

iMDE: international Market-Driven Engineering

Lecture 6: Innovation Climate



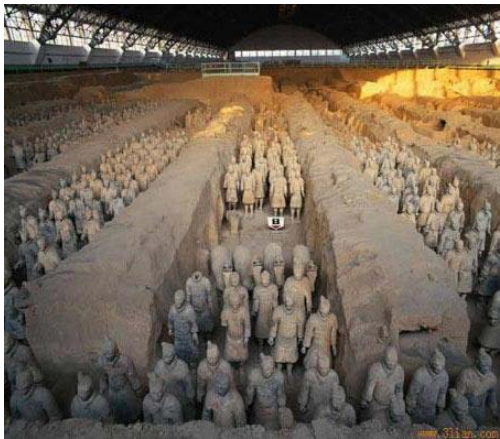
ZHEJIANG UNIVERSITY



LUND UNIVERSITY

Image of China

- **What do you know about China?**
 - **What represent China?**



How many Chinese cities do you know?



Do you know these Chinese Businessmen?



Chinese new innovation policies

- In early 2006, China's new medium and long term S&T plan (2006-2020)
- Objective: making China an innovation-based country in 2020
 - Increasing R&D spending to 2.5 percent of GDP
 - Increasing the contribution of S&T to the economic growth
 - Reducing over-dependency on foreign technology
 - Stepping up the output of publications and patents in major fields
- Approach: promoting indigenous innovation;
 - Acquisition, assimilation, and innovation;
 - Integrative innovation
 - Original innovation

Priority Areas

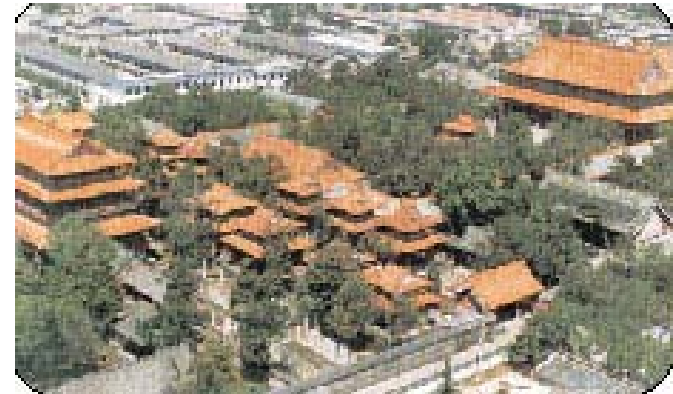
- Applied research based on the societal needs:
 - Energy, water resources, environmental protection, health, agriculture, manufacturing, service, and etc ;
- Mega Projects:
 - Semiconductor manufacturing, broadband wireless mobile communication, nuclear power water pollution treatment, power, AIDS and Hepatitis, aircraft manufacturing, space exploration and etc.
- Frontier Technologies:
 - Bio-tech, IT, new materials, new energy, space...
- Important basic research
 - In broad areas and interdisciplinary areas.

Some issues:

Chinese philosophy and culture

Confucianism

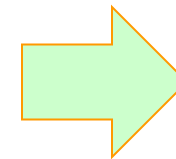
- The core of traditional culture
- Emphasize: regulation, moral, and personality
- People-oriented
- Influence over the history, social structure and the people of China and Asia
- The role of Confucius: especially on education
 - Impact on the Chinese intellect
 - e.g. Studying without thinking leads to confusion; thinking without studying leads to laziness



Temple of Confucius

Laos: Tao Te Ching

- Work: Tao Te Ching
- About the nature rules, and methodologies to do things
- Some theories:
 - **Wu Wei: non action**
 - Without intention, It manifests all things
 - The tangible is manifested from the intangible



**Religion:
Taoism**

Laos: Taoism

- About 2000 years
- Emphasize the link between human and nature
- Peaceful



Ancient Architectural Complex in Wudangshan Mountain

Yin and Yang

- Moon and Sun
- Female and male
- Dark and bright
- Food



→ **Harmony, balance**

→ Usage example: mostly, danger is not on the opposite of safety, it hides in the safety *who drowned?*

New Development Strategies in China

**Niche Market
Disruptive**

- Rural area → urban → rural
 - The household contract responsibility system in rural area 1978
 - 1984 to Cities, individual
 - Modern agriculture
- Eastern → western & North-eastern
- MNCs new strategies in China: moving to the 2nd and 3rd tiers of cities

From follower to leader

- Why this happens in China?

- Alibaba



- Huawei



- High speed train

- Electrical vehicle

CHINA

Innovation is a strategic priority for Chinese businesses (94% of Chinese respondents report innovation is a strategic priority for their business, 3 points higher than the Global average).

Additionally 60% of Chinese respondents mention the development of new business model as promising way to boost future performance, this is 8 points higher than the Global average (52%) on this item

Finally the interest from Chinese respondents in the development of new business models is confirmed by the fact that this ability is regarded as crucial by 50% of Chinese respondents vs. 45% of the Global sample

On the negative side, the items connected to **Universities** are more negatively evaluated than the Global average and most of all in **noticeable decline** when compared to last year results in China. This regards both the ability to partner with Universities for R&D purpose and the trust from business executives that Chinese universities are efficiently preparing the next generation of Innovative leaders. **Government support**, although still much higher than the **Global average** has **declined** when compared to last year.

On the more positive side, Chinese business executives report **higher satisfaction** than the **Global average** regarding a belief that **Society as a whole** is **supportive of innovation** and that there is an **appetite for innovation** among young generations. Also there is higher satisfaction with the belief that **Private investors** are **supportive of companies** that need funding to innovate and **Public-private partnerships** have proved effective in supporting innovation.

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SWEDEN

Innovation is a strategic priority for Swedish businesses (80% of Swedish respondents report innovation is a strategic priority for their business).

Additionally 49% of Swedish respondents mention the development of new business model as promising way to boost future performance, this is in line with the global average (52%).

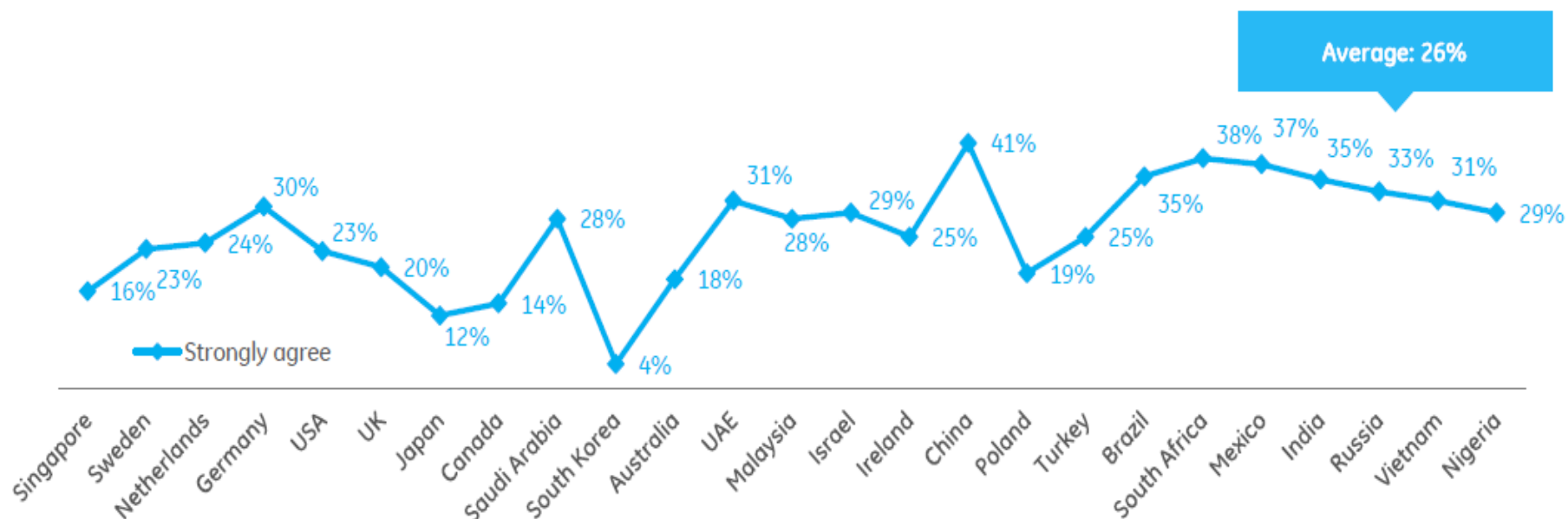
Finally the interest from Swedish respondents in the development of new business models is not a strong priority as only 28% of Swedish respondents regard it as an important ability to successfully innovate vs. 45% of the global sample.

On the negative side, the items connected to government support are more negatively evaluated than the global average and there is a negative evolution of government support perception when comparing Swedish results from this year to last year. There is also a more negative evaluation than the global average of trade regulations preventing firms from being commercially successful.

On the more positive side, Swedish business executives report higher satisfaction than the global average regarding the belief that society as a whole is supportive of innovation, there is an appetite for innovation among young generations as well as a belief that it is quite easy for companies to partner with universities for their R&D needs.

Collaboration is accelerating in emerging economies

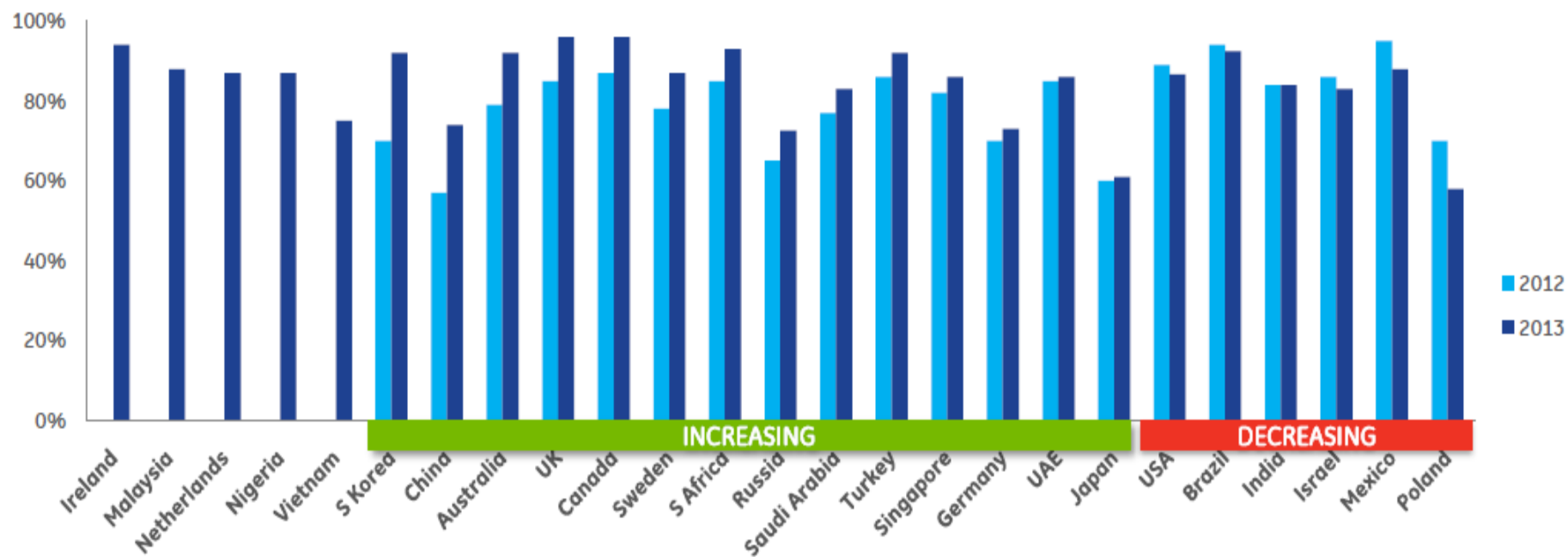
Revenue from collaborative innovation growing



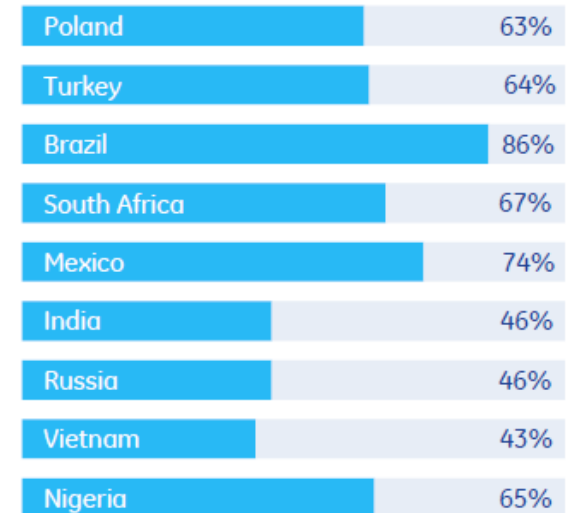
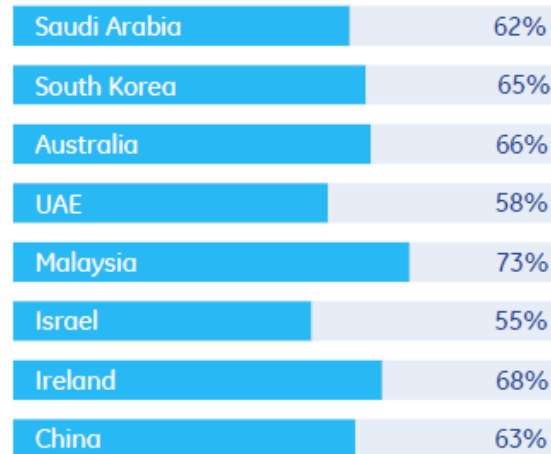
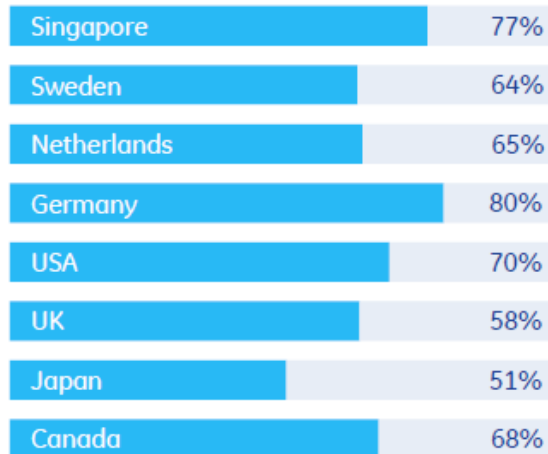
Confidence increasing that innovation can originate from companies of any size

Average 20 markets 2012: 79%

Average 20 markets 2013: 84% (+5pts)



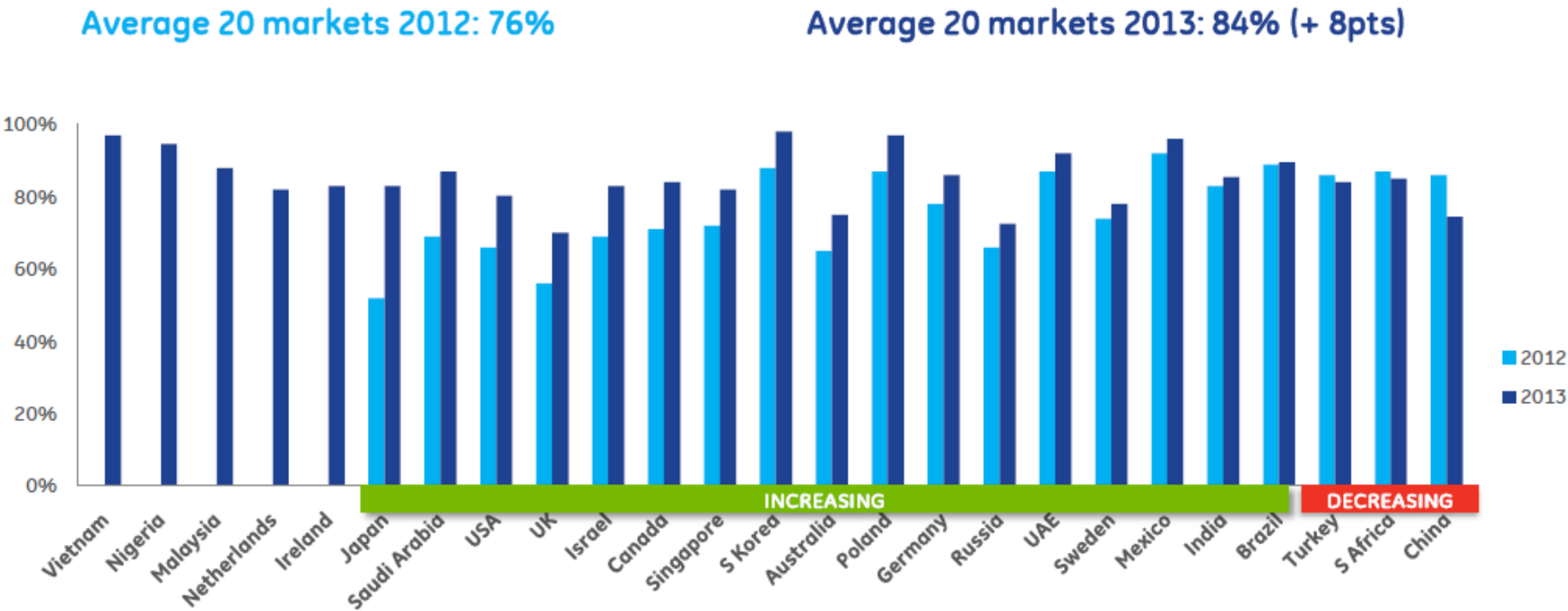
Largest concern – IP protection – across markets



* Lack of Protection of confidentiality / IP

Q16 Still on collaboration, what are the main reasons why your company would be reluctant to collaborate with entrepreneurs or other companies? (% of respondent that selected the item as a barrier)

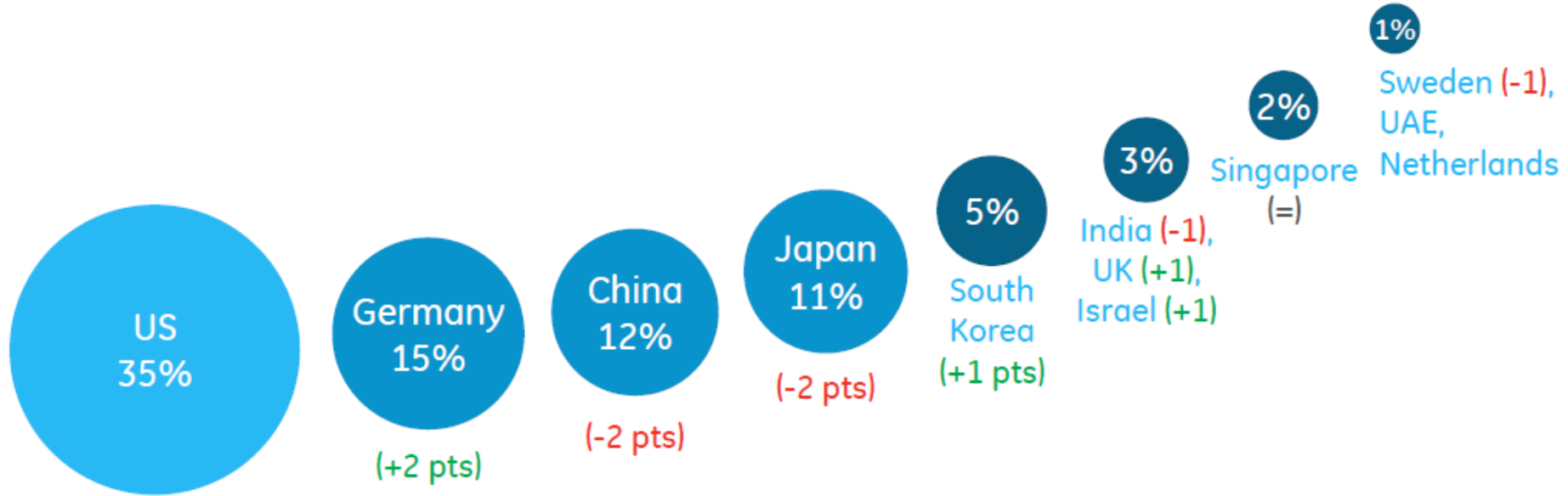
Localization becoming even more important to be successful













Innovation Champions

US and Germany continue to lead. China moves ahead of Japan











(#) – % Change from 2011



Q7. What is THE country that you consider to be the leading innovation champion?










Rank ▲	Company	Country	Sales	Profits	Assets	Market Value
1	 Exxon Mobil	United States	\$433.5 B	\$41.1 B	\$331.1 B	\$407.4 B
2	 JPMorgan Chase	United States	\$110.8 B	\$19 B	\$2,265.8 B	\$170.1 B
3	 General Electric	United States	\$147.3 B	\$14.2 B	\$717.2 B	\$213.7 B
4	 Royal Dutch Shell	Netherlands	\$470.2 B	\$30.9 B	\$340.5 B	\$227.6 B
5	 ICBC	China	\$82.6 B	\$25.1 B	\$2,039.1 B	\$237.4 B
6	 HSBC Holdings	United Kingdom	\$102 B	\$16.2 B	\$2,550 B	\$164.3 B
7	 PetroChina	China	\$310.1 B	\$20.6 B	\$304.7 B	\$294.7 B
8	 Berkshire Hathaway	United States	\$143.7 B	\$10.3 B	\$392.6 B	\$202.2 B
9	 Wells Fargo	United States	\$87.6 B	\$15.9 B	\$1,313.9 B	\$178.7 B
10	 Petrobras-Petróleo Brasil	Brazil	\$145.9 B	\$20.1 B	\$319.4 B	\$180 B

Rank	Company	Country	Sales	Profits	Assets	Market Value
1	 ICBC	China	\$134.8 B	\$37.8 B	\$2,813.5 B	\$237.3 B
2	 China Construction Bank	China	\$113.1 B	\$30.6 B	\$2,241 B	\$202 B
3	 JPMorgan Chase	United States	\$108.2 B	\$21.3 B	\$2,359.1 B	\$191.4 B
4	 General Electric	United States	\$147.4 B	\$13.6 B	\$685.3 B	\$243.7 B
5	 Exxon Mobil	United States	\$420.7 B	\$44.9 B	\$333.8 B	\$400.4 B
6	 HSBC Holdings	United Kingdom	\$104.9 B	\$14.3 B	\$2,684.1 B	\$201.3 B
7	 Royal Dutch Shell	Netherlands	\$467.2 B	\$26.6 B	\$360.3 B	\$213.1 B
8	 Agricultural Bank of China	China	\$103 B	\$23 B	\$2,124.2 B	\$150.8 B
9	 PetroChina	China	\$308.9 B	\$18.3 B	\$347.8 B	\$261.2 B
9	 Berkshire Hathaway	United States	\$162.5 B	\$14.8 B	\$427.5 B	\$252.8 B

Rank ▲	Company	Country	Sales	Profits	Assets	Market Value
5	 ICBC	China	\$82.6 B	\$25.1 B	\$2,039.1 B	\$237.4 B
7	 PetroChina	China	\$310.1 B	\$20.6 B	\$304.7 B	\$294.7 B
13	 China Construction Bank	China	\$68.7 B	\$20.5 B	\$1,637.8 B	\$201.9 B
19	 Agricultural Bank of China	China	\$62.4 B	\$14.4 B	\$1,563.9 B	\$154.8 B
21	 Bank of China	China	\$60.8 B	\$15.8 B	\$1,583.7 B	\$129.1 B
24	 Sinopec-China Petroleum	China	\$391.4 B	\$11.6 B	\$179.8 B	\$104.2 B
65	 China Life Insurance	China	\$56 B	\$5.1 B	\$214.1 B	\$76.5 B
100	 Ping An Insurance Group	China	\$42.2 B	\$3 B	\$362.8 B	\$55 B
108	 Bank of Communications	China	\$24.9 B	\$5.9 B	\$598.5 B	\$48.8 B
126	 China Shenhua Energy	China	\$33.1 B	\$7.3 B	\$63.6 B	\$84.2 B

Rank	Company		Country	Sales	Profits	Assets	Market Value
1		<u>ICBC</u>	China	\$134.8 B	\$37.8 B	\$2,813.5 B	\$237.3 B
2		<u>China Construction Bank</u>	China	\$113.1 B	\$30.6 B	\$2,241 B	\$202 B
8		<u>Agricultural Bank of China</u>	China	\$103 B	\$23 B	\$2,124.2 B	\$150.8 B
9		<u>PetroChina</u>	China	\$308.9 B	\$18.3 B	\$347.8 B	\$261.2 B
11		<u>Bank of China</u>	China	\$98.1 B	\$22.1 B	\$2,033.8 B	\$131.7 B
26		<u>Sinopec-China Petroleum</u>	China	\$411.7 B	\$10.1 B	\$200 B	\$106.9 B
54		<u>Bank of Communications</u>	China	\$43.5 B	\$9.4 B	\$846.4 B	\$56.7 B
83		<u>Ping An Insurance Group</u>	China	\$51.1 B	\$3.2 B	\$456.2 B	\$57 B
101		<u>China Merchants Bank</u>	China	\$28.4 B	\$7.3 B	\$547 B	\$44.1 B
106		<u>China Life Insurance</u>	China	\$63.2 B	\$1.8 B	\$304.6 B	\$79.9 B

Technology Management

Rank ▲	Company	Country	Sales	Profits	Assets	Market Value
135	 Nordea Bank	Sweden	\$21.7 B	\$3.4 B	\$933.3 B	\$39.7 B
183	 Volvo Group	Sweden	\$45 B	\$2.6 B	\$49.7 B	\$31.5 B
239	 Ericsson	Sweden	\$32.9 B	\$1.8 B	\$39 B	\$32.4 B
280	 SEB	Sweden	\$13.5 B	\$1.6 B	\$344.5 B	\$16.5 B
282	 Svenska Handelsbanken	Sweden	\$10.9 B	\$1.8 B	\$358 B	\$20.9 B
294	 TeliaSonera	Sweden	\$15.1 B	\$2.7 B	\$35.9 B	\$29.9 B
311	 Swedbank	Sweden	\$10.3 B	\$1.7 B	\$270.8 B	\$19.5 B
489	 H&M	Sweden	\$16.3 B	\$2.3 B	\$8.7 B	\$61.6 B
528	 Atlas Copco	Sweden	\$11.8 B	\$1.9 B	\$10.8 B	\$31.4 B
578	 Sandvik	Sweden	\$13.6 B	\$0.8 B	\$14.4 B	\$19 B

Rank	Company		Country	Sales	Profits	Assets	Market Value
118		Nordea Bank	Sweden	\$23.2 B	\$4.2 B	\$892.6 B	\$47.1 B
210		Volvo Group	Sweden	\$46.7 B	\$1.7 B	\$50.4 B	\$31.9 B
243		SEB	Sweden	\$14.4 B	\$1.8 B	\$376.8 B	\$23.5 B
247		Svenska Handelsbanken	Sweden	\$11.5 B	\$2.2 B	\$367 B	\$28.2 B
265		Swedbank	Sweden	\$10.9 B	\$2.2 B	\$283.8 B	\$27.4 B
286		TeliaSonera	Sweden	\$16.1 B	\$3.1 B	\$38.1 B	\$31 B
292		Ericsson	Sweden	\$35 B	\$0.9 B	\$40.4 B	\$44.1 B
481		Atlas Copco	Sweden	\$13.4 B	\$2.1 B	\$12.5 B	\$35.2 B
486		H&M	Sweden	\$18.1 B	\$2.5 B	\$8.8 B	\$59.8 B
505		Sandvik	Sweden	\$15.2 B	\$1.2 B	\$16 B	\$20.5 B

Global rank 2013	Global rank 2012	Company	Country	Sector	Market value \$m	Turnover \$m
1	1	Apple	US	415,683.3	Technology hardware & equipment	156,508.0
2	2	Exxon Mobil	US	403,733.1	Oil & gas producers	420,714.0
3	13	Berkshire Hat	US	256,801.8	Nonlife insurance	
4	3	PetroChina	China	254,618.7	Oil & gas producers	352,367.0
5	11	Wal-Mart Stor	US	246,373.3	General retailers	469,162.0
6	9	General Elect	US	239,775.6	General industrials	144,796.0
7	4	Microsoft	US	239,602.3	Software & computer services	73,723.0
8	5	IBM	US	237,724.7	Software & computer services	104,507.0
9	12	Nestle	Switzerland	233,792.1	Food producers	100,639.5
10	10	Chevron	US	230,831.2	Oil & gas producers	222,629.0
11	6	Industrial & C	China	230,420.5	Banks	
12	18	Johnson & Jo	US	228,042.3	Pharmaceuticals & biotechnology	67,224.0
13	17	Samsung Ele	South Korea	217,725.3	Leisure goods	189,037.4
14	8	China Mobile	Hong Kong	212,847.6	Mobile telecommunications	89,000.7
15	25	Google	US	212,445.3	Software & computer services	50,175.0
16	16	Procter & Gar	US	210,500.9	Household goods & home construction	83,680.0
17	7	Royal Dutch S	UK	208,999.7	Oil & gas producers	476,914.9
18	23	Pfizer	US	207,377.4	Pharmaceuticals & biotechnology	58,986.0
19	14	China Constr	China	203,395.9	Banks	
20	29	Roche	Switzerland	201,514.7	Pharmaceuticals & biotechnology	49,671.3
21	15	AT&T	US	201,486.9	Fixed line telecommunications	127,434.0
22	26	HSBC	UK	198,028.3	Banks	
23	19	Wells Fargo	US	195,079.6	Banks	
24	28	Novartis	Switzerland	192,764.2	Pharmaceuticals & biotechnology	57,711.6
25	21	JP Morgan Ch	US	181,651.4	Banks	
26	24	Coca-Cola	US	180,229.5	Beverages	48,017.0
27	30	Toyota Motor	Japan	176,947.2	Automobiles & parts	224,490.5
28	20	BHP Billiton	Australia/UK	171,105.5	Mining	71,772.7
29	40	Anheuser-Bus	Belgium	159,395.8	Beverages	40,637.6
30	32	Oracle	US	152,295.5	Software & computer services	37,121.0
31	27	Philip Morris I	US	152,247.6	Tobacco	31,377.0
32	46	Verizon Comr	US	142,534.9	Fixed line telecommunications	115,846.0
33	35	Agricultural B	China	142,491.3	Banks	