36	43	Malaysia	53.0
47	44	Philippines	51.5
49	45	China	49.0
46	48	India	48.0
50	49	Sri Lanka	46.5
60	56	Pakistan	41.0
41	57	Thailand	39.5
61	58	Vietnam	39.5
57	59	Indonesia	39.0



# Research & Development (25%)

- Government expenditure on R&D (10%)
- Private sector expenditure on R&D (10%)
- Patents registered by resident each year (65%)
- Royalties and license fees received (15%)

Overall Rank	Category Rank	Country	Score
2	1	Japan	84.3
3	2	South Korea	56.6
6	3	Taiwan	54.8
5	12	Australia	21.1
11	17	Singapore	16.3
17	19	New Zealand	14.7
21	26	Hong Kong	6.3
49	38	China	2.2
36	40	Malaysia	1.8
46	49	India	0.7
57	50	Indonesia	0.6
41	51	Thailand	0.5
47	52	Philippines	0.4
61	53	Vietnam	0.4
60	60	Pakistan	0.2
50	64	Sri Lanka	0.0



# Support for IT Industry (15%)

- Access to mid-term finance (25%)
- Coherent e-government strategy (30%)
- Government spending (10%)
- Even-handed policy on sector development (35%)

Overall Rank	Category Rank	Country	Score
11	3	Singapore	87.5
5	6	Australia	86.2
21	12	Hong Kong	84.3
17	13	New Zealand	84.0
2	18	Japan	77.1
6	19	Taiwan	75.9
3	20	South Korea	74.3
36	28	Malaysia	65.5
41	31	Thailand	62.6
50	37	Sri Lanka	58.0
47	45	Philippines	54.0
46	46	India	54.0
49	53	China	48.1
57	54	Indonesia	48.0
61	57	Vietnam	43.0
60	60	Pakistan	41.0

# LOOKING AHEAD

# Future of Asia Pacific

- Asian companies can become formidable international force
- Must lead in innovation, and not mere followers or adopters of technology
- Need IP protection to have incentive for people to devote time, effort, resources to innovate
- Technology standards offer the opportunities

# Creating the Right Environment

- *Legal and Policy*
  - Market competitiveness
  - Voluntary processes
  - Technology neutrality
  - Principles of Software Innovation
  - Encourage standards development and adoption

# Principles of Software Innovation

- Governments should select software on its merits, not simply the model of its development
- Ensure that government funded research is available to all
- Promote neutral standards
- Maintain strong intellectual property protection consistent with the principles of neutrality

*Full text available at <http://www.bsa.org/asia-eng/policy>*

# Standards & Open Source

- Open source software clearly distinguished from open standards
- Open standards can be implemented by both proprietary and open source software
- Availability of source code does not make an open standard
- Marketplace best evidence of successful standards adoption

# Patents and Innovation

- Improvements needed in present system
- Critical for company start-ups
- Facilitate development and adoption of standards
- Encourage innovators to contribute leading edge technology
- Protection requires full disclosure, enabling further innovation

# Open Standards & Government

- Government plays important role in advancing open standards
  - Avoid policies that discourage standards development
  - Mandating standards results in
    - Freezing innovation
    - Diminishing incentives
    - Deprive consumers of new features
  - Industry encouraged to voluntarily contribute best technology
  - Dynamic market-led solutions respond to consumer needs

# Achieving the Right Balance

- Having the right policy essential for creating conducive environment
- Market driven activities more effective in keeping in step with pace of change in high tech industry
- Partnership between public, private, research, academia essential

# THANK YOU

*Questions? Comments? Clarifications?*

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