

8th World Islamic Economic Forum  
Delegate's brief and discussion agenda



# Changing trends, new opportunities


4-6 December 2012

Global Knowledge Partner



Organiser





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“ Losers will be those that hold on to the status quo and allow sweeping change to overwhelm them. Winners will be those that 'join the dance' by embracing change and adapting to a new environment. ”

Bob Moritz  
Chairman and Senior Partner of  
PricewaterhouseCoopers LLP.  
PwC, View Issue 14 (Jul 2011)

## Foreword

We see the theme “Changing trends, new opportunities” as very relevant in today's landscape because it marks an exciting chapter of change and transformation in our global economy. One where opportunities abound for leaders to take bold steps that will redefine how their organisations (and countries) move on from here.

We know that change can be difficult. It presents a measure of uncertainty that requires strong leadership in the face of changing trends - the arrival of Asia, increasing business complexity, new models of innovation and socio-economic imbalances.

So it's up to leaders to make the right decisions, and capitalise on existing strengths and substantial advantages, to improve competitiveness and optimise growth. Strategies for the future don't have to be complicated, however. Basics like strong leadership, people engagement, and financial discipline are fail-safe success factors. With a possible talent crunch in many sectors, leaders should also focus on winning the talent war. And, at the end of the day, the best strategy is meaningless unless there is proper execution.

While there is a measure of risk in pursuing new approaches and ideas, the risks of doing nothing are far greater.

We hope this Briefing Pack, which includes charts and articles discussing the sessions' key points, gives you a fresh perspective and facilitates enriching discussions at the Forum.

**Mohammad Faiz Azmi**

Executive Chairman

PricewaterhouseCoopers Malaysia

December 2012





## Foreword

It is my utmost pleasure in welcoming you to Johor Bahru for the 8th WIEF 2012, a slight departure from our propensity of hosting Forums in major capitals of the world. Why Johor one would ask, but my reply would be, why not? Johor is the centre of a lot of attention lately, especially in the Southeast Asian region. This is because it houses one of the most rapidly developing economic zones, the Iskandar Malaysia, hosting 5 flagship zones to develop the southernmost areas of the Johor state.

But more than just an economic zone, the state of Johor is also a centre of culture and occupies a colourful chapter in the history of Southeast Asia. Being a successor to the great maritime empire of Malacca, the Sultanate of Johor traversed through rough patches of history as the bastion of Malay culture and identity, and serves as an important crossroad to trade in the Asian region.

With the theme “Changing trends, new opportunities”, the WIEF Foundation, through this year’s 8th WIEF, would like to showcase the diverse opportunities abound in this region, especially in the wake of the recent Eurozone crisis where global capital has seen a bigger movement towards the East. China and India is still in the news despite their economic slowdowns, but Southeast Asia still has a pivotal role to play in the global

supply chain and is therefore poised to attract a sizeable portion of global capital going eastbound.

The 8th WIEF 2012 in Johor Bahru would serve to fulfil that purpose, of bringing together businesspeople from all around the world, to explore the amazing opportunities in store in Johor Bahru and to open a networking space for business communities from Africa, Asia, the Middle East, North America, Latin America and Europe to interact and forge new business collaborations.

May we build a better world through business partnerships!

**Tun Musa Hitam**  
Chairman  
WIEF Foundation  
December 2012





# Programme

Tuesday, 4 December 2012

## Day 1

| MAIN FORUM         |  |
|--------------------|--|
| 07.00am - 09.30am  | REGISTRATION   |
| 09.30am - 12.00nn  | OPENING CEREMONY   |
| 12.00nn - 01.45 pm | NETWORKING LUNCH   |
| 01.45pm - 03.15pm  | GLOBAL ECONOMIC OUTLOOK - WORLD IN FLUX: LEADERSHIP IN CHANGING TIMES<br>How can leadership deal with the new realities of the changing world? |
| 03.15pm - 03.35pm  | BREAK  |
| 03.35pm - 05.00pm  | HARNESSING THE WAQF FUND FOR THE MUSLIM UMMAH<br>How can Waqf funds be used for capacity building?   |
| 08.00pm - 10.15pm  | GALA DINNER  |

Note:

The 8th WIEF Exhibition will be opened from 08.30am to 06.00pm daily.

The 5th Marketplace of Creative Arts will be opened from 12.00nn to 11.00pm on Day 2 and Day 3.

Wednesday, 5 December 2012

## Day 2

| WIEF YOUNG LEADERS FORUM (WYN)         |  |
|--|--|
| 08.00am - 09.00am                      | CORPORATE NETWORKING BREAKFAST (by invitation only)  |
| 09.00am - 09.15am                      | WELCOMING REMARKS  |
| 09.15am - 10.15am                      | BUSINESS START-UP MASTERCLASS: MANAGING FINANCE AND RISKS<br>Starting up a business comes with a price. How much does one have to pay?   |
| 10.15am - 11.15am                      | iGOVT: DEVELOPING A NEW GENERATION OF TECHNOCRATS<br>Leadership succession is taking place in governments and civil societies across the globe. How can the new breed bring about changes?         |
| 11.15am - 12.15pm                      | WYN DIALOGUE SERIES: ARE POLICIES IN THE MUSLIM WORLD HINDERING THE SPIRIT OF ENTREPRENEURSHIP?<br>Policies either create people or break them. Are we creating entrepreneurs?                     |
| 12.15pm - 01.00pm                      | CROWDSOURCING 101: GROWING IDEAS FOR CHANGE “ARE YOU READY FOR US? NURTURING SOCIAL ENTREPRENEURSHIP IN YOUTH”<br>It takes one person to come up with an idea. It takes a community to perfect it. |
| 01.00pm - 02.30pm                      | LUNCH & SPECIAL ADDRESS ON “THE CHANGING DYNAMICS FOR ISLAMIC BANKING AND FINANCE IN THE NEW GLOBAL ECONOMY”   |
| MAIN FORUM - THEMATIC PARALLEL SESSION |  |
| 02.30pm - 04.00pm                      | THE BUSINESS OF NANOTECH: SIZING UP OPPORTUNITIES<br>How do we enlarge a business that makes things smaller?   |
| 04.00pm - 04.15pm                      | BREAK  |
| 04.15pm - 05.45pm                      | SHAPING TOMORROW: CREATING LEADERS OF THE FUTURE<br>The hard vs. soft infrastructure debate - where are possible investment areas in education to create great leaders?                            |



Wednesday, 5 December 2012

## Day 2

### WIEF BUSINESSWOMEN FORUM

|                      |   |
|----------------------|---|
| 08.00am -<br>09.00am | CORPORATE NETWORKING BREAKFAST (by invitation only)   |
| 09.00am -<br>09.15am | WELCOMING REMARKS   |
| 09.15am -<br>10.15am | CEO PANEL: WOMEN ENTREPRENEURS: CATALYST FOR CHANGE<br><i>The profound structural changes taking place in most economies have provided new opportunities for women.</i>   |
| 10.15am -<br>11.15am | BUSINESS INNOVATION: CHASING SUCCESS ON A SHOESTRING<br><i>Growing a small business on a shoe string budget can be a challenge for many women business owners. Not every innovation has to be connected to investing a large amount of money in it.</i>   |
| 11.15am -<br>12.15pm | WOMEN IN TECHNOLOGY: FOSTERING INTEREST AND OVERCOMING OBSTACLES<br><i>Technology has been heralded as a critical learning tool and as a potential source of equity and increased participation for certain groups and individuals that have not had equal access to learning and economic opportunities.</i> |
| 12.15pm -<br>01.00pm | FACE-TO-FACE DIALOGUE: PROMOTING SOCIAL ENTREPRENEURSHIP: CHALLENGES AND OPPORTUNITIES<br><i>An intimate face-to-face dialogue with a leading woman personality.</i>  |
| 01.00pm -<br>02.30pm | LUNCH & SPECIAL ADDRESS ON "THE CHANGING DYNAMICS FOR ISLAMIC BANKING AND FINANCE IN THE NEW GLOBAL ECONOMY"  |

### MAIN FORUM - THEMATIC PARALLEL SESSION

|                      |   |
|----------------------|---|
| 02.30pm -<br>04.00pm | DISASTER MITIGATION AND MANAGEMENT: ROLE OF THE PRIVATE SECTOR<br><i>What can be an effective framework for the private sector to contribute towards disaster management?</i> |
| 04.00pm -<br>04.15pm | BREAK   |
| 04.15pm -<br>05.45pm | LIVING SUSTAINABLY: WALKING THE GREENER SIDE OF BUSINESS<br><i>How can core industries institutionalise sustainability?</i>   |

Thursday, 6 December 2012

## Day 3

### MAIN FORUM

|                      |   |
|----------------------|---|
| 08.00am -<br>09.30am | BUSINESS NETWORKING BREAKFAST<br><i>This session encourages greater business networking opportunities for participants, allowing like-minded individuals to get to know each other and discuss relevant issues pertaining to their respective industry.</i> |
| 09.30am -<br>11.00am | BANKING ON ISLAMIC FINANCE: LEGALITY TO ECONOMIC VALUE<br><i>Can Islamic finance break into mainstream through investing in its economic value?</i>   |
| 11.00am -<br>01.00pm | INVESTMENT OPPORTUNITIES IN JOHOR   |
| 01.00pm -<br>02.30pm | LUNCH & SPECIAL ADDRESS   |
| 02.30pm -<br>04.00pm | GLOBAL CEO PANEL: THE RISE OF PRUDENT ECONOMICS: RETHINKING GROWTH ON A SHOESTRING<br><i>How can businesses function in bearish conditions? How do they keep afloat and marshal through?</i>  |
| 04.00pm -<br>05.00pm | FACE-TO-FACE<br><i>An intimate face-to-face dialogue with a global leader.</i>  |
| 05.00pm -<br>05.30pm | CONCLUDING SESSION  |





# Contents

This briefing pack was prepared by PricewaterhouseCoopers Malaysia for participants of the 8th World Islamic Economic Forum 2012. The pack comprises charts and short articles for the programme's main themes. It's also available online from [www.wief.org](http://www.wief.org)

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*Contributed by Tan Sri Dr Jemilah Mahmood,  
Senior Research Fellow, Humanitarian Futures Programme, King's College London*

Content guide

Links between this briefing pack’s contents to the Forum’s sessions

|   | CT | NO | IM | A1 | A2 | A3 | A4 |
|---|----|----|----|----|----|----|----|
| <b>Main Forum (Plenary sessions)</b>  |    |    |    |    |    |    |    |
| • Global economic outlook - World in flux: Leadership in changing times   | •  | •  |    |    |    |    | •  |
| • Harnessing the Waqf fund for the Muslim ummah   |    |    |    |    | •  |    |    |
| • Banking on Islamic finance: From legality to economic value   |    |    |    |    | •  |    |    |
| • Investment opportunities in Johor   | •  | •  | •  |    |    |    |    |
| • The rise of prudent economics: Rethinking growth  | •  | •  |    |    |    | •  | •  |
| <b>Main Forum (Parallel sessions)</b>   |    |    |    |    |    |    |    |
| • The business of nanotech: Sizing up opportunities   | •  |    |    | •  |    |    |    |
| • Shaping tomorrow: Creating leaders of the future  | •  | •  |    |    |    |    |    |
| • Disaster mitigation and management: Role of the private sector  | •  |    |    |    |    |    | •  |
| • Living sustainably: Walking the greener side of business  | •  |    |    |    |    | •  |    |
| <b>Business Networking Breakfast</b>  |    |    |    |    |    |    |    |
| • By industry sectors:<br>Healthcare, Technology, Agriculture, Green Industry, Halal Industry, Tourism, Islamic Banking & Finance, Logistics, Infrastructure, Oil & Gas and Education | •  | •  | •  | •  | •  | •  |    |
| • By organisations:<br>MUSIAD, IDB, ICCIA and ICDT  | •  | •  |    |    |    |    |    |



Young Leaders Forum (Parallel sessions)

- Business start-up masterclass: Managing finance and risks
- iGovt: Developing a new generation of technocrats
- WYN Dialogue Series: Are policies in the Muslim world hindering the spirit of entrepreneurship?
- Crowdsourcing 101: Growing ideas for change

Businesswomen Forum (Parallel sessions)

- CEO Panel Women Entrepreneurs: Catalyst for change
- Business innovation: Chasing success on a shoestring
- Women in technology: Fostering interest and overcoming obstacles
- Face-to-Face Dialogue: Promoting social entrepreneurship

| CT | NO | IM | A1 | A2 | A3 | A4 |
|----|----|----|----|----|----|----|
|    | •  |    |    | •  |    |    |
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| •  | •  |    |    |    |    |    |

Note:

Changing trends (CT)

- The arrival of Asia
- Increasing business complexity
- New models of innovation
- Socio-economic imbalances

New opportunities (NO)

- Strategic talent management
- Leadership in changing times
- Promise of a new age government

Special focus

- Iskandar Malaysia (IM)

Articles

- A1: Nanotechnology
- A2: Waqf
- A3: Living sustainably
- A4: Disaster management





# Abbreviations

| Abbreviation | Full term   |
|--------------|---|
| APEC         | Asia-Pacific Economic Cooperation                     |
| CAGR         | Compound annual growth rate                           |
| CEO          | Chief executive officer                               |
| CIS          | Commonwealth of Independent States                    |
| EEMEA        | Eastern Europe, Middle East and Africa                |
| EFA          | Education for All                                     |
| EIU          | Economic Intelligence Unit                            |
| EU           | European Union  |
| FDI          | Foreign direct investments                            |
| GDP          | Gross domestic product                                |
| ICDT         | Islamic Centre for Development of Trade               |
| ICCIA        | Islamic Chamber of Commerce, Industry and Agriculture |
| IDB          | Islamic Development Bank                              |
| ILO          | International Labour Organisation                     |
| IM           | Iskandar Malaysia                                     |

| Abbreviation | Full term  |
|--------------|--|
| IMF          | International Monetary Fund                                      |
| MUSIAD       | Independent Industrialists and Businessmen's Association         |
| R&D          | Research and development   |
| OECD         | Organisation for Economic Cooperation and Development            |
| PPP          | Purchasing power parity  |
| PwC          | PricewaterhouseCoopers   |
| UAE          | United Arab Emirates   |
| UK           | United Kingdom   |
| USA          | United States of America   |
| UNCTAD       | United Nations Conference on Trade and Development               |
| UNESCO       | United Nations Educational, Scientific and Cultural Organization |
| WEF          | World Economic Forum   |
| WEO          | World Economic Outlook   |
| WIEF         | World Islamic Economic Forum                                     |
| WYN          | WIEF Young Leaders Network                                       |





# Changing trends

- 1 The arrival of Asia**  
Shifting dynamics of global capital and the shape of city economies to come
- 2 Increasing business complexity**  
Balancing global capabilities with local opportunities and top threats to growth prospects
- 3 New models of innovation**  
Emerging technologies - Friend or foe?
- 4 Socio-economic imbalances**  
Rethinking boundaries around social imbalances





The arrival of Asia

## Shifting dynamics of global capital and the shape of city economies to come

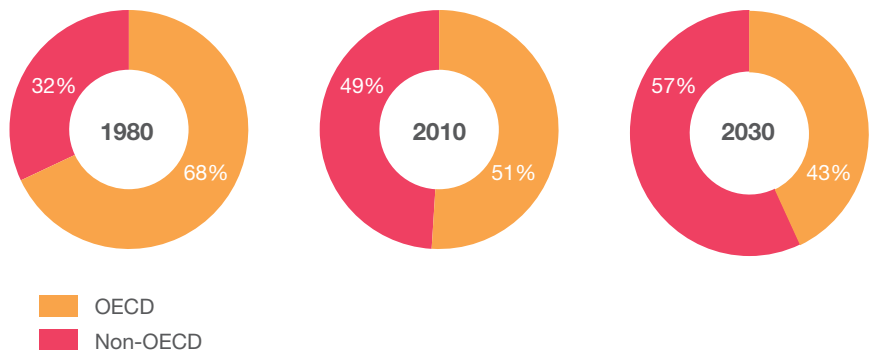
“Recognising that the world is somewhat split down the middle between slow growth and rapid growth, you’d better be able to operate in both at the same time.”

Brian Duperreault,  
President and CEO of Marsh &  
McLennan Companies Inc.  
PwC, 15th Annual Global CEO Survey  
2012 (Jan 2012)

### Shifting dynamics of global capital

#### GDP growth for developed vs emerging economies

Gross domestic product (GDP) at purchasing power parity (PPP)

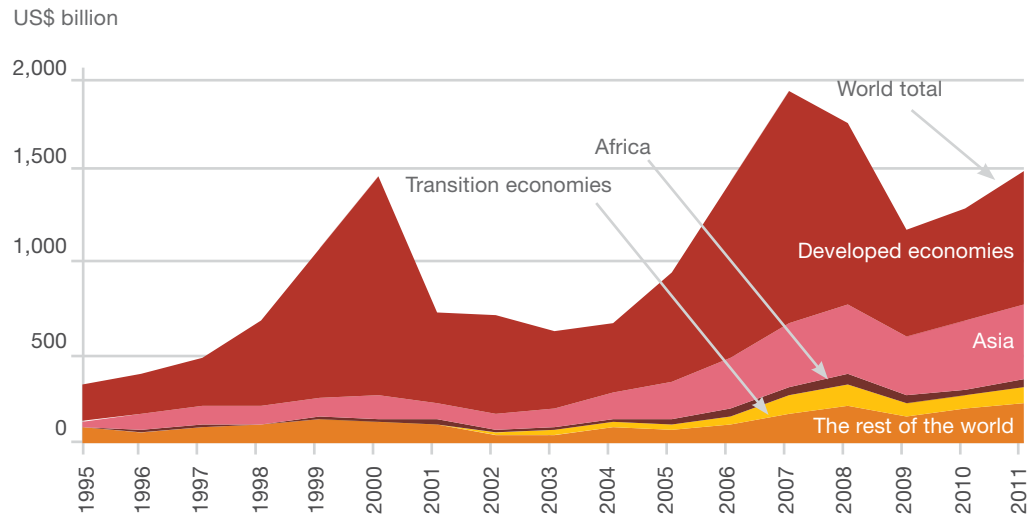


In current international dollars

Source: PwC, “Revitalising corporate Japan” (Oct 2012)

FDI inflows to Asia continue to grow

FDI inflows, global and by group of economies, 1995-2011



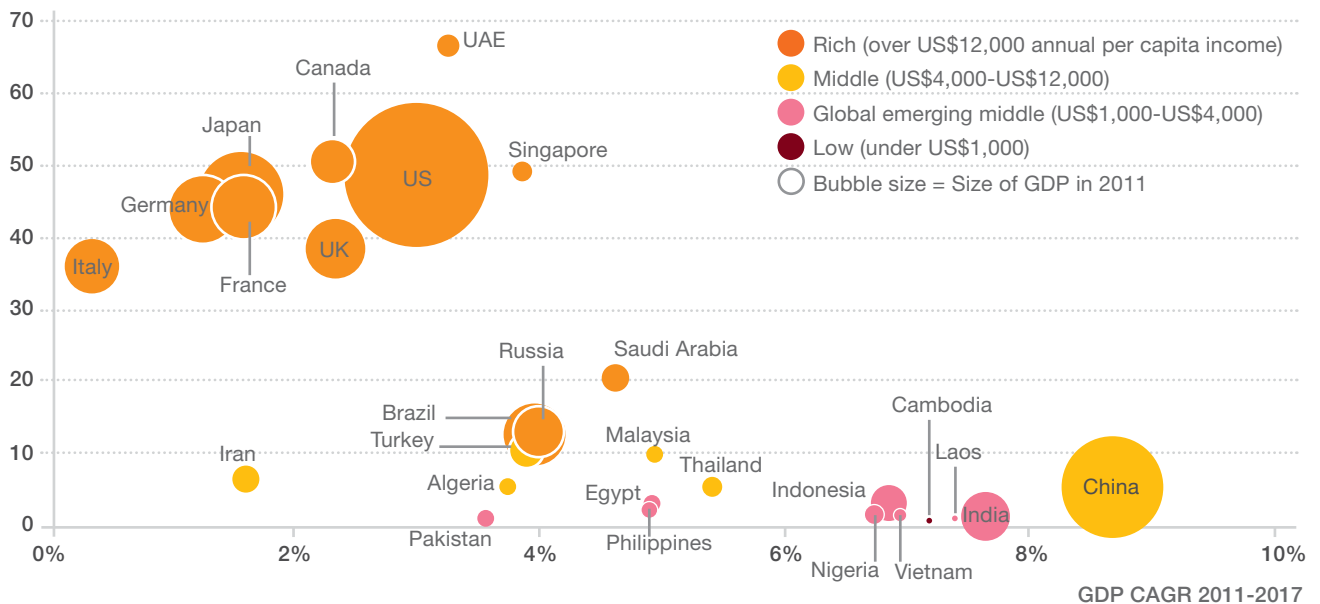
Source: UNCTAD, "World Investment Report 2012" (Jul 2012)



### World GDP per capita, growth and population distribution

Different markets are at different stages of development, each with vastly different needs and price points.

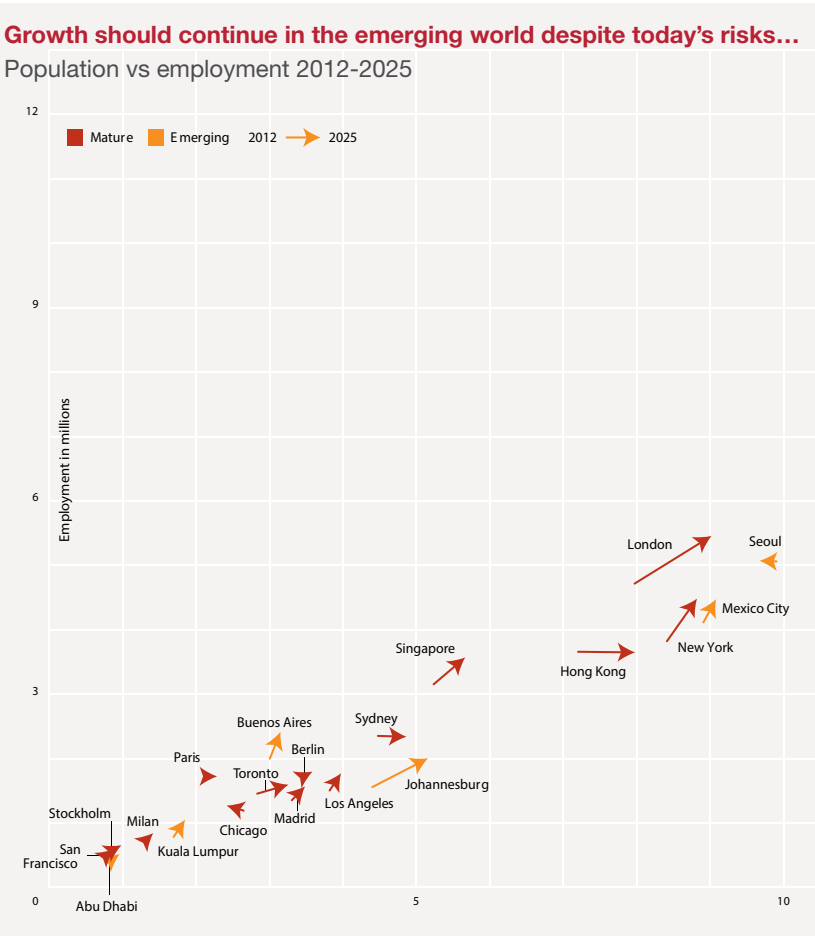
Annual per capita income, US\$'000 (2011)



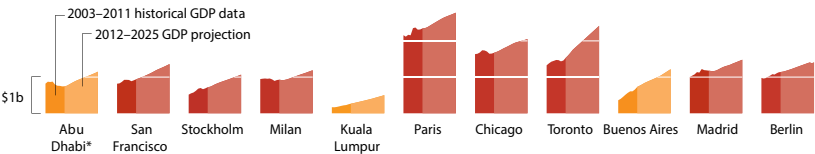
Source: IMF, "World Economic Outlook Database" (Apr 2012)

# The shape of city economies to come

As growth occurs, the symbiotic relationship between East and West is likely to continue - emerging cities will skyrocket in jobs and population, but developed cities will retain the spending power, as well as the consumer and corporate demand, to drive growth. One side will still need the other to move ahead.

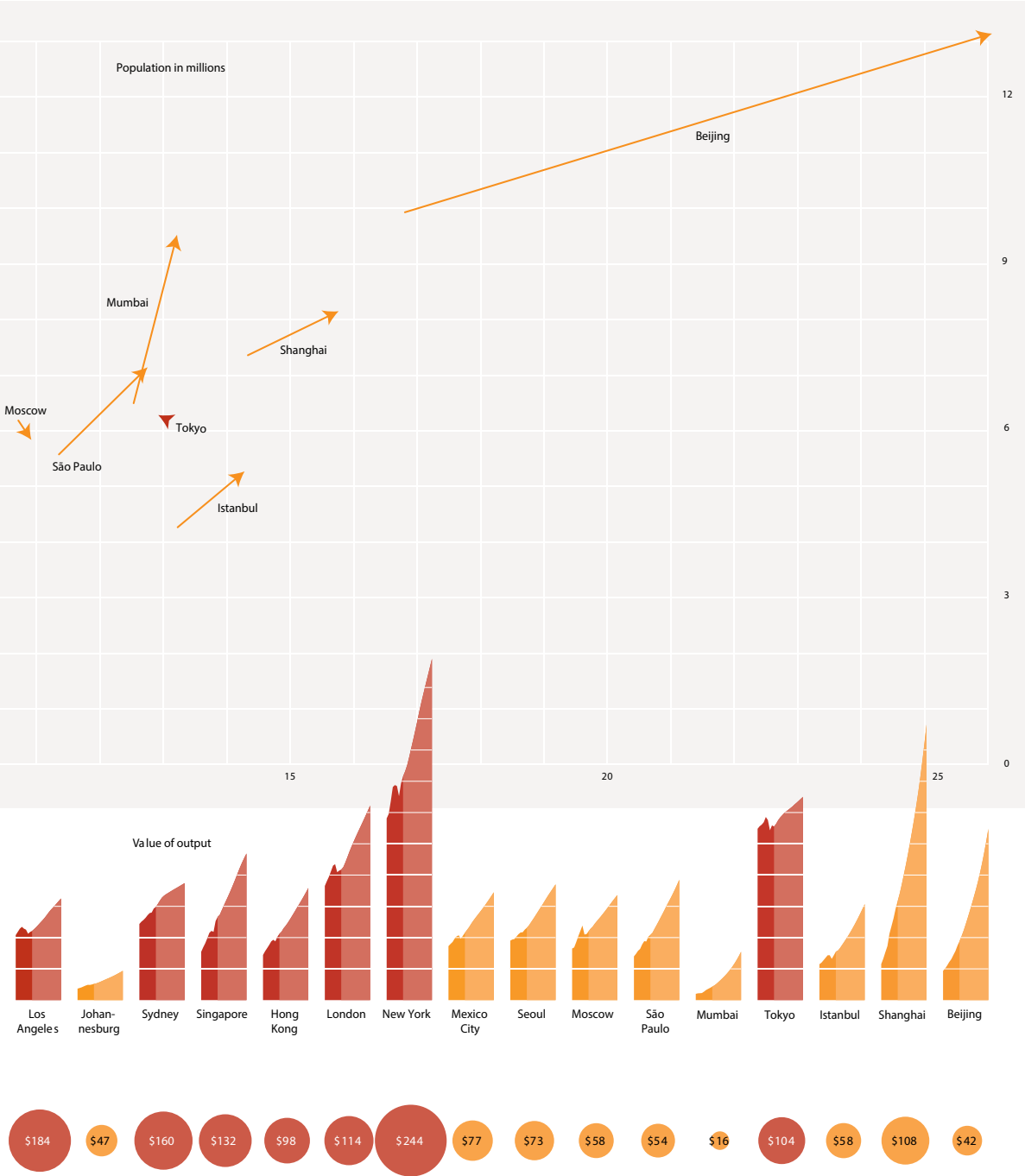


**... While the West gets richer**  
Economic output measured by gross domestic product (GDP), 2003 - 2025



\* GDP driven by the oil economy

Source: PwC, "Cities of Opportunity" (Oct 2012); Oxford Economics





Increasing business complexity

# Balancing global capabilities with local opportunities and top threats to growth prospects

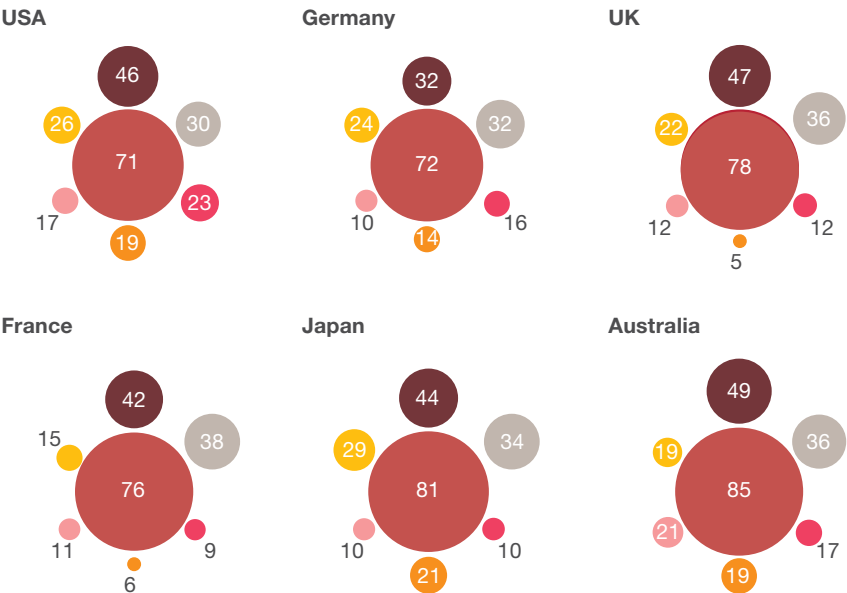
“You have to innovate, design, manufacture and source locally to be successful anywhere.”

David Cote,  
Chairman and CEO of Honeywell.  
PwC, 15th Annual Global CEO Survey  
(Jan 2012)

## Getting closer to priority markets

### CEOs are investing to build different local capabilities

CEOs are taking deliberate steps to grow in priority markets - those they believe are most important for their future. This chart shows the objectives that CEOs hope to achieve in the top ten countries (excluding their base countries) considered to be most important for their overall growth prospects in the next 12 months.

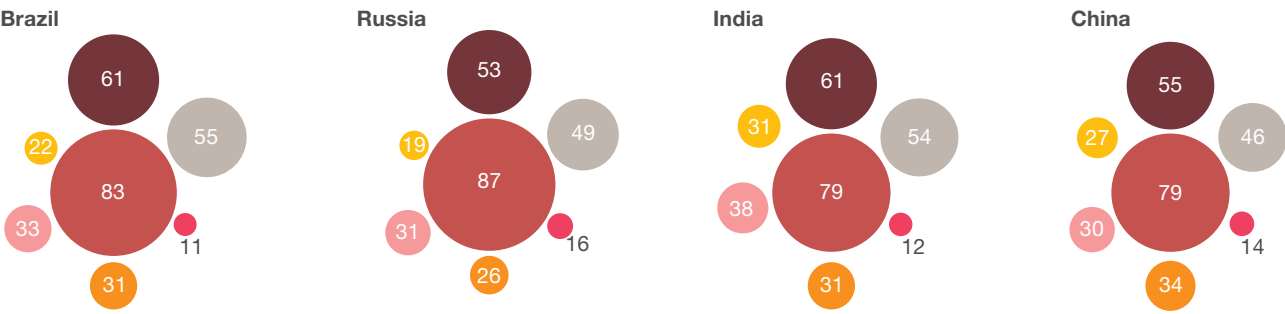


Base respondents: China (383); USA (275); Brazil (188); India (176); Germany (152); Russia (101); UK (81); France (66); Japan (62); Australia (53)



Percentages of CEOs who wants to...

- Grow their customer base
- Access local talent base
- Build internal service delivery capacity
- Build R&D/innovation capacity or acquire intellectual property
- Build manufacturing capacity
- Access raw materials or components
- Access local source of capital

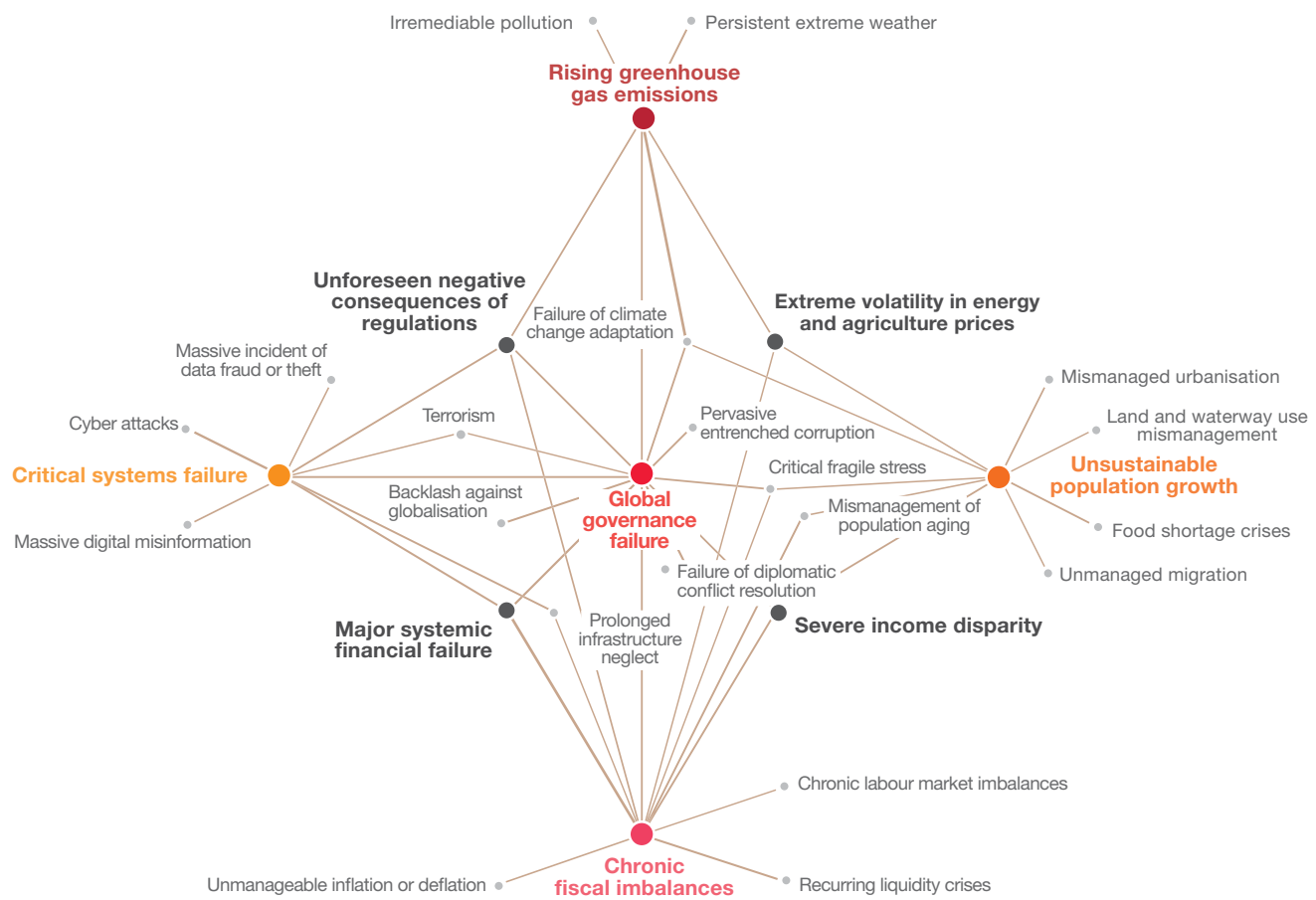


Source: PwC, "15th Annual Global CEO Survey 2012" (Jan 2012)

Balancing risks and growth

Global Risks Map 2012

Across every sector of society, decision makers are struggling with the complexity and velocity of change in an increasingly interdependent world. The context for decision-making has evolved, and in many cases has been altered in revolutionary ways. In the decade ahead, our lives will be more intensely shaped by transformative forces, including economic, environmental, geopolitical, societal and technological seismic shifts. The resulting complexity threatens to overwhelm countries, companies, cultures and communities.

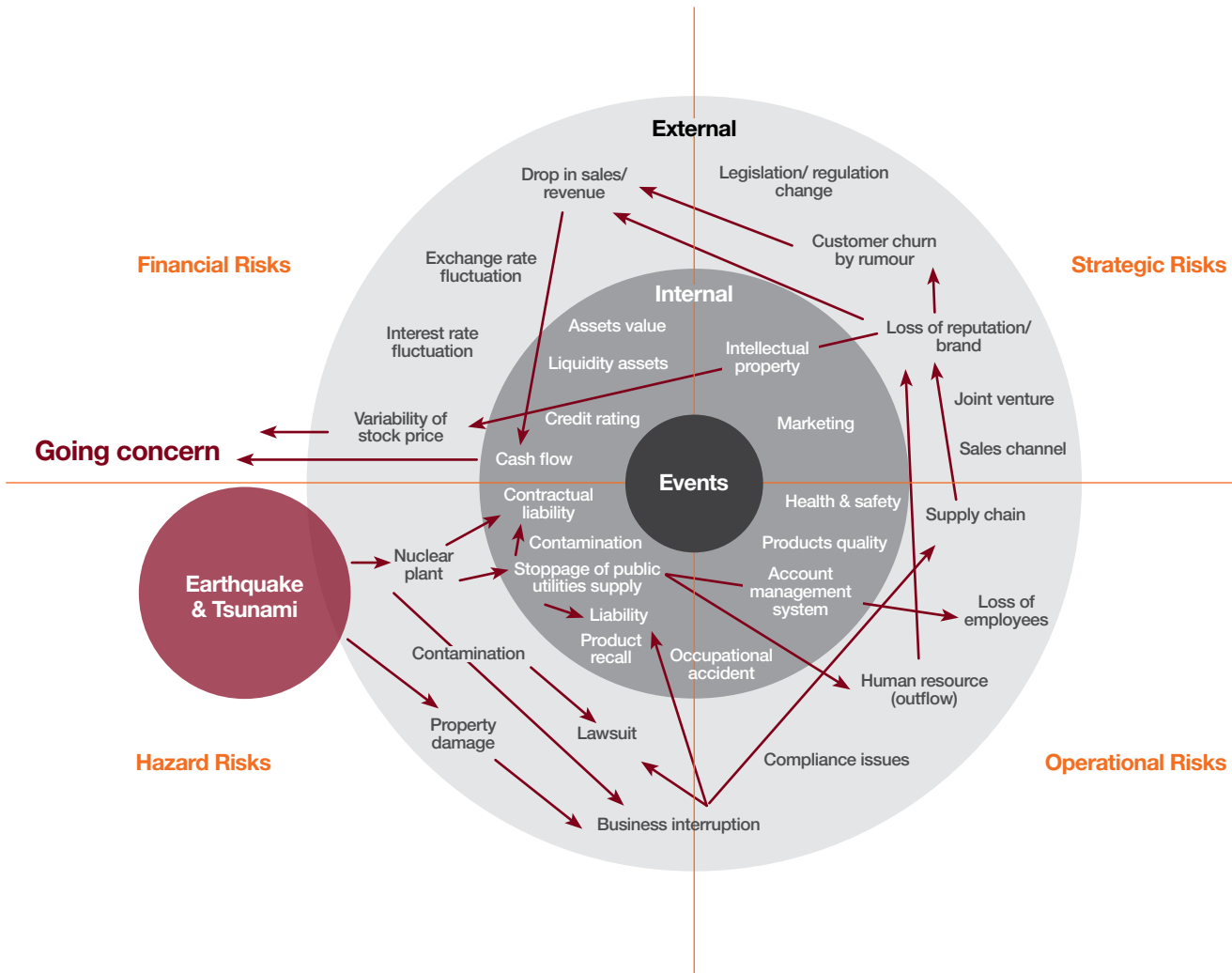


Source: WEF, "Global Risks 2012, Seventh Edition" (Jan 2012)



### The domino effects of natural disasters to business and operational risks

The more complex the system, the greater the risk of systemic breakdown, but also the greater the potential for opportunity. Here's an example of what would happen in the event of an earthquake and tsunami.



Source: WEF, "Global Risks 2012, Seventh Edition" (Jan 2012)

# Emerging technologies - Friend or foe?

“Understanding where technology is heading is more than guesswork. Looking at emerging trends and research, one can predict and draw conclusions about how the technological sphere is developing, and which technologies should become mainstream in the coming years.”

Envisioning Technology,  
<http://envisioningtech.com>

## Friend or foe?

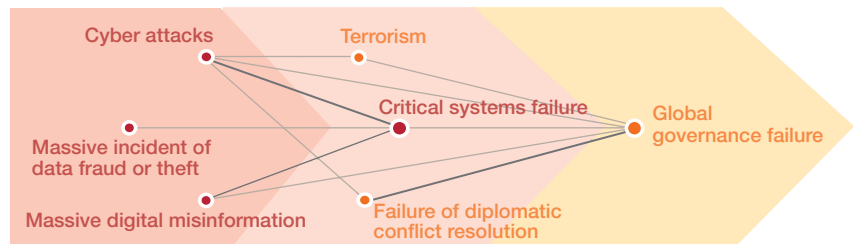
**Impacts of technology changes on organisations over the next decade**  
There're always two sides of the coin.



Source: EIU, “The future of technology disruption in business” (Mar 2012)

### The dark side of technology in the increasingly interconnected world

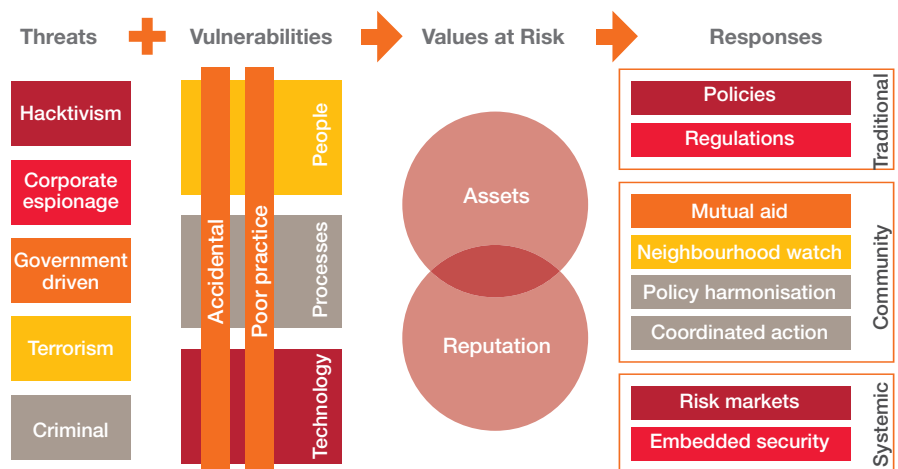
It is increasingly possible for skilled individuals to cause devastating consequences for geopolitical or corporate powers remotely and anonymously through networked computer systems.



Source: WEF, "Global Risks 2012, Seventh Edition" (Jan 2012)

### Framework for cyber threats and responses

As power shifts from the physical to the virtual world, a new paradigm for ensuring a healthy digital space must emerge.






































Source: WEF, "Global Risks 2012, Seventh Edition" (Jan 2012)


























Seeing emerging technologies in a wider context

Envisioning emerging technology for 2012 and beyond

By speculating about what lies beyond the horizon, we can make better decisions of what to create today. This chart tries to see where we're heading in the near future by extrapolating on current developments and advances in each of the new emerging technologies clusters – artificial intelligence, the Internet, interfaces, sensors, ubicomp, robotics, biotech, materials, energy, space and geoen지니어ing.

|            | ARTIFICIAL INTELLIGENCE  | INTERNET   | INTERFACES  | SENSORS  | UBICOMP  |
|------------|--|--|---|--|--|
| 2012       | <br>High-frequency trading            | <br>Cloud computing   | <br>Multi touch                      | <br>Depth imaging                           | <br>Tablets   |
| 2013       |  |  |   |  |  |
| 2014       | <br>Software agents                   | <br>Cyber-warfare   | <br>Gesture recognition              | <br>Near-field communication                | <br>Volumetric (3D) screens   |
| 2015       |  |  | <br>Speech recognition               | <br>Pervasive video capture                 | <br>Flexible screens  |
| 2016       | <br>Natural language interpretation   | <br>4G  | <br>Speech recognition               | <br>Pervasive video capture                 | <br>Flexible screens  |
| 2017       |  | <br>Mesh networking   | <br>Augmented reality                | <br>Biometrics sensors                      | <br>Boards  |
| 2018       |  | <br>Photonics   | <br>4K                               | <br>Smart power meters                      | <br>Modular computers   |
| 2019       | <br>Machine translation               | <br>Virtual currencies  | <br>Haptics                          | <br>Biomarkers                              | <br>Pico-projectors   |
| 2020       | <br>Procedural storytelling         | <br>5G  |   | <br>Machine vision                        | <br>Eyewear-embedded screens  |
| Up to 2040 | <ul style="list-style-type: none"><li>• Virtual reality only lifeforms</li><li>• Machine-augmented cognition</li></ul> | <ul style="list-style-type: none"><li>• Reputation economy</li><li>• Interplanetary internet</li><li>• Remote presence</li><li>• Exocortex</li></ul> | <ul style="list-style-type: none"><li>• Holography</li><li>• Telepresence</li><li>• Immersive virtual reality</li></ul> | <ul style="list-style-type: none"><li>• Computational photography</li><li>• Optogenetics</li><li>• Neuro-informatics</li></ul> | <ul style="list-style-type: none"><li>• Context-aware computing</li><li>• Fabric-embedded screens</li><li>• Programmable chips</li><li>• Skin-embedded screens</li><li>• Retinal screens</li></ul> |



| ROBOTICS   | BIOTECH   | MATERIALS  | ENERGY   | SPACE   | GEO-ENGINEERING  |
|--|---|--|--|---|--|
|  |  Rapid personal gene sequencing  |  Additive manufacturing   |  Inductive chargers   |   |  |
|  |   |  |  |   |  |
|  Appliance robots  |   |  Self-healing materials   |  Tidal turbines   |   |  |
|  Telematics  |  Organ printing  |  |  Fuel cells   |  Commercial spaceflight                          |  |
|  Smart toys  |   |  Graphene   |  Bio-enhanced fuels   |   |  |
|  Robotic surgery   |  Synthetic blood   |  |  |   |  |
|  Self-driving vehicles   |  Smart drugs   |  Personal fabricators   |  Multi-segmented smart grids  |  Sub-orbital spaceflight                         |  |
|  Powered exoskeleton   |  Personalised medicine   |  Meta-materials   |  Photovoltaic glass   |  Space tourism                                 |  |
| <ul style="list-style-type: none"> <li>Commercial unmanned aerial vehicles (UAVs)</li> <li>Domestic robots</li> <li>Swarm robotics</li> <li>Embodied avatars</li> <li>Utility fog</li> </ul> | <ul style="list-style-type: none"> <li>In-vitro meat</li> <li>Synthetic biology</li> <li>Stem-cells treatments</li> <li>Gene therapy</li> <li>Hybrid assisted limbs</li> <li>Artificial retina</li> <li>Nanomedicine</li> <li>Anti-aging drugs</li> </ul> | <ul style="list-style-type: none"> <li>Optical invisibility cloaks</li> <li>Carbon nanotubes</li> <li>Biomaterials</li> <li>Molecular assembler</li> <li>Nanowires</li> <li>Programmable matter</li> </ul> | <ul style="list-style-type: none"> <li>Piezoelectricity</li> <li>Biomechanical harvesting</li> <li>Nano-generators</li> <li>Artificial photosynthesis</li> <li>Enernet</li> <li>Thorium reactor</li> <li>Travelling wave reactor</li> <li>Space-based solar power</li> </ul> | <ul style="list-style-type: none"> <li>Lunar outpost</li> <li>Mars mission</li> <li>Space elevator</li> <li>Solar sail</li> </ul> | <ul style="list-style-type: none"> <li>Weather engineering</li> <li>Vertical farming</li> <li>Sea-standing</li> <li>Desalination</li> <li>Carbon sequestration</li> <li>Climate engineering</li> <li>Arcologies</li> </ul> |

## LEGEND



**RELATIVE IMPORTANCE**  
The node size indicates the predicted importance of technology



**CONSUMER IMPACT**  
The outline of a node indicates a consumer impact larger than technological novelty



**CLUSTER OF TECHNOLOGIES**  
A jagged outline indicates a cluster of similar technologies grouped together

For further information, visit  
Envisioning Technology's  
webpage at [http://  
envisioningtech.com/  
envisioning2012/](http://envisioningtech.com/envisioning2012/)



## Socio-economic imbalances

# Rethinking boundaries around social imbalances

“The demographic changes that we see occurring in many of the regions where we operate – shrinking populations, an ageing workforce and diversifying demographics – compounds the challenges we face and intensifies the war for talent.”

*Dr Rüdiger Grube, Chairman and CEO of Deutsche Bahn AG, Germany.  
PwC, 15th Annual Global CEO Survey 2012 (Jan 2012)*

## Rethinking boundaries

### Social imbalances in 2025

Developed economies will see a more ageing workforce compared to emerging and least developed economies.



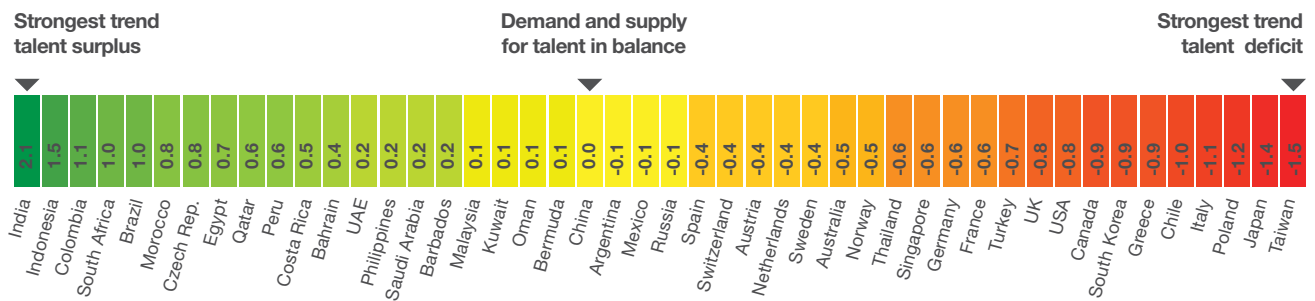
Note: Population pyramids showing the percentage of the population using 4-year age intervals

Source: WEF, “Global Risks 2012, Seventh Edition” (Jan 2012); World Population Prospects: 2010 Revision, New York: United Nations Department of Economic and Social Affairs (2010)

Talent mismatch

The mismatch between supply and demand for skilled labour in 2021

The table ranks countries according to how their talent gaps are expected to evolve over the next decade. China's supply and demand for skilled labour is seen to be in balance. Its heavy investment in education will enable it to meet its talent needs and sustain its rapid economic development, even as its population growth levels off and its population begins to age. Its projected 4.6% annual increase in college-educated talent will roughly match its economic growth.



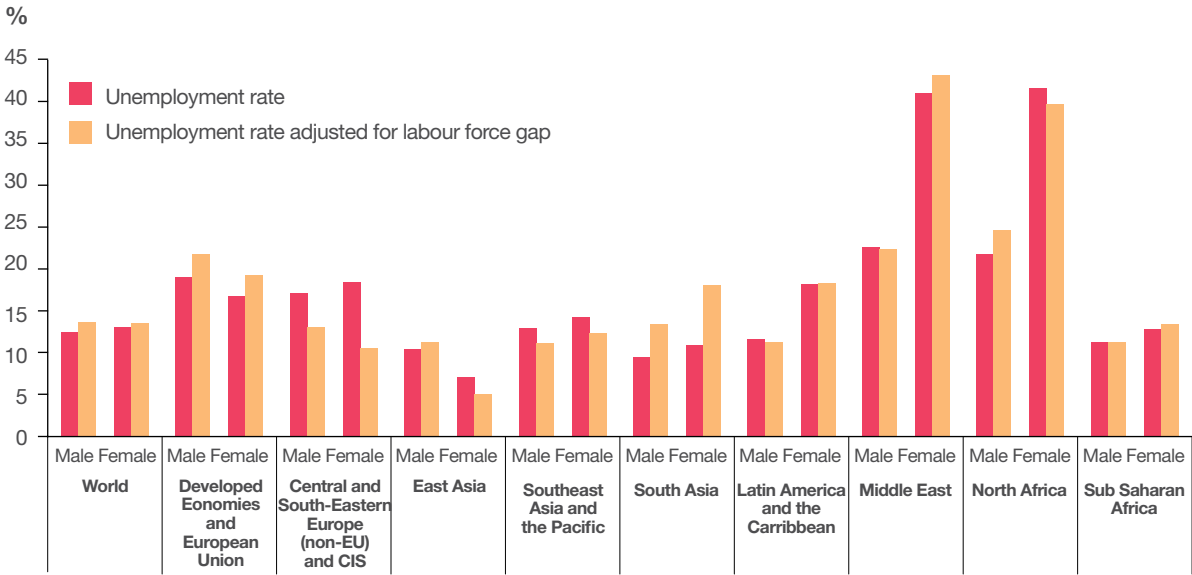
- Notes
- 1. Talent deficits are shown as red (negative numbers), talent surpluses as green (positive numbers), and broad balance as yellow.
  - 2. Numbers report the average annual % change of the deficit/surplus.

Source: Oxford Economics, "Global Talent 2021" (Jul 2012)



The irony of high youth unemployment rates in regions with talent surplus

Although youth unemployment continues to be a concern in both developed and developing economies, the issue is more prominent in the Middle East and North Africa. Youth entering the urban labour force often find that their education has not equipped them with the technological skills and entrepreneurial know-how to access employment opportunities presented by global connectivity. The chart shows youth unemployment rates and the ‘adjusted’ youth unemployment rates to account for reduced labour force participation in 2011.



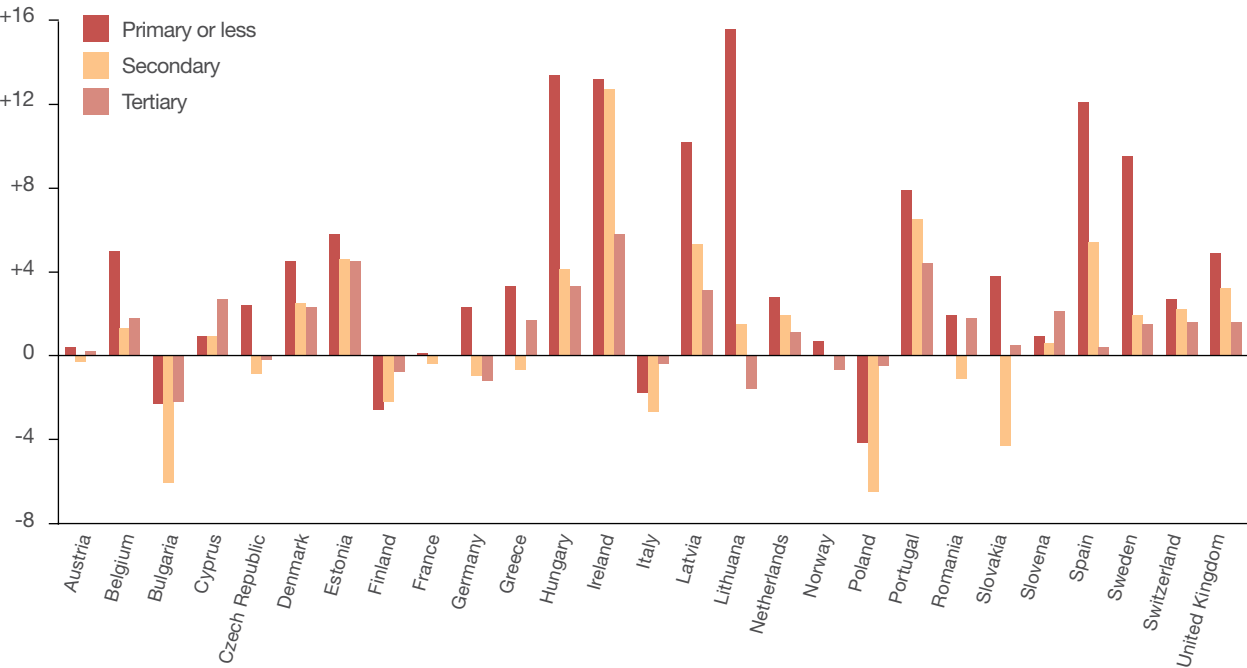
Note: The adjustment of the youth unemployment rate has been made on the basis of a comparison of pre-crisis trends in youth labour force participation and the ILO's estimates of the economically active population.

Source: ILO, "Global Employment Trend for Youth 2012" (May 2012)

Strong link between educational attainment and employment outcomes

The below chart shows that higher level of education correlates with a better chance of employment.

Change in percentage points between 2000 and 2010



Source: ILO, "Global Employment Trend for Youth 2012" (May 2012)

### Youth skills: Hope for a better future

Ten most important actions needed in support of skills development for youth. These can be tailored to fit country-specific circumstances and needs.

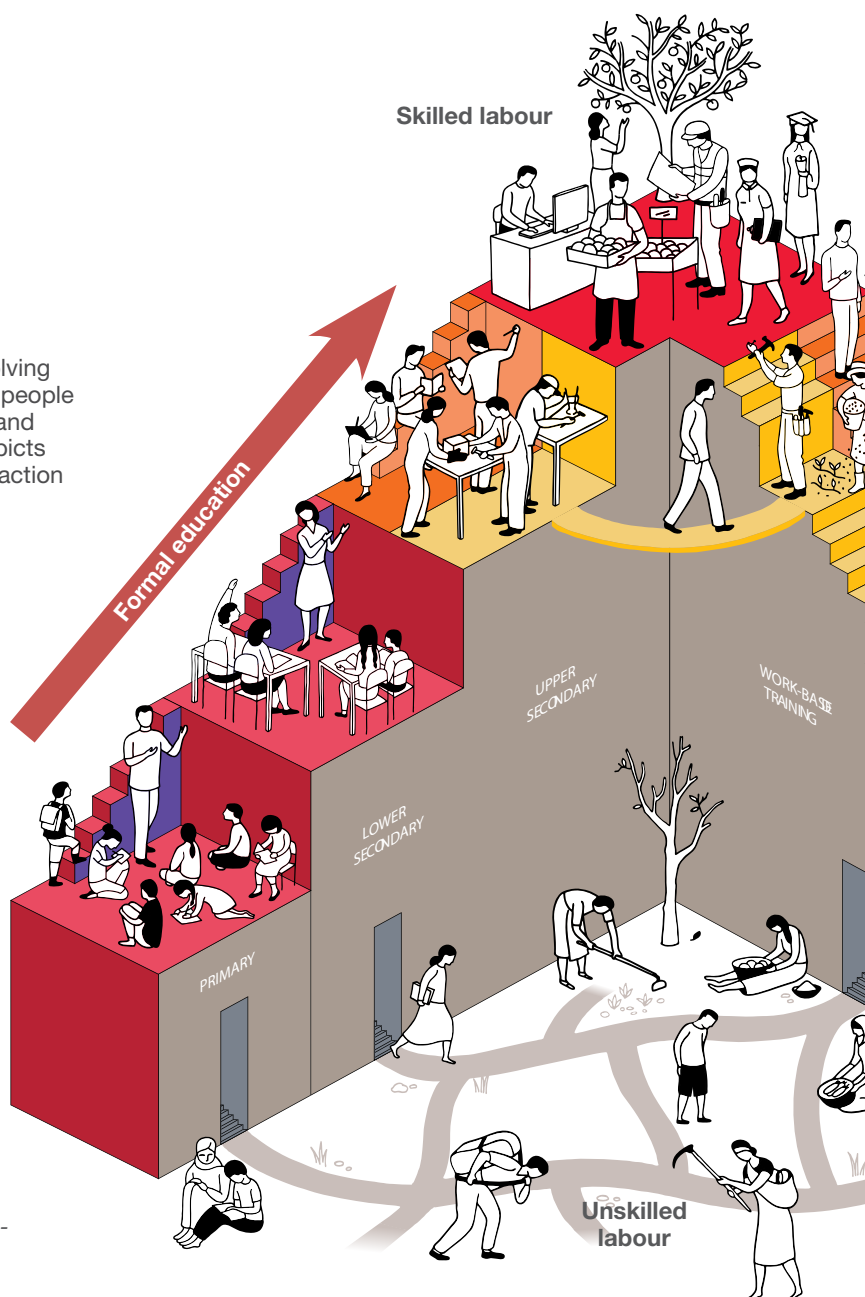


Source: UNESCO, "EFA Global Monitoring Report 2012 - Youth and skills: Putting education to work" (Oct 2012)

### Pathways to skills

To be able to adapt to the workplace and fast-evolving technologies in competitive economies, all young people need to acquire skills that a good quality primary and secondary education can offer. The illustration depicts skills development needs and areas where policy action should be targeted.

- Technical and vocational skills
- Transferable skills
- Foundation skills



Source: UNESCO, "EFA Global Monitoring Report 2012 - Youth and skills: Putting education to work" (Oct 2012)





The illustration shows the three main types of skills that all young people need — foundation, transferable, and technical and vocational skills — and the contexts in which they may be acquired.

The left side shows formal general education and its extension, technical and vocational education. The right side shows skills training opportunities for those who have missed out on formal schooling, ranging from a second chance to acquire foundation skills to work-based training, including apprenticeships and farm-based training.

Those lacking even foundation skills, represented at the base of the illustration, often have to make do with subsistence-level work, for wages that trap them in poverty.

The uppermost level represents those whose accumulated skills enable them to advance to better-paid work, including entrepreneurial opportunities, and to higher education.





# New opportunities

- 1 Strategic talent management**  
Winning the global war for talent
- 2 Leadership in challenging times**  
Prescription for growth and the women agenda
- 3 Promise of a new age government**  
A holistic management approach for cities

## Winning the global war for talent

“We’re starting to attract some technically inclined people out of the schools today, but there are fewer mining schools and mining engineers – at the same time there’s more demand for them.”

*Michael White, Chairman, President and CEO of The DIRECTV Group Inc., US. PwC, 15th Annual Global CEO Survey 2012 (Jan 2012)*

*Source: PwC, “15th Annual Global CEO Survey 2012” (Jan 2012)*

### The costly toll of global talent shortages, and the urgent need to change

#### Skill gaps pose a serious problem...

**43%** of CEOs report more difficulty in hiring workers

**47%** of those report that the primary reason for the difficulty is a deficit in the supply of skilled candidates

#### ... as they limit growth opportunities

CEOs responded that talent constraints have affected their companies' growth and profitability over the past 12 months:

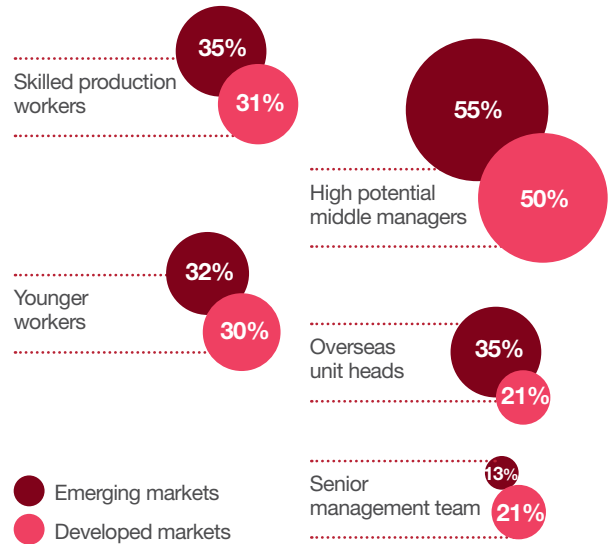




Every industry faces unique talent challenges that affect a CEO's ability to meet strategic goals.

| Percentage of CEOs who report: | More difficulty in hiring | Deficit of skilled candidates |
|--------------------------------|---------------------------|-------------------------------|
| Pharmaceutical                 | 51%                       | 64%                           |
| Insurance                      | 49%                       | 56%                           |
| Technology                     | 48%                       | 42%                           |
| Healthcare                     | 47%                       | 53%                           |
| Industrial manufacturing       | 47%                       | 40%                           |
| Automotive                     | 46%                       | 48%                           |
| Consumer goods                 | 44%                       | 54%                           |
| Entertainment/media            | 43%                       | 41%                           |
| Banking/capital markets        | 41%                       | 46%                           |
| Transportation/logistics       | 40%                       | 56%                           |
| Construction/engineering       | 40%                       | 52%                           |
| Chemicals                      | 36%                       | 56%                           |
| Business/professional services | 35%                       | 48%                           |
| Hospitality/leisure            | 34%                       | 60%                           |
| Communications                 | 31%                       | 38%                           |
| Asset management               | 30%                       | 39%                           |
| Retail                         | 22%                       | 40%                           |

CEOs face the greatest challenges in recruitment and retention of:

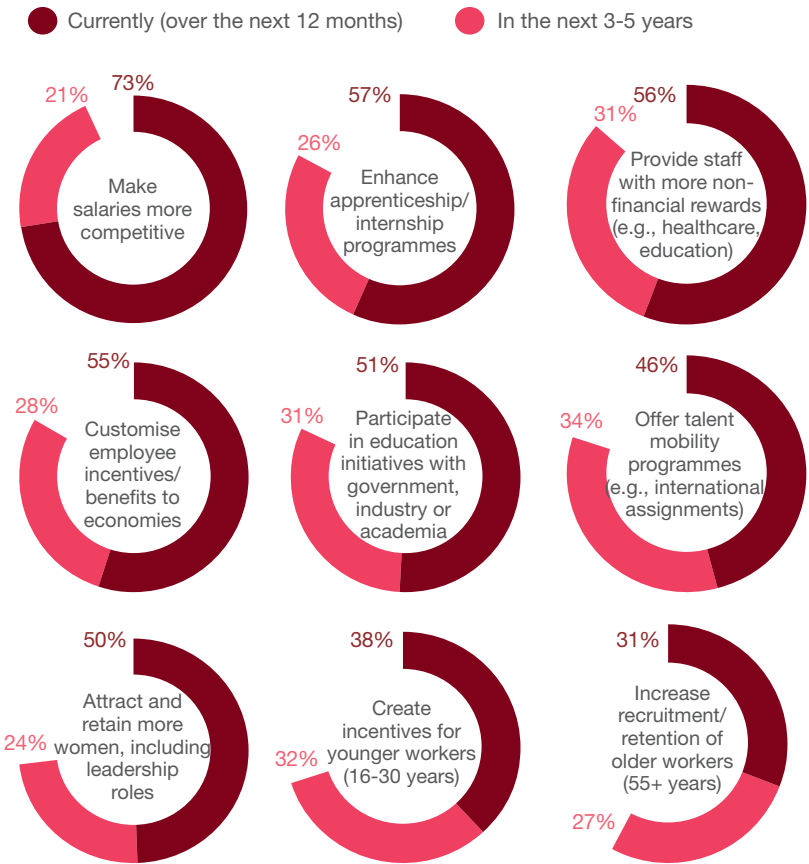


Base: All respondents (621; 637)

Source: PwC, "15th Annual Global CEO Survey 2012" (Jan 2012)

... but companies are raising the bar to recruit and retain top talent

Q: Thinking of your operations in the APEC region, to what extent is your organisation implementing the following in its people strategy?



Base: 322-356 business leaders representing 21 APEC economies  
Source: PwC, “2012 APEC CEO Survey” (Sept 2012)

For every US\$1 spent on education, US\$10- US\$15 is generated in economic growth

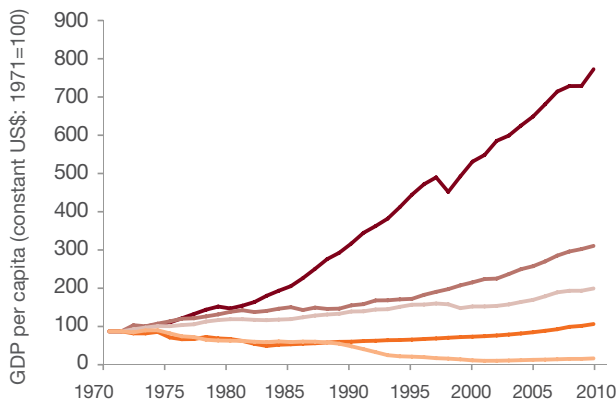
Skills development requires much better national coordination

Many governments neglect skills development and the disadvantaged lose out the most

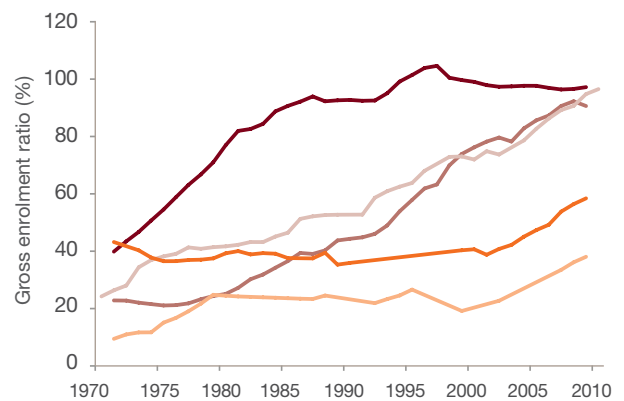
### Case study: The Republic of Korea's investment in skills development has contributed to its impressive economic growth

Skills development is a wise investment because it is vital in order to reduce unemployment, inequality and poverty, and to promote economic growth. The Republic of Korea matched skills supply to demand and succeeded in becoming a wealthy country within 30 years. Charts below show economic and education growth in five countries with similar incomes in 1970.

**Economic growth**



**Secondary education gross enrolment ratio, 1971 to 2010**



Republic of Korea  
Tunisia  
Colombia  
Ghana  
Democratic Republic of Congo

Source: UNESCO, "EFA Global Monitoring Report 2012 - Youth and skills: Putting education to work" (Oct 2012); UIS database and World Bank (2012)

## Prescription for growth and the women agenda

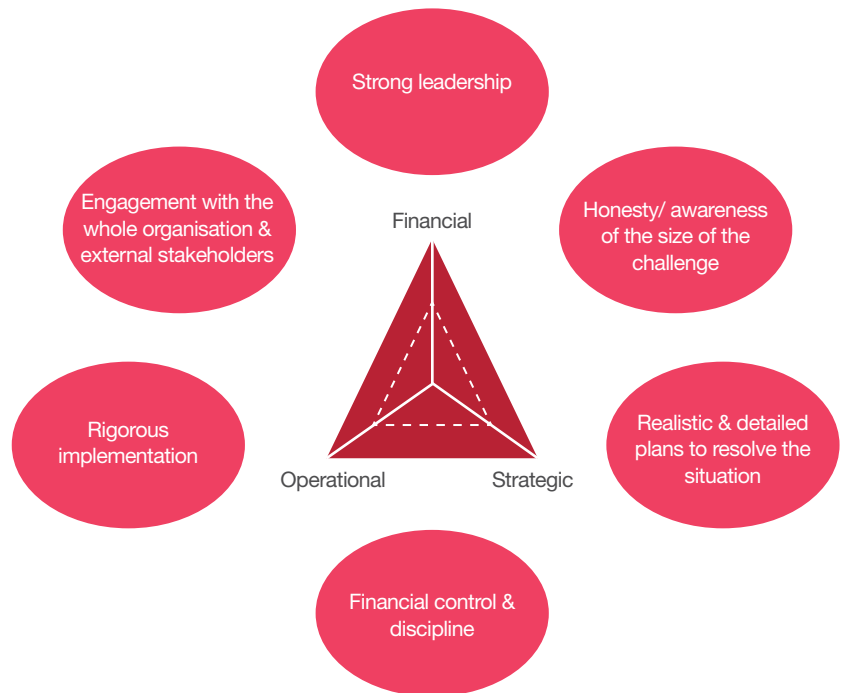
“We need drastic change in order to respond to global competition. Maybe it’s not just a leadership problem, but (one that is) an overall aspect of the company.”

*Takahide Kiuchi,  
Chief Economist of Nomura Securities.  
PwC, Revitalising corporate Japan  
(Oct 2012)*

### Back to basics

#### Key turnaround success factors

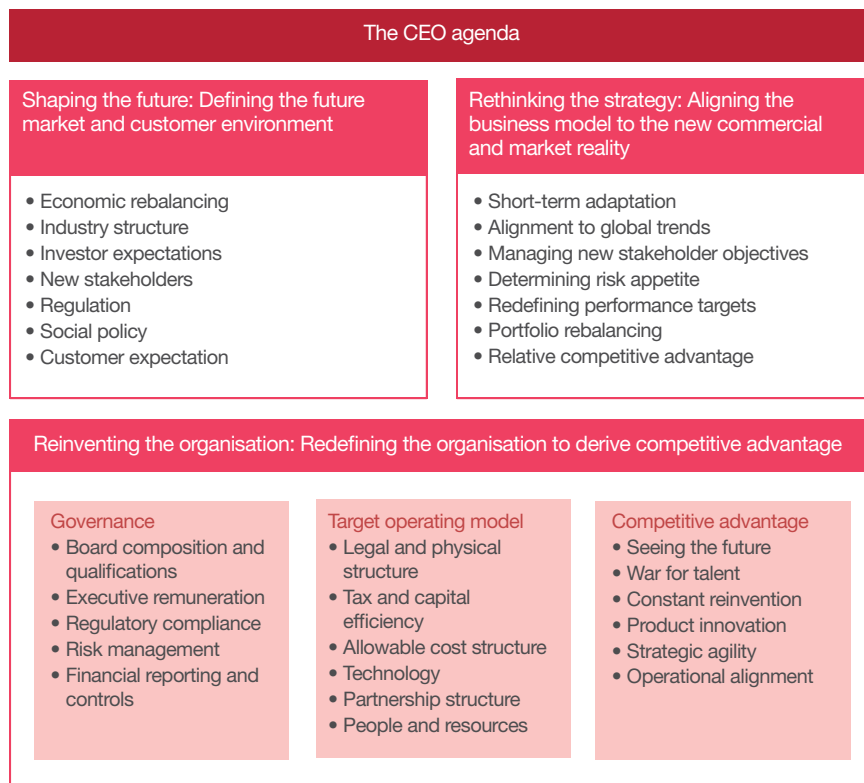
Some lessons which we have learnt from our work across both private and public organisations.



*Source: PwC, “Under Pressure: securing success, managing risk in public services” (Sept 2012)*

### Framework for strategic evaluation

Some of the main considerations for CEOs as they look at how they can best compete and attract investment in this changing landscape.



Source: PwC, "Confronting the new market realities" (Sept 2012)

Family business means business

Scale, skills, succession

Tackling the tipping points for family firms

The family firm in 2012



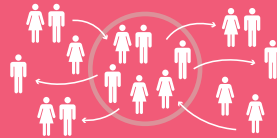
Family businesses are thriving globally



Family businesses are ambitious and confident about their prospects

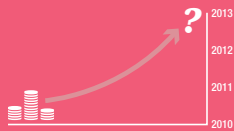


The economic environment remains the key external challenge



Internally, the main issue is the recruitment and retention of skilled staff

Looking ahead:  
Emerging issues for 2017



The economy remains a cause for concern



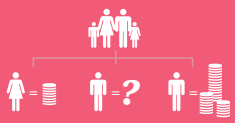
Globalisation will be crucial to success – or failure



Innovation will be vital to secure competitive advantage



The ‘war for talent’ is still waging – certainly for family businesses

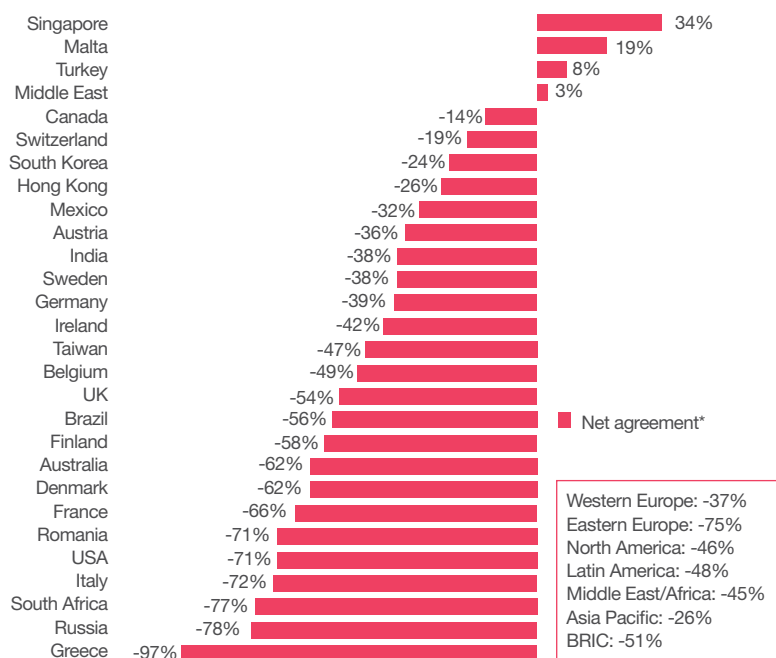


The transition between generations can build the family firm – or break it



### Most family businesses feel negatively about government's role in helping them in the current climate

Family businesses in 24 out of 28 countries surveyed feel that their respective government is not doing enough to help them survive and develop their activities in the current economic climate.



\*Net agreement = proportion of those agreeing and subtracting the proportion of those disagreeing

Source: PwC, "PwC Family Business Survey 2012" (Oct 2012)

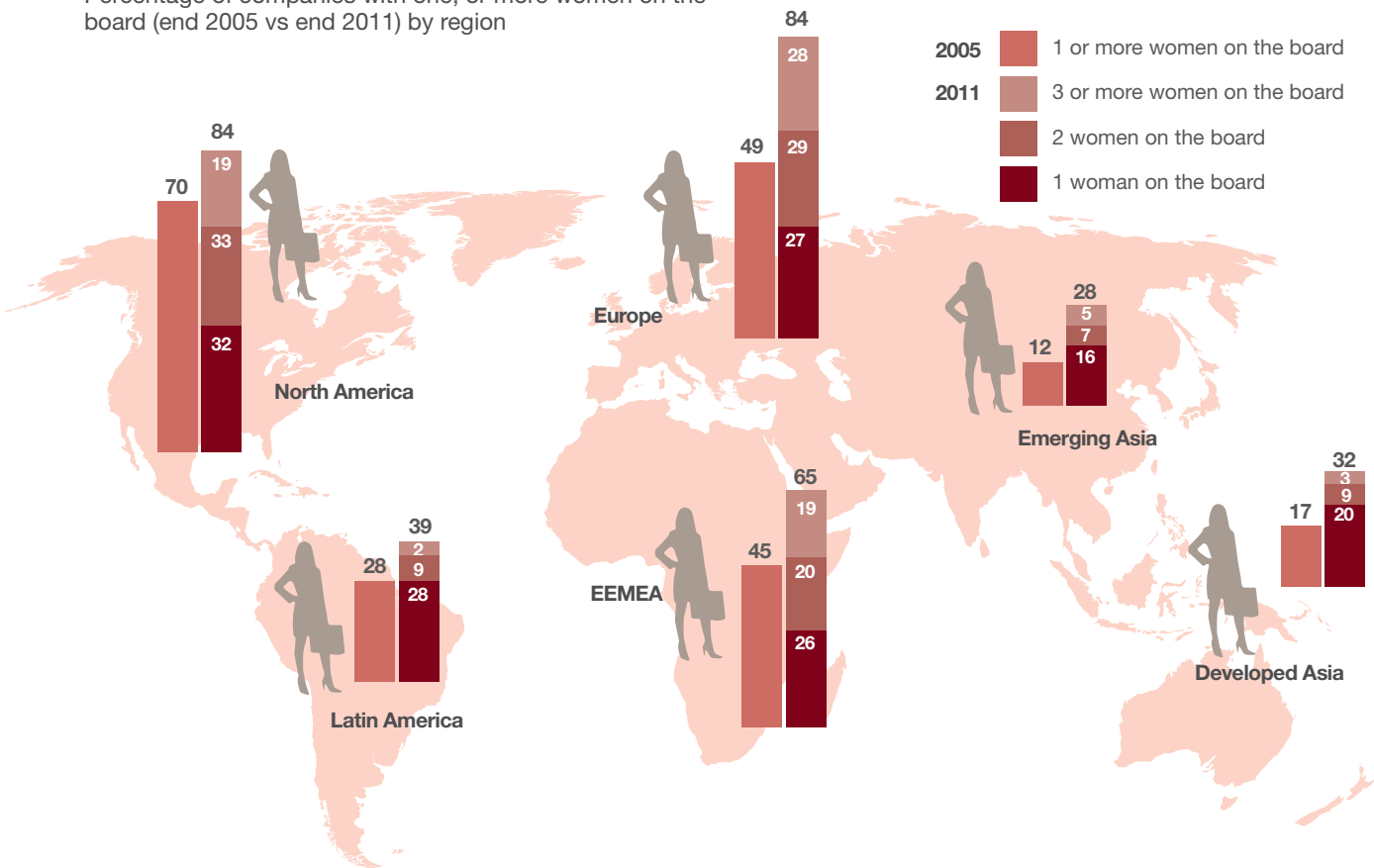
### A checklist for government action

- Is your tax regime as supportive as it could be for family firms?
- Are there grants and incentives designed to meet their specific needs, whether in innovation, R&D, or new technology?
- Is there more you could do to help them obtain long-term finance for expansion?
- What are you doing to help them access export markets?
- What support do you offer on training and skills?
- Do you have agencies that facilitate networking, mentoring and partnerships with multinationals?
- Is there a national strategy for supporting and developing family businesses to grow domestically and internationally?
- And finally, is the support you offer adequately publicised?

# Gender diversity and corporate leadership

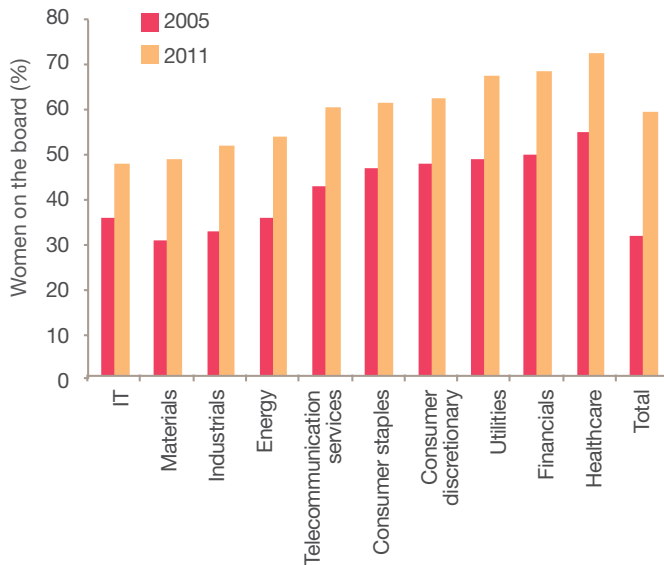
Increasing female board representation seen over the years across regions, but Asian countries still lagging behind

Percentage of companies with one, or more women on the board (end 2005 vs end 2011) by region



### There's also a clear trend towards greater female board representation across all sectors...

Percentage of companies with one or more women on the board (end 2005 vs end 2011) by sector



### ... and better financial performance noted for companies with women on the board

Return on equity (ROE) of companies with none or at least one woman on the board (end 2005 vs end 2011)



\* The average ROE from 2005 to 2011

Source: Credit Suisse Research, "Gender diversity and corporate performance" (Aug 2012)

Promise of a new age government

## A holistic management approach for cities

“Crises generally make it impossible to carry out some reforms, but on the other hand, a crisis is a good time to verify the validity of all types of expenditure. There are some difficult areas, which require open public debates.”

*Krzysztof Gulda, Director of the Department of Strategy at Poland's Ministry of Science and Higher Education. PwC, 15th Annual Global CEO Survey 2012 (Jan 2012)*

### Securing success

#### Capabilities to execute strategy

The holistic approach for the cities of the future



Source: PwC, “Taking responsibility: Government and the Global CEO” (Feb 2012)

**Transition to the new open model of public service delivery**  
Changes required at three levels – citizens, suppliers and government

|            | Traditional/"closed" model of delivery  | New/"open" model of delivery   |
|------------|---|--|
| Citizen    | <ul style="list-style-type: none"><li>• Limited influence on decision-making</li><li>• Disconnected from service provider(s)</li><li>• Limited access to data</li></ul>               | <ul style="list-style-type: none"><li>• Part of the decision-making process</li><li>• Engaged with the service provider(s)</li><li>• Full access to information and analysis</li></ul> |
| Suppliers  | <ul style="list-style-type: none"><li>• Little incentive to innovate</li><li>• Using size to provide multiple services</li><li>• Disconnected from service users</li></ul>            | <ul style="list-style-type: none"><li>• Competition drives innovation</li><li>• Working alongside multiple providers</li><li>• Responsive to users and focused on outcomes</li></ul>   |
| Government | <ul style="list-style-type: none"><li>• Monopolistic supplier or contractor</li><li>• Contracting based largely on price, not outcomes</li><li>• Disconnected from citizens</li></ul> | <ul style="list-style-type: none"><li>• Creating a framework for diverse suppliers</li><li>• Contracting based on outcomes and delivery</li><li>• Engaged with citizens</li></ul>      |

Source: PwC, “Taking responsibility: Government and the Global CEO” (Feb 2012)

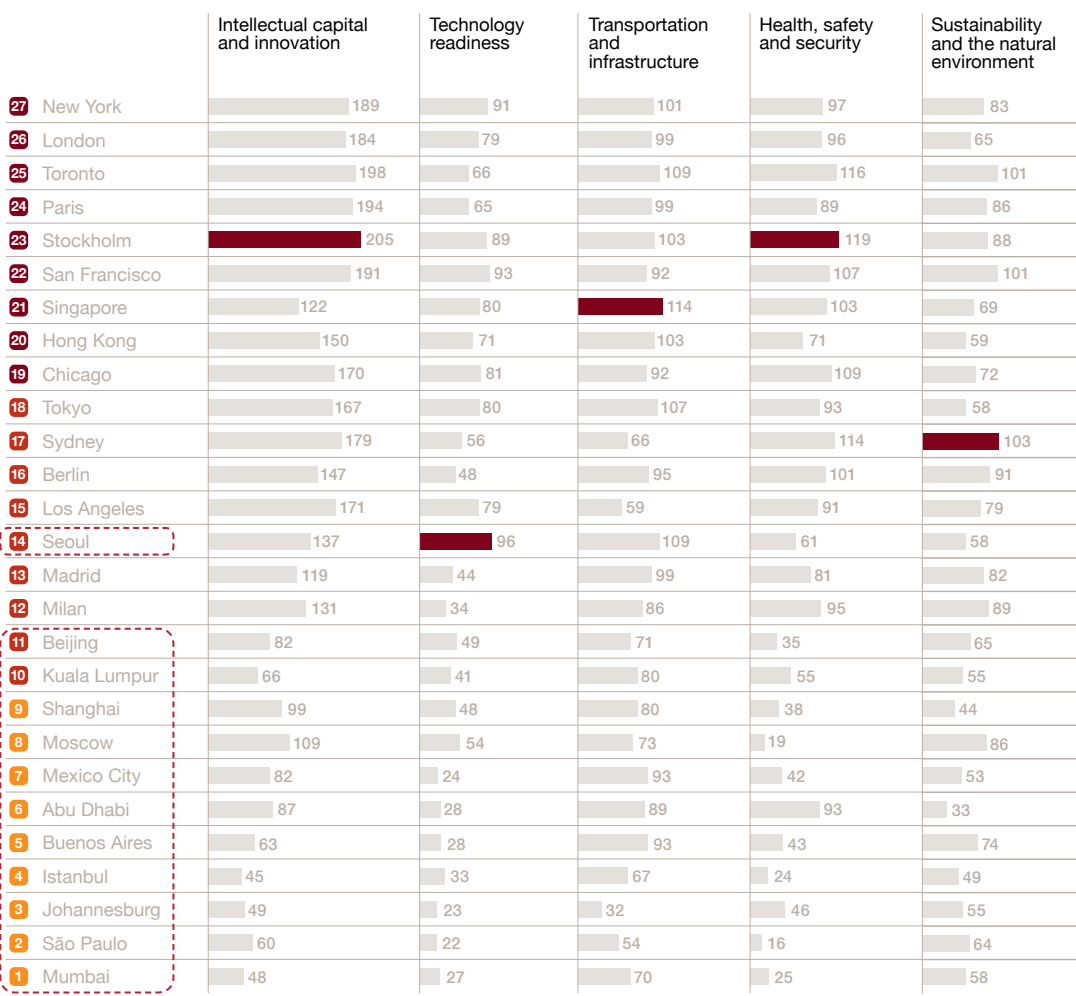
**CEO priorities for government**

| %  |  |
|----|--|
| 57 | Ensure financial sector stability                            |
| 53 | Improve the country's infrastructure                         |
| 47 | Create and foster a skilled workforce                        |
| 37 | Reduce poverty and inequality                                |
| 21 | Secure natural resources that are critical to business       |
| 21 | Maintain the health of the workforce                         |
| 17 | Address the risks of climate change and protect biodiversity |

Source: PwC, 15th Annual Global CEO Survey 2012 (all respondents 1,258) (Jan 2012)

Cities of opportunity

How the cities rank – Emerging economies still have lots to catch up on



Each city’s score (here 1,112 to 515) is the sum of its rankings across variables. The city order from 27 (highest rank) to 1 is based on these scores.

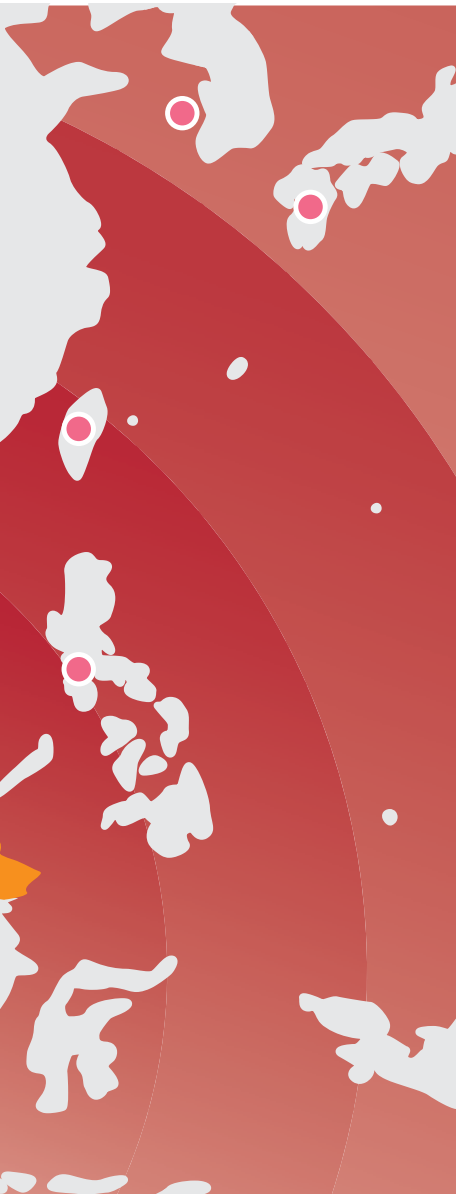
Source: PwC, “Cities of Opportunity” (Oct 2012); Oxford Economics



| Economic clout                       | Ease of doing business               | Cost                                 | Demographics and livability         | City gateway                         | Score |
|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|-------|
| <div><div></div><div>119</div></div> | <div><div></div><div>182</div></div> | <div><div></div><div>70</div></div>  | <div><div></div><div>59</div></div> | <div><div></div><div>121</div></div> | 1,112 |
| <div><div></div><div>119</div></div> | <div><div></div><div>181</div></div> | <div><div></div><div>71</div></div>  | <div><div></div><div>72</div></div> | <div><div></div><div>145</div></div> | 1,111 |
| <div><div></div><div>98</div></div>  | <div><div></div><div>175</div></div> | <div><div></div><div>89</div></div>  | <div><div></div><div>75</div></div> | <div><div></div><div>69</div></div>  | 1,096 |
| <div><div></div><div>120</div></div> | <div><div></div><div>137</div></div> | <div><div></div><div>58</div></div>  | <div><div></div><div>82</div></div> | <div><div></div><div>143</div></div> | 1,073 |
| <div><div></div><div>83</div></div>  | <div><div></div><div>161</div></div> | <div><div></div><div>86</div></div>  | <div><div></div><div>73</div></div> | <div><div></div><div>55</div></div>  | 1,062 |
| <div><div></div><div>76</div></div>  | <div><div></div><div>154</div></div> | <div><div></div><div>86</div></div>  | <div><div></div><div>76</div></div> | <div><div></div><div>85</div></div>  | 1,061 |
| <div><div></div><div>110</div></div> | <div><div></div><div>202</div></div> | <div><div></div><div>71</div></div>  | <div><div></div><div>75</div></div> | <div><div></div><div>99</div></div>  | 1,045 |
| <div><div></div><div>99</div></div>  | <div><div></div><div>198</div></div> | <div><div></div><div>78</div></div>  | <div><div></div><div>78</div></div> | <div><div></div><div>108</div></div> | 1,015 |
| <div><div></div><div>67</div></div>  | <div><div></div><div>158</div></div> | <div><div></div><div>93</div></div>  | <div><div></div><div>67</div></div> | <div><div></div><div>88</div></div>  | 997   |
| <div><div></div><div>92</div></div>  | <div><div></div><div>156</div></div> | <div><div></div><div>51</div></div>  | <div><div></div><div>59</div></div> | <div><div></div><div>111</div></div> | 974   |
| <div><div></div><div>90</div></div>  | <div><div></div><div>147</div></div> | <div><div></div><div>54</div></div>  | <div><div></div><div>78</div></div> | <div><div></div><div>77</div></div>  | 964   |
| <div><div></div><div>68</div></div>  | <div><div></div><div>135</div></div> | <div><div></div><div>124</div></div> | <div><div></div><div>74</div></div> | <div><div></div><div>72</div></div>  | 955   |
| <div><div></div><div>59</div></div>  | <div><div></div><div>160</div></div> | <div><div></div><div>99</div></div>  | <div><div></div><div>65</div></div> | <div><div></div><div>92</div></div>  | 954   |
| <div><div></div><div>81</div></div>  | <div><div></div><div>146</div></div> | <div><div></div><div>108</div></div> | <div><div></div><div>37</div></div> | <div><div></div><div>82</div></div>  | 915   |
| <div><div></div><div>76</div></div>  | <div><div></div><div>136</div></div> | <div><div></div><div>96</div></div>  | <div><div></div><div>55</div></div> | <div><div></div><div>115</div></div> | 903   |
| <div><div></div><div>90</div></div>  | <div><div></div><div>111</div></div> | <div><div></div><div>71</div></div>  | <div><div></div><div>51</div></div> | <div><div></div><div>69</div></div>  | 827   |
| <div><div></div><div>125</div></div> | <div><div></div><div>80</div></div>  | <div><div></div><div>79</div></div>  | <div><div></div><div>48</div></div> | <div><div></div><div>135</div></div> | 769   |
| <div><div></div><div>64</div></div>  | <div><div></div><div>154</div></div> | <div><div></div><div>106</div></div> | <div><div></div><div>53</div></div> | <div><div></div><div>87</div></div>  | 761   |
| <div><div></div><div>118</div></div> | <div><div></div><div>56</div></div>  | <div><div></div><div>83</div></div>  | <div><div></div><div>40</div></div> | <div><div></div><div>123</div></div> | 729   |
| <div><div></div><div>95</div></div>  | <div><div></div><div>62</div></div>  | <div><div></div><div>77</div></div>  | <div><div></div><div>50</div></div> | <div><div></div><div>87</div></div>  | 712   |
| <div><div></div><div>60</div></div>  | <div><div></div><div>117</div></div> | <div><div></div><div>102</div></div> | <div><div></div><div>43</div></div> | <div><div></div><div>57</div></div>  | 673   |
| <div><div></div><div>68</div></div>  | <div><div></div><div>89</div></div>  | <div><div></div><div>90</div></div>  | <div><div></div><div>57</div></div> | <div><div></div><div>16</div></div>  | 650   |
| <div><div></div><div>67</div></div>  | <div><div></div><div>60</div></div>  | <div><div></div><div>80</div></div>  | <div><div></div><div>48</div></div> | <div><div></div><div>41</div></div>  | 597   |
| <div><div></div><div>61</div></div>  | <div><div></div><div>78</div></div>  | <div><div></div><div>102</div></div> | <div><div></div><div>34</div></div> | <div><div></div><div>85</div></div>  | 578   |
| <div><div></div><div>42</div></div>  | <div><div></div><div>102</div></div> | <div><div></div><div>100</div></div> | <div><div></div><div>46</div></div> | <div><div></div><div>39</div></div>  | 534   |
| <div><div></div><div>67</div></div>  | <div><div></div><div>88</div></div>  | <div><div></div><div>57</div></div>  | <div><div></div><div>49</div></div> | <div><div></div><div>50</div></div>  | 527   |
| <div><div></div><div>82</div></div>  | <div><div></div><div>59</div></div>  | <div><div></div><div>93</div></div>  | <div><div></div><div>23</div></div> | <div><div></div><div>30</div></div>  | 515   |

- High
- Medium
- Low
- Highest rank in each indicator
- Cities in emerging economies





# Special focus: Iskandar Malaysia

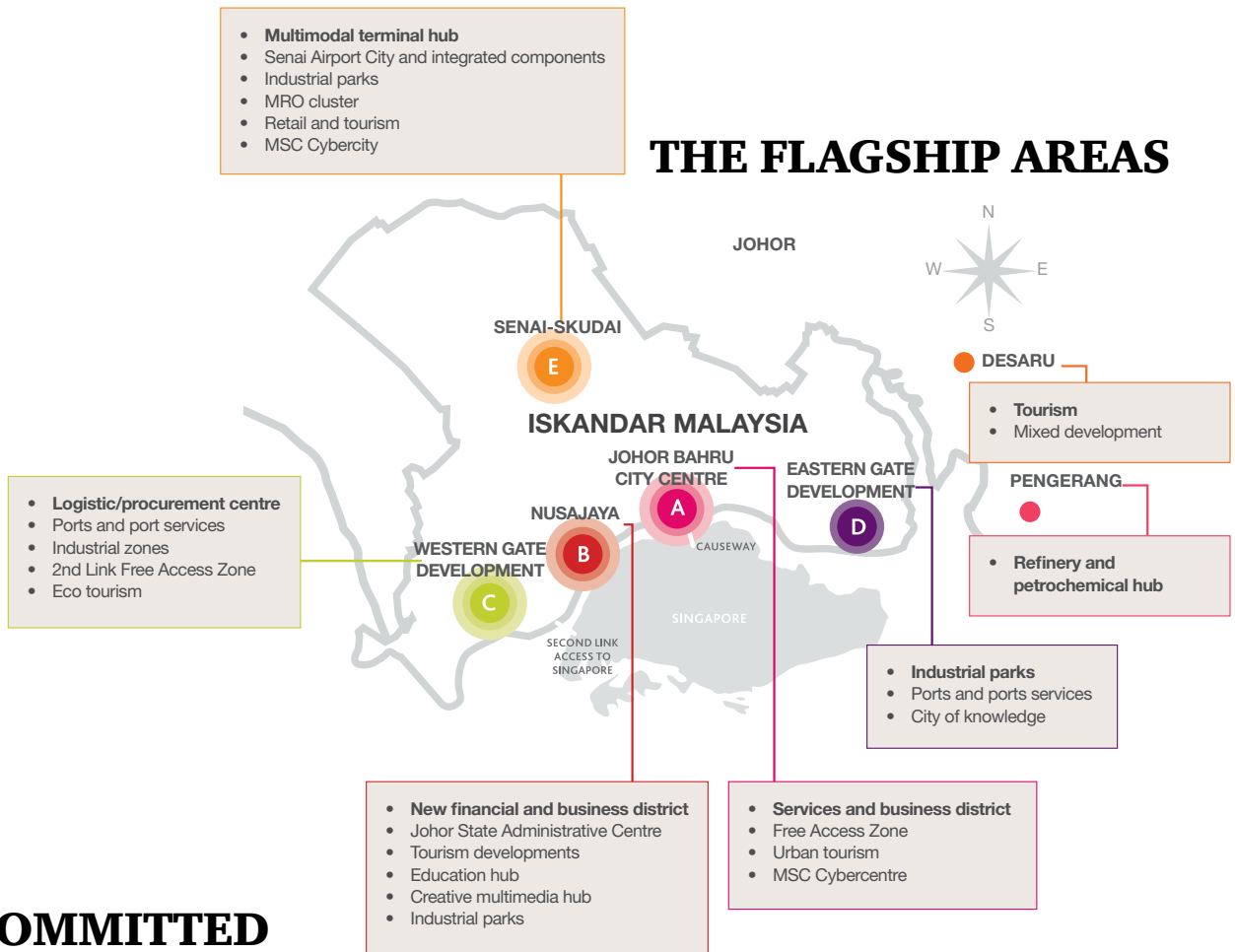
## Malaysia's key growth corridor and southern gateway to Asia

Iskandar Malaysia's strategic geographic position along some of the world's busiest shipping routes, its proximity to an international hub and the large markets of Indonesia, Singapore, and further out China and India, with its endowment of natural and human resources, underpins Iskandar Malaysia's potential growth.

Iskandar Malaysia also provides opportunities for investors to invest in the Indonesia-Malaysia-Singapore Growth Triangle (IMS-GT), with strategic air and sea access to other Asia-Pacific countries, India and the Middle-East.

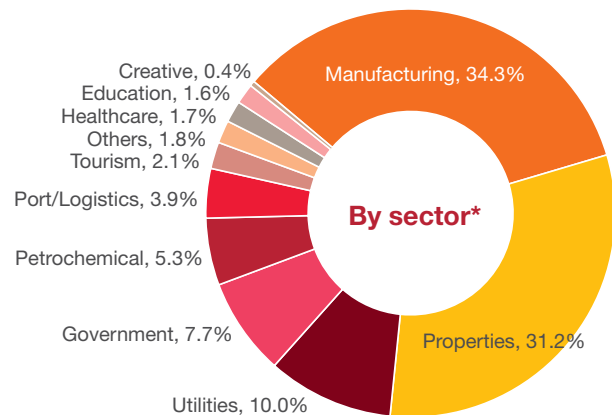
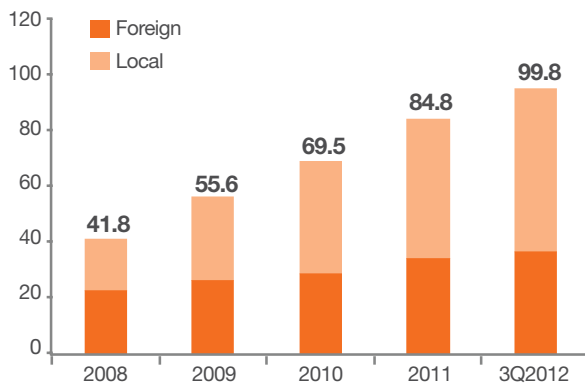
In view of existing and potential growth dynamics, supported by world-class multi-modal transport and ICT servicing the world, and the availability of a wide range of attractive fiscal and non-fiscal incentives, Iskandar Malaysia is an outstanding and emerging metropolis to consider investing in.

## THE FLAGSHIP AREAS



## COMMITTED INVESTMENTS

RM billion



\*Cumulative up to Sept 2012 (indicative only)

Source: Economic Report 2012/2013; IRDA newsletters

# TARGETS

RM47 bln investments

2010

**RM99.8bln investments achieved**

(as at 3rd Quarter 2012)

2012

# RM73 bln investments

2015

# RM107 bln investments

2020

# RM155 bln investments

GDP (PPP): US\$ 93.3 bln  
GDP per capita: US\$ 31100  
Population: 3.0 mln  
Labour force: 1.5 mln

2025

## Some foreign players already in the priority sectors

### Education

- Newcastle University Medical School (UK)
- University of Southampton (UK)
- University of Reading (UK)
- Netherlands Maritime Institute of Technology (NED)
- Singapore Management Development Institute (SG)
- Raffles University (SG)
- Excelsior International School (SG)

### Healthcare

- Gleneagles (SG)
- Columbia Asia (IND)
- Temasek (SG)

### Tourism

- Merlin Entertainments (UK)
- HIT Entertainment (UK)
- Sanrio (JPN)
- Simon Property Group (US)

### Business services

- HSBC (UK)
- Citigroup (US)
- Frost & Sullivan (US)
- Kuwait Finance House (KW)

### Property developments

- Mubadala Development (UAE)
- Aldar Properties (UAE)
- The Ascott (SG)

### Electrical and electronics

- Dyson (US)
- Flextronics (US)
- STX Energy (KOR)
- EQ Solar (CHN)
- Matsushita (JPN)
- Western Digital (US)

### Logistics

- Maersk (DEN)
- Schenker (GER)
- Evergreen (TWN)
- Naigai Nitto (SG)
- BMW (GER)
- DHL Express (GER)

### Petrochemical and Oleochemical

- Royal Vopak (NED)
- Vitol Tank Terminals International (NED)
- Trafigura (NED)

### Food and agro-processing

- Biocon (IND)
- Strides Arcolab (IND)
- Metabolic Explorer (FRA)
- GlycosBio (US)

### Creative services

- Pinewood Shepperton (UK)

MRO - Maintenance, repair and overhaul; MSC - Multimedia Super Corridor; DEN - Denmark; GER - Germany; IND - India; JPN - Japan; KOR - South Korea; KW - Kuwait; NED - Netherlands; SG - Singapore; TWN - Taiwan; UAE - United Arab Emirates; UK - United Kingdom; US - United States of America

# Original Masterplan targets

Source: Various news; Comprehensive Development Plan for South Johor Economic Region 2006-2025







# Food for thought

- 1** Technology & innovation: The DNA for success
- 2** Waqf: Managing funds beyond finance
- 3** Living sustainably: The halal green business
- 4** From response, risk reduction to building resilience: Disasters and the role of the private sector

## Technology & innovation: The DNA for success

*Contributed by:*

- *Dr Lerwen Liu, Managing Director*
- *Dr Jing Jiang, Senior Analyst*
- *Dr Mark Foley, Senior Consultant*

*NanoGlobe Pte Ltd*

The genesis of nanotechnology can be traced back to Richard Feynman's famous lecture "There's Plenty of Room at the Bottom" which he delivered to the American Physical Society in 1959. This lecture has inspired scientists and engineers worldwide to develop technologies to image and manipulate atoms and molecules, and to fabricate structures and devices atom by atom, molecule by molecule.

Today nanotechnology is commonly defined as the understanding and control of matter at nanoscale dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications. Encompassing nanoscale science, engineering, and technology, nanotechnology involves imaging, measuring, modeling, manipulating and fabricating matter at this scale. A nanometer is one-billionth of a meter. A DNA molecule is about 2.2 nanometers wide, the typical size of bacteria is in the order of 1000 nanometers (1 micrometer) and the size of human hair is about 100 micrometers.

Nanotechnology is on its way to revolutionise how we make things and change the way we live. It is able to transform multiple industries including aerospace, agriculture, automotive, chemical, energy and environment, food, information and communication, medicine and health care, security and transportation.

Nanotechnology offers so many possibilities such as providing cheap and clean energy, clean water, lighter and stronger materials, faster, more powerful and energy efficient computers, an exponential increase in information storage capacity and transmission speed, lotus-like self cleaning surfaces, butterfly wing structural colors, the reduction or elimination of pollution, and early detection and treatment for cancer and other diseases.

The word “Nano-technology” was coined in 1974 by Norio Taniguchi (a professor at the Tokyo Science University in Japan) where he defined the process that consists of the processing, separation, consolidation, and deformation of materials at the level of one atom or one molecule. Manufacturing (in Japanese is "Monotsukuri", means making things) has been a focus of the Japanese industry policy.

**It is known that nanotechnology enables the transformation of advanced manufacturing to make better, cheaper, and greener products.**

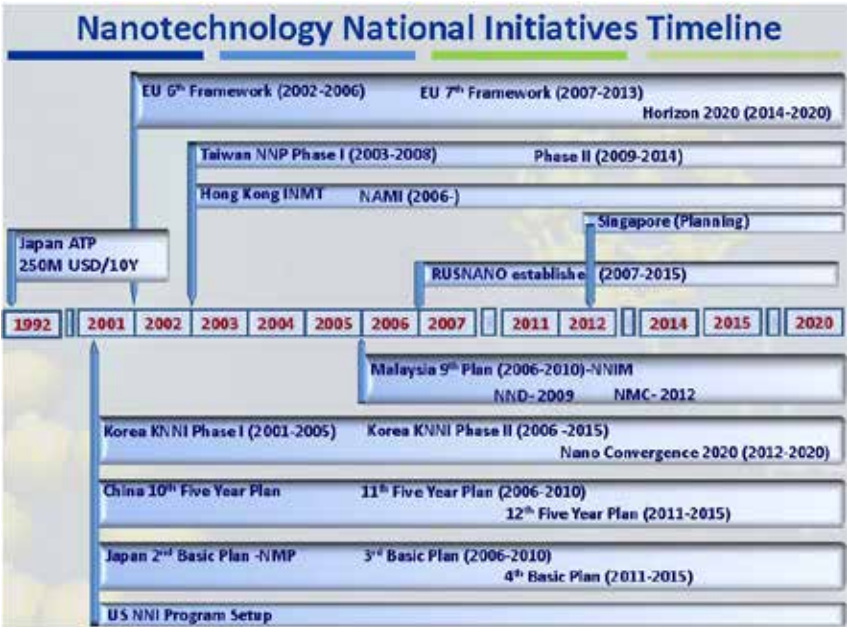
For the last two decades, Japan has been committed to the use of nanotechnology in manufacturing to stay ahead of its competitors. Today, economies in Asia including South Korea, Taiwan, and mainland China are making significant progress in adopting nanotechnology in their manufacturing.

Since 1999 there have been significant changes in nanotechnology development worldwide. The announcement of the US National Nanotechnology Initiative (NNI) on 21st January 2000 created a strong response from the rest of the world, with a number of countries placing nanotechnology as a priority area in their science and technology policy.

Figure 1 shows the timeline of national nanotechnology initiatives and programmes in the 15 economies reviewed in this article with reference to the US NNI and the European Commission (EC)'s 6th Framework Program (FP6) where “Nanotechnologies and Nanosciences, Knowledge-based Multifunctional Materials, New Production Processes and Devices” was included as one of the seven priority thematic areas.

In 2001, Japan, China and New Zealand all began major programs focusing on nanomaterials. The following year, Korea, Taiwan, Thailand, Australia, Hong Kong and Vietnam launched national and regional nanotechnology initiatives. Subsequently in 2006, Iran launched its national nanotech initiative program, followed by Malaysia and Indonesia.

Figure 1: Timeline of national nanotechnology initiatives and programs in the leading economies



As funding has experienced a significant increase over the past decade, nanotechnology is becoming mature for commercialisation.

The Russian government intends to take a leadership position by launching a ten-year, USD 5 billion nanotechnology commercialization initiative in September 2007 managed by the Russian Corporation of Nanotechnologies (RUSNANO).

## **Nanotechnology commercialisation opportunities**

Scientists and engineers today are able to make all kinds of nanomaterials and nanostructures in metals, polymers, oxides, carbons, semiconductors, and other materials.

**Nanocarbon materials are the most appealing today for their far superior properties in strength and conductivity.**

Nanocarbon materials include graphene, carbon nanotubes and fullerene. There is great focus on graphene and carbon nanotubes as, due to commercial availability and superior properties, they are being implemented into multifunctional materials and products today.

Graphene is a single sheet of graphite and is most easily visualised as an atomic scale honeycomb lattice made of carbon atoms. Graphene is also the basic structural element of carbon nanotubes and fullerenes. The Nobel Prize in Physics for 2010 was awarded to Andre Geim and Konstantin Novoselov at the University of Manchester "for groundbreaking experiments regarding the two-dimensional material graphene".

When graphene sheet(s) roll into cylindrical nanostructures, they are called buckytubes, more commonly called Carbon Nanotubes (CNT), when a graphene sheet forms a hollow sphere, it is called buckyballs.

**Nanocarbon materials (CNT and Graphene) are known to be 5-7 times stronger than steel, 10 times more thermally conductive than copper, 1000 times more capacity to carry electric current than copper.**

These amazing properties of nanocarbon materials have been utilised by scientists and engineers in realising multifunctional materials such as conductive and stronger plastics; high performance composites and tires; battery and super capacitor electrode materials; high performance cements; multifunctional coatings for windows, steel etc; and many more.

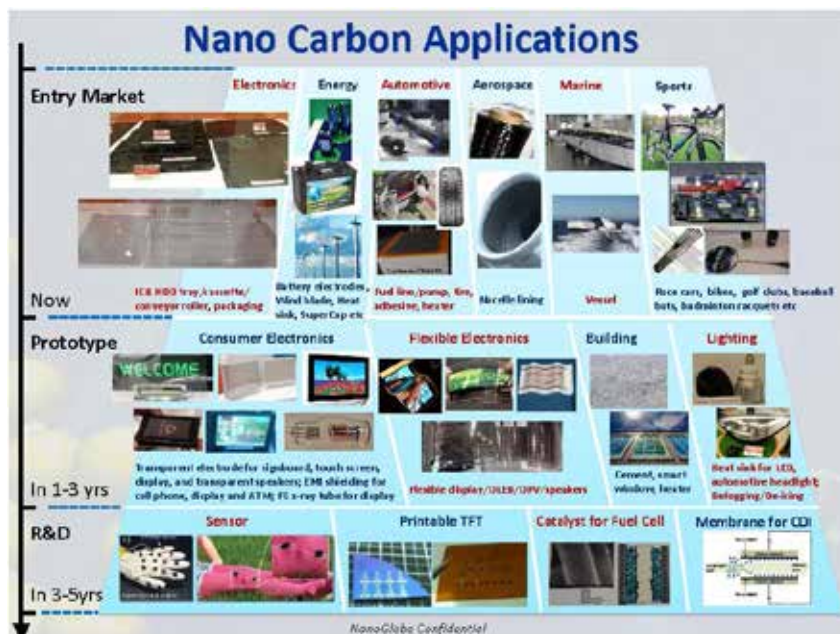
Nanocarbon materials can be flexible and transparent which can be used as electrode materials in touch screens, LEDs, solar cells and the emerging flexible electronics industry. See Figure 2 for more examples of nanocarbon material adoption today, and within 5 years from now in different industries.

**Nanotechnology promises 'consuming less for more' due to the superior properties of its nanostructured materials, as well as lower energy consumption and greener manufacturing processes. Nanotechnology offers cost and performance competitiveness in products and in many cases offering a game changer solution.**

We see enormous business opportunities for industry leaders and investors as nanotechnology has entered our daily life through various consumer electronics, automotive, aerospace, sporting goods, marine, water and energy industries. And it is entering construction and healthcare in the next few years.

Please join our session "The business of nanotech: Sizing up opportunities" at 2:30-4pm Dec. 5th, 2012 at Hall 2, Level 3, Persada Johor International Convention Centre, Johor Bahru to learn more details. For those who are interested in the Asian efforts in Nanotechnology, please refer to the book "Emerging Nanotechnology Power: Nanotechnology R&D and Business Trends in Asia Pacific Rim" which can be ordered online at [www.worldscibooks.com/nanosci/7224.html](http://www.worldscibooks.com/nanosci/7224.html).

Figure 2: Examples of Nano Carbon adoption and applications within 5 years





**Dr Lerwen Liu**  
Managing Director,  
NanoGlobe Pte. Ltd.



Dr Lerwen Liu is an Asian nanotechnology expert, specialising in nanotech business development, policy and internationalisation strategy and execution. She is the Managing Director of NanoGlobe, a unique nanotech business consultancy in Asia that provides technical-market-business intelligence and business development execution for high level industry, R&D and government leaders worldwide.

She is also the Founding Secretary of the Asia Nano Forum, a nanotechnology society linking 15 Asia Pacific economies. She serves as an advisor/mentor/consultant for various governments, R&D institution and companies in Asia, USA and Europe.

She is a Strategic Advisor and a Founding Director of Nanostart Asia and has played a vital role in setting up Nanostart AG's Singapore fund, investment and operation. She published her first book titled "Emerging Nanotechnology Power-Nanotechnology R&D and Business Trends in the Asia Pacific Rim" in May 2009. Together with her team of analysts, she continues to publish writings to update on Nanotech R&D and business trends in Asia.

Dr Liu has a PhD in Physics, specialising in many-body effects and transports in semiconductor nanostructures, and has conducted research work in Australia, Japan, USA and Italy. She is fluent in Chinese and English; reads technical Japanese and speaks conversational Japanese and Italian.

**Dr Mark Foley**  
Senior Consultant,  
NanoGlobe Pte. Ltd.



Dr Mark Foley is a Senior Consultant of NanoGlobe Pte. Ltd. based in Japan. Born in Australia, he has lived in Japan for 20 years. At NanoGlobe he brings his strategic mind, and in-depth market and technical knowledge and experience, to on-the-ground business development. He is the key driver for NanoGlobe business growth in Japan and China with his multi-lingual skills and multi-cultural experience coupled to his technology and business mind.

Prior to NanoGlobe, Dr Foley worked in the semiconductor business of Fujitsu Limited, focusing on strategy and business development.

Dr Foley received his Doctor of Philosophy (Ph.D) in physics from The University of New South Wales, Australia for semiconductor nano-device research done at The University of Tokyo, Japan.

**Dr Jing Jiang**  
Senior Technology Analyst,  
NanoGlobe Pte. Ltd.



Dr Jing Jiang is currently a Senior Technology Analyst at NanoGlobe Pte. Ltd. executing NanoGlobe business in the areas of nanotechnology comparative analysis, capability assessment, commercialisation readiness assessment, a business development, event planning and coordination, strategic marketing and communication and education.

She specialises in nanocarbon, energy, membrane technologies, MEMS, biomimetics and other emerging fields. Dr Jiang is a key driver for NanoGlobe China business with her multilingual skills coupled with her technical and strategic mind.

Prior to joining NanoGlobe, Dr Jiang has had 3 years academic research experience on the synthesis, characterization and optical property analysis of quasi one-dimensional nano-materials and 4 years research experience on the magnetic and electrical reliability of GMR spin-valve spintronic devices.

Dr Jiang received her PhD in Electrical Engineering at National University of Singapore, and obtained her Master and Bachelor of Engineering degrees in Materials Science and Engineering from the Hefei University of Technology in China.

## Waqf: Managing funds beyond finance

*Contributed by:  
Tan Sri Dzulkifli Abdul Razak  
Vice Chancellor,  
Albukhary International University*

“Waqf” (Arabic: وقف, pronounced [waqf]; plural Arabic: أوقاف, awqāf) essentially means a voluntary and irrevocable dedication of a portion of one’s wealth in cash or kind in the path of Allah. The benefits of such an act can be utilised for any shari’ah-compliant purpose in such a manner that its benefits may revert to or be applied “for the benefit of humankind”.

**Broadly, waqf can be categorised into “religious” and “philanthropic” waqf.**

The former was first established in the form of the Quba’ mosque in Madinah built upon the arrival of the Prophet Muhammad PBUH in 622. The mosque is still standing on the same property, and since then, has been further redeveloped. Other forms of “religious” waqf include real estate established to provide revenue for maintenance and running expenses of mosques and other religious institutions.

The “philanthropic” waqf however is to support the poor and destitute. The legal meaning of waqf according to Imam Abu Hanifa, is said to be the detention of specific thing in the ownership of waqif and the devoting of its profit or products “in charity of poors or other good objects”. This

includes all activities which are beneficial or of interest to society at large such as libraries, educational institutes, health care facilities, orphanages and other public infrastructure including parks, roads, bridges and dams. The first of such waqf started when a man called Mukhairiq made his will that his seven orchards in Madinah be given after his death to Prophet Muhammad PBUH. Upon the passing of Mukhairiq, the Prophet Muhammad PBUH took hold of the orchards and made them a charitable waqf for the benefit of the poor and needy.

This practice was followed by the companion of the Prophet PBUH and his second successor Umar RA, who asked the prophet what to do with a palm orchard he acquired in the northern Arabian peninsula city of Khaibar and the Prophet Muhammad PBUH said: “If you like, you may hold the property as waqf and give its fruits as charity.”

### Why Waqf?

As waqf is a concept which resembles a form of “endowment” where the ownership of assets is transferred to a juristic body in perpetuity, it therefore provides a sustainable solution for the designated beneficiaries.

**Businesses therefore can evolve through the waqf ecosystem to manage the assets and the fruits of the assets for the said purpose. This can be facilitated by enacting the appropriate legal instrument that allows this to be done so that the waqf can be properly regulated and governed according to the Shariah without compromising on the concept of waqf.**

It has been noted that there is often no complete consensus on some of the legal principles concerning waqfs, creating areas of uncertainty causing waqf being less frequently used as a vehicle especially for large asset management and businesses. These are some of the challenges that must be met and improved. There must be a coherent management and governance structure that is Shariah compliant put in place that also deals with the question of risks management.

In so doing the possibility of using waqf for other emerging needs like education can be expanded and revived in a sustainable way.

### **Waqf for education**

From the early days of Islam, education has been financed through waqf, infaq and sadaqah. The Islamic rulers then have been known to finance education by assigning certain properties as waqf of the educational institutions. Generally, education has been the second largest beneficiary and receiver of waqf revenues. Some examples go back to the times of Awqaf of the Ayubites (1171-1249) and the Mamalik (1249-1517) in Palestine and Egypt.

As late as the beginning of the twentieth century, Jerusalem had 64 waqf schools which were supported by awqaf properties in Palestine, Turkey and Syria. Another oft-quoted example is the University of al Azhar. The University was founded in Cairo in 972 and was initially financed by its waqf. So too was the first university in the world which according to UNESCO is the Al-Qarawiyyin University (<http://www.muslimheritage.com/topics/default.cfm?ArticleID=447>) in Fes, Morocco endowed by a lady, Fatima al Fitr, more than a century before al Azhar.

Other prominent tertiary education institutions that were founded and maintained using waqf lands are the University of Cordova in Andalusia, and in Asia, Universitas Islam Indonesia in Jogjakarta, Indonesia. The youngest university in Malaysia, the Albukhary International University is a waqf financing institution and it is not restricted to religious studies only.

**Of late, a new Islamic endowment fund to be used specifically to finance Islamic education was launched in Singapore. It is named Wakaf Ilmu. The new fund will allow any individual to donate cash, no matter how small an amount.**

In Muslim minority countries, in particular, waqf financing can benefit the establishment of stand alone facilities such as campuses, libraries, research centres and/or the associated operational expenses such as salaries of teachers and other staff and stipends to students. The waqf estate and revenue can also be used to cover a wide range of other activities through the setting up of educational foundations, with a principal purpose of making grants to organisations, institutions, or individuals for educational and other related activities.

## Expanding the waqf framework in Malaysia

Traditionally, waqf in Malaysia is in the form of land, mosques and surau and religious schools and its facilities. In the recent budget announcement, however, initiatives were taken to recognise the State Islamic Religious Council (SIRC) as the sole trustee for all waqf and waqf funds in respective states. Waqf institutions in Malaysia do not only focus on land development but also on corporate wakaf in the form of cash, shares and other financial instruments. In line with this, the Malaysian Wakaf Foundation (Yayasan Wakaf Kebangsaan: YWK) under the Department of Awqaf, Zakat and Hajj (Jabatan Wakaf, Zakat dan Haji: JAWHAR) will be responsible

to formulate the Corporate Wakaf master plan, taking into consideration the SIRC legislative structure. The master plan will be the platform for the development of Corporate Wakaf in Malaysia.

The Malaysian Government has earlier established JAWHAR to assist the SIRC whereas YWF is to develop and grow waqf estates and funds across the country through collaboration with the SIRC and to organise welfare and social programs utilising the waqf funds. In general, all matters related to Islamic Affairs, including waqf are under the purview of either the Sultan or the King (Agong). In most states, laws have been passed or enacted to govern the waqf, and generally, the laws stipulate

SIRCs to be the 'sole trustee of waqf assets'. The SIRCs establish rules related to administration and distribution of income of the waqf assets. Under Article 74 (2) of the Federal Constitution of Malaysia, waqf estates are included in the Islamic Religious Administration Enactment of the States and exempt from the National Land Code.

Of late, there has been a call for the establishment of a waqf fund for higher education as in some countries such as Turkey and Egypt. Along side this, another category – the Waqf Higher Education Institution, as a not-for-profit organisation, could be envisaged for the purposes of benefiting more directly from such a fund.

In summary, the time has come to look into waqf as yet another Islamic instrument to push the boundaries of managing funds beyond finance, not only for the Muslims, but also the deserving non-Muslims alike. The deeper understanding, innovative management and administration of the waqf as a potential institution to be mainstreamed worldwide is therefore an urgent issue to be resolved globally.



Prof Tan Sri Dato' Dzul kifli Abdul Razak is the Vice-Chancellor of the Albukhary International University. Prior to this, he was the 5th Vice-Chancellor of Universiti Sains Malaysia (USM) and held the office from 2000-2011.

He is also the 1st Vice-President of the International Association of Universities (IAU), a UNESCO-affiliated organisation. His other involvements include being on the Asia-Europe Meeting (ASEM) Advisory Education Hub Committee, Executive Council of the Association of Commonwealth Universities (ACU) and Advisory Committee of the World Universities Forum, Davos (2008). He has also served as a member of the World Health Organisation (WHO) Expert Advisory Panel on Drug Policy and Management; and the WHO Scientific Committee of Tobacco Product Regulation.

More recently, he was made Chair of Independent Review Panel on Education for Malaysia, beginning 2012. He is also the Co-editor of the People's Sustainability Treaty on Higher Education that was launched in conjunction with the Rio+20 Conference at Rio de Janeiro, June 20-22, 2012.

He has been a weekly columnist for the New Straits Times since 1995 writing mainly on issues about education, science, and current events and received a number of national, including honorifics, and international accolades for his work and services rendered to the community. He has, in various capacities, been on various national boards, advisory council, committees and foundations related to education, IT, innovation, technology and economic development. He is married with four children.



## Living sustainably: The halal green business

*Contributed by:  
Ibrahim Abdul Matin  
Environmental Policy Consultant &  
Author of “Green Deen: What Islam  
Teaches about Protecting the Planet”*

We have an incredible opportunity to align our core business, our deen of Islam, and environmental sustainability practices to maximise growth and build value for our companies. This alignment will also build value for company shareholders and customers, while simultaneously protecting the planet and its people, resulting in a true “Halal Green Business.”

A Halal Green Business is one in which our faith is infused into our intentions, processes, operations, procurement, marketing, sales and execution. We have a sacred tradition of caring for the land, fair treatment for workers, livestock and protecting the integrity of our soil, water and air.

**Environmental sustainability, in an Islamic context, is doing what is good for the planet, the people and all living things, while praising God and abiding by His law.**

At minimum, we should be aware of the dangerous by-products of overconsumption and overgrazing and how that has polluted the natural world and be diligent to minimise our negative impacts on the planet.

The fact is, we all want to make money. We all want to be rich. And most of us God fearing people of conscience, want to earn this living in a Halal, and increasingly so, green way.

Aligning Islam and sustainability means that you can build that Halal Green Business - one that allows the Earth's resources to replenish and future generations to benefit from these resources even more than we have.

You can do it in two easy steps:

1. Leave the Earth better than you found it
2. Be an agent of change.

### Step one...

To leave the Earth better than you found it closely aligns with the role of prophets: to leave human beings better than they found them. Abraham, Moses, Jesus and Muhammad (among many others), peace and blessings be upon them all, brought messages and teachings to improve the state of their people. The Prophetic tradition is to improve the condition of oneself and of the people of their time. We should embrace this tradition.

### Step two...

To be an agent of change, is presented in the Qur'an, an interpretation of the meaning of the text states: "Truly, God does not change the condition of a people until they change what is in themselves" (Qur'an 13:11). As pioneers of business, innovators, thought leaders and economic developers, we cannot wait for God to build our companies and develop and grow our Halal green businesses. Our prayer and application of Islam is essential but it must be combined with action. Our faith is not monastic. It is one of deep engagement and interaction in all aspects of life: government, community, and commercial - in each sector we must be stellar examples.

### Some self assessment time...

Think deeply about your current business and answer the following questions truthfully. If you are not a business owner, think about the products and services that you use each day:

1. How much do you know about the supply chain? How much do you know about the removal chain? If you know more about the former than the latter, why?
2. Do you know the full lifecycle of your product(s)?

Answering these questions will get you started on establishing a true Halal green business. There are no easy answers and you must be truthful to yield helpful data about your company and product(s). This data can then be used as a benchmark to monitor your success in the future.

This is hard work. A team from the Massachusetts Institute of Technology wanted to learn about the removal chain for a variety of products. They designed a tracking device to follow various pieces of trash in a multi-year study in the United States. The goal was to understand where certain materials go when they are “thrown away.” They learned that there is no “away.”

Trash is a commodity like everything else – there is a lot of value in it. Many of the materials that they tracked, paper for example, was intercepted by innovative people and repurposed for use in other nations as packaging.

**For your purposes as a Halal green business, you have to work to understand how to recapture materials from your production processes because there is value in trash that you don’t want to lose to a landfill.**

**Here is another critical question: How can we do things better than they have ever been done before?**

We should focus on the future instead of the past. Over 100 years ago coal, oil, and gas were considered “state of the art.” Today’s “state of the art” is solar, wind, and waste-to-energy technology. Throughout history we have chosen oils, timber, metals and other items as inputs into our production facilities. We will likely continue using such materials well into the future.

But what else can we use? There are, for example, carpet companies that are choosing to use recycled tire materials to weave lush rugs. New businesses are springing up to connect unused supply with demand (customers) that are unaware that this supply exists, like Google Wallet. There are many ways that we can better use the materials we currently use while simultaneously discovering the non-polluting materials of the future.

**Where is the opportunity of the future?**

The emerging technologies in the fields of medicine, energy, computer science, nanotechnology, and bioinformatics are perfect places to build Halal green businesses. Additionally, polymer scientists - those with expertise in breaking down plastics to their essential components and reconstructing them into viable products - have excellent opportunities to reduce waste and build useful products, which are important components of the Halal green business. Other growth areas include Halal eco-tourism, water quality management and permaculture techniques that can turn war-torn deserts into blooming gardens.

What are some practical steps that your business can take to start becoming Halal and green? The following list is a small sampling of some specific action items:

### Water

- Post signs around your facility to encourage employees to use less water
- Regularly check for and repair all leaks in your facility
- Train your staff to monitor and respond immediately to leaking equipment
- Test irrigation systems quarterly for leaks, water runoff, over watering and dry spots - make necessary adjustments to ensure proper operation and coverage
- Modify your existing irrigation system to include drip irrigation, where feasible
- Install low flow, self-closing faucets, either infrared or spring-loaded
- Label all storm water drains with a message such as “No dumping – Protect our Bay and Ocean/River”

### Waste

- Keep a stack of previously used paper near printers. Use it for drafts, scratch paper or internal memos or designate a draft tray on printers with multiple trays
- Make two sided printing and copying standard practice in your business (set copier to default to duplex or double-sided printing or manually feed to duplex printing)
- Select products with the least packaging and/or which have easily recyclable packaging
- Set up an ongoing system to recycle. Make it easy for employees to recycle by placing clearly marked collection bins in convenient locations
- For shipping items, use shredded paper for packaging needs instead of purchasing Styrofoam pellets, bubble wrap or other packing

materials. If you receive these, reuse them in your own packaging

- Donate or exchange unwanted but usable items (furniture, supplies, electronics, scrap materials, computer disks, etc.) to schools, churches, hospitals, libraries, etc.

### Energy

- Use or invest in renewable energy
- Set all computer monitors to turn off after 10 minutes of inactivity. Use power strips to easily power down all unused electronics at the end of the work day
- Perform regular maintenance on your HVAC (heating, ventilation and air conditioning) and refrigeration systems
- Plant native shrubs or trees near windows for shade
- Use a solar water heater or pre-heater

- Institute a written policy that ensures blinds and curtains are closed during peak summer period (white reflects) or use ceiling fans to reduce air-conditioning load
- Buy rechargeable batteries and appliances

### Transportation

- Encourage bicycling to work by offering rebates on bicycles bought for commuting
- Convert company vehicles to low-emission cars, using natural gas, electricity or alternative fuels

### Marketing

- Highlight your efforts on your website
- Inform your customers about your business' environmental efforts

### Culture

- Implement a protocol for employee suggestions for efficiency
- Comply with all environmental regulations applicable to your business
- Patronise services close to your business
- Reduce or eliminate the use of chemical pesticide



Ibrahim is the author of 'Green Deen: What Islam Teaches about Protecting the Planet' and contributor to 'All-American: 45 American Men on Being Muslim'.

For over a decade, Ibrahim Abdul-Matin has been a passionate voice for the planet and its people. As a Lead Consultant with 'The Frontier Project', he moves through political and executive corridors finding integrated solutions to complex business and social challenges with a focus on positively shifting human behavior. He travels and speaks widely on issues of innovation, sustainability and social justice.

He began his career as an organiser and in 2002, Ibrahim was co-author of 'Future 500: Youth Organising and Activism in the United States'. He is a former Outward Bound instructor and helped to found the Brooklyn Academy for Science and the Environment. Ibrahim was a 2008 National Urban Fellow and former sustainability policy advisor to NYC Mayor Michael Bloomberg.

Ibrahim has blogged since 2004 as the 'Brooklyn Bedouin' and is a regular contributor on WNYC radio's nationally syndicated news show 'The Takeaway'. Ibrahim Holds a BA from the University of Rhode Island (where he allegedly played a little American football) and an MPA from Baruch College (NYC). He is a Brooklyn, NY, native.

## From response, risk reduction to building resilience: Disasters and the role of the private sector

*Contributed by:  
Tan Sri Dr Jemilah Mahmood  
Senior Research Fellow,  
Humanitarian Futures Programme,  
King's College London*

Disasters are the effect of hazards on society as a result of the combination of exposure and vulnerability. A disaster occurs depending on how vulnerable a population is exposed to hazard and this vulnerability can be reduced.

Over the past decade, more than two billion people have been affected by disasters.

**Between the years 2002 and 2011, 4,130 disasters were recorded, 1,117,527 lives were lost and resulting in 1,195 billion US dollars economic losses.**

There is no longer any doubt that the scale, frequency and severity of rapid onset disasters will continue to grow in the coming years at an accelerating pace.



Mankind has limited ability to prevent disasters and there are limited resources to respond to disasters as and when they occur. Thus, 'enhancing the status quo', by relying on humanitarian response, is insufficient. The scale of the challenge requires a shift in response to reducing risks and building resilience. There is also an urgent need to create capacity locally to prepare, withstand and recover from both catastrophic events and accumulating stresses.

A comparable paradigm shift is taking place in disaster risk management in recognition of the complexity and uncertainty generated by urbanisation and climate change. There is growing recognition that alongside hazard-specific measures to reduce

disaster risk, more emphasis needs to be placed upon tackling the underlying causes of vulnerability and developing generic adaptive capacity to respond to both catastrophic events and accumulating stresses. The goal is to create safer and more resilient communities that are able to adapt to changing circumstances, including being able to survive and recover from extreme events. Building resilience provides a complementary approach to traditional hazard-specific risk management that is applicable to systems, and accommodates the unknown and uncertain. It is therefore particularly relevant in addressing disaster risk in the context of complex urban environments and an uncertain future.

The complexity and dynamic nature of urban environments and uncertainty arising from climate change makes this necessary foresight unattainable; unexpected scenarios and surprises may be inevitable.

## The Private Sector in Disaster Management

The private sector in disaster management is a topic of much debate and conversation in recent years. The term private sector refers to that part of the economy that is owned and controlled by individuals and organisations through private ownership and also includes state owned enterprises under state capitalism, which are created by the government to undertake commercial activities, and commercial activity within the informal sector.

**Natural disasters affect all sectors of business, both directly and indirectly.**

Disasters can cause operational and supply chain disruptions through physical damage to property and/or loss of critical resources and infrastructure. Disasters also affect businesses' staff and customers, both economically and physically especially those living in affected areas.

For decades, the private sector has occupied a secondary place in humanitarian relief, providing goods and services to dominant humanitarian actors contracting their assistance. In recent times, the business community has started to respond unconventionally to needs arising from humanitarian emergencies, offering more than just logistical support or the delivery of

construction materials on a fee basis. This suggests that new forms of business engagement beyond humanitarian relief may be emerging.

Despite the recent increase in private-sector engagement in humanitarian assistance and disaster risk reduction activities, this remains very much a “niche phenomenon” at present. Collaboration among private sector and humanitarian organisations tends to be ad hoc and opportunistic. Companies often claim that their participation in such collaborative alliances is not primarily, if at all, motivated by financial incentives, but is rooted in a desire to demonstrate their corporate social responsibility and to share their core business competencies.

The types of engagement between private sector organisations in disasters can be broadly divided into four groups, a direct actor or through philanthropy and partnership:

- Financial support or in-kind donations of goods to humanitarian organisations.
- Partnership and collaboration with humanitarian organisations, such as based on provision of technical support services (e.g. logistics, ICT).
- Direct commercial engagement within the sphere of humanitarian response, crisis prevention or reconstruction.
- Direct commercial engagement outside this sphere i.e. for-profit business ventures in crisis affected populations.



### **The private sector's role in humanitarian response**

For the private sector, factors that usually determine which disaster to support whether through funding, in-kind contributions relevant to the situation and logistics support, largely rely on the location of the company's operations, its market position, and the humanitarian role it has created for itself and how that role relates to its own business interests.

**Disaster response to natural hazards in the form of in-kind contribution in the areas of logistics, shelter, food, water and sanitation, pharmaceuticals and information and communications technology are the most common and well-established area of private sector engagement in recent years.**

The events following the Indian Ocean tsunami in 2004 raised the need for a more strategic, structured and well budgeted rather than ad hoc response from the private sector. This led to a shift from the traditional cash and in-kind

response towards deployment of their core competencies on the ground, for example, through provision of technical expertise in the construction, planning and management of large-scale projects either directly or through partnership with affected Governments, United Nations agencies or NGOs.

**Often, the private sector is more familiar with the affected area and, as a result of its own business continuity planning, is therefore able to provide immediate effective aid.**

Aside from enormous cash donations, successful disaster relief requires the deployment and mass distribution of emergency supplies, nearly all of which are private goods necessitating private sector provision. With the private sector having “distributional networks already in place, organizational structures, equipment and practical knowledge”, they can play an important role, although government aid may be the first go-to when thinking about disaster relief.

### **The private sector’s role in recovery following disasters**

Perhaps the most influential role private companies play following a disaster is in the recovery phase following any disaster. Their own ability to prepare for and recover from disasters is crucial to not only protect their staff and assets but also to ensure business continuity. In fact, this action is also an important determinant of the resilience of a community recovering from a disaster.

Effective recovery efforts require the systematic engagement of commercial and humanitarian actors before a disaster event. This is often riddled with difficulties

with a resultant inability to agree on priorities within partnership and preparedness frameworks of private companies and humanitarian organisations. While measures are now being undertaken to define roles, responsibilities and methods of engagement, successful collaboration requires systematic engagement of private sector and humanitarian actors prior to any disaster event.

Recovery provides an opportunity to bring the private sector into humanitarian crises contexts and with a focus on sustainability, this allows and requires the private sector to be linked to the long-term development of the affected area.

## The private sector's role in disaster risk reduction (DRR)

While the primary responsibility for protecting communities is vested in national and local governments, the private sector plays an important role in managing disaster risks and building resilience. The private sector shares both the consequences of these risks and a responsibility to act in reducing them. In most countries, the private sector is the primary generator of GDP which employs the majority of the population and is the dominant vehicle for innovation and investment. It also has the know-how, organisation structure, resources and capacity to provide solutions. Ensuring a safer and more sustainable future requires coordinated action by multiple actors worldwide through

partnerships at multiple levels in politics, technology, economy, civil/community groups and the public that combine resources and expertise.

The crucial point in the case of disaster prevention is that it can make communities less vulnerable to hazards and better able to rebuild and develop. Business incentives to this end are clear – successful prevention activity will provide a more stable and predictable operating environment, reducing disaster risks to operations, suppliers and supply chains, trading and customers, and can reinforce a company's social license to operate.

- The economic case for ex-ante disaster risk reduction and management is compelling. Research has shown that :

- For every USD1 invested in resilience and prevention, between USD4 and USD7 are saved in response.
- Multi-national companies with best practices in managing their property risks produced earnings on average 40% less volatile than those with less advanced risk management plans.
- Average property loss is 20 times larger for companies with weak physical risk management practices, while the average loss per location exceeds USD3 million versus USD620, 000 for companies with robust disaster scenario management plans.
- Large businesses with strong risk management programmes compared with those with weak risk management practices, experience, on average, catastrophic losses that are seven times more costly – an average of USD478, 000 per loss compared with USD3.4 million.

## Tan Sri Dr Jemilah Mahmood

Senior Research Fellow,  
Humanitarian Futures Programme,  
King's College London



Tan Sri Dr Jemilah Mahmood is a medical professional and the Founder of MERCY Malaysia. Leading the humanitarian organisation for a decade since its inception in 1999, Dr Jemilah worked in numerous disasters and conflict zones globally. MERCY Malaysia, a model humanitarian organisation from the global south became the first Asian organisation certified for humanitarian accountability.

From 2009-2011, Dr Jemilah served as the Chief of Humanitarian Response at United Nations Population Fund (UNFPA). Currently, Dr Jemilah is a Senior Fellow at Khazanah Nasional Berhad in Malaysia, and Senior Research Fellow at the Humanitarian Futures Programme, King's College London. She writes on private sector roles in disaster management.

Dr Jemilah is an active member of the United Nations Disaster Assessment and Coordination team. She is currently on the boards of Humanitarian Accountability Partnership, Medecin du Monde and Teach for Malaysia. She is a Council member of the Overseas Development Institute, UK, and Chairs the Humanitarian Innovation Fund grants panel, UK.

For her work in humanitarian and peace building, she has been conferred numerous awards including four royal awards in Malaysia, the East Asia Women's Peace Award from the Philippines and the prestigious "Gandhi, King, Ikeda Award" from USA. She is featured in many international studies on leadership, both in the business and humanitarian sector.

<sup>1</sup> Guha-Sapir et al, (2011) Annual Statistical Disaster Review.

<sup>2</sup> OCHA's policy on PPP from OCHA on Message. [http://ocha.net.unocha.org/p/Documents/OOM\\_PublicPrivPartnerships\\_English.pdf](http://ocha.net.unocha.org/p/Documents/OOM_PublicPrivPartnerships_English.pdf)

<sup>3</sup> California Emergency Management Agency and United Nations Development Agency respectively.





# Appendices

**1** Key contacts

**2** Acknowledgements

**3** Key sponsors



## Key contacts

### Malaysia

PricewaterhouseCoopers  
Level 10, 1 Sentral, Jalan Travers,  
Kuala Lumpur Sentral, PO Box 10192,  
50706 Kuala Lumpur,  
Malaysia  
T : +60 (3) 2173 1188  
F : +60 (3) 2173 1288  
E : [pwcmsia.info@my.pwc.com](mailto:pwcmsia.info@my.pwc.com)  
W : [www.pwc.com/my](http://www.pwc.com/my)

### Assurance

**Pauline Ho**  
[pauline.ho@my.pwc.com](mailto:pauline.ho@my.pwc.com)

### Tax

**Jagdev Singh**  
[jagdev.singh@my.pwc.com](mailto:jagdev.singh@my.pwc.com)

### Advisory

**Tan Siow Ming**  
[tan.siow.ming@my.pwc.com](mailto:tan.siow.ming@my.pwc.com)

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## WIEF Project Team

**Project Advisor**  
Fazil Irwan

**Project Coordinators**  
Maizura Ismail  
Said Hamadi

## Article contributors

Dr Lerwen Liu  
Dr Jing Jiang  
Dr Mark Foley  
Tan Sri Dzulkifli Abdul Razak  
Ibrahim Abdul Matin  
Tan Sri Dr Jemilah Mahmood

## PwC-WIEF Project Team

**Project Advisor**  
Chin Suit Fang

**Project Manager**  
Vivian Ko Shiau Ping

**Business Research**  
Ng Pui Nyinn  
Shahida Md Salleh

**Marketing & Communications**  
Stephanie Caunter  
Jimmy Lim  
Nurazlinn Fariss Idris  
Norzalila Ghazali

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