The New Imperative: Collaborative Innovation

Dr. Anil Menon
Vice President, Corporate Strategy
IBM Growth Markets

15 September, 2008
Innovating for the Future

Five Historical Waves
Of Economic & Social Transformation In the Global Economy

<table>
<thead>
<tr>
<th>Wave</th>
<th>Period</th>
<th>Installation</th>
<th>Crash</th>
<th>Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1771-1829</td>
<td>The Industrial Revolution</td>
<td>Panic 1797</td>
<td>Formation of Mfg. industry, Repeal of Corn Laws opening trade</td>
</tr>
<tr>
<td>2</td>
<td>1829-1873</td>
<td>Age of Steam and Railways</td>
<td>Panic 1847</td>
<td>Standards on gauge, time, Catalog sales companies, Economies of scale</td>
</tr>
<tr>
<td>3</td>
<td>1875-1920</td>
<td>Age of Steel, Electricity and Heavy Engineering</td>
<td>Depression 1893</td>
<td>Urban development, Support for interventionism</td>
</tr>
<tr>
<td>4</td>
<td>1908-1974</td>
<td>Age of Oil, Automobiles and Mass Production</td>
<td>Crash 1929</td>
<td>Build-out of Interstate highways, IMF, World Bank, BIS</td>
</tr>
<tr>
<td>5</td>
<td>1971-</td>
<td>Age of Information and Telecommunications</td>
<td>Dot.com Collapse 2001</td>
<td>Coming period of Institutional Adjustment</td>
</tr>
</tbody>
</table>

Source: Perez, C., “Technological Revolutions and Financial Capital”, 2002
In This Fifth Stage,
There Are Some Key Characteristics Across The Global Economy

- Dynamics of a flattening world
- Emergence of new capabilities
- Evolution of information technology
- March of commoditization
- Massive shift in demographics
- Unpredictability and impact of change
How Can Growth Countries like Malaysia Prosper in this Fifth Stage?

It should “leapfrog” through a new form of Innovation system that is

• Open
• Collaborative
• Multi-disciplinary
• Global
“Leapfrogging” Means Leadership… Not Just Catching Up

Leapfrogging is a theory of development in which developing countries may accelerate development by skipping inferior, less efficient, more expensive or more polluting technologies and industries and move directly to more advanced ones.
Existing Mature Economies

*Experienced Three Key Phases of Development from 1890-1970*

**Explosion of Capitalism (1890)**
- Family Owned Businesses
- Rise of Upper Class
- Geographic Mobility
- Shift to Industrial Society Begins

**Progressive Reform (1920)**
- Institutional Adjustment
- Social / Labor Reforms
- Government Regulation
- Infrastructure Buildout Begins

**Post-War Boom (1945-1970)**
- Economy Accelerates
- Rise of the Middle Class / Suburbs
- Environmental / Ecological Issues
- Shift to Industrial Society Complete

**Implication:** These three phases will be compressed into a much shorter time for developing economies
Today’s Overarching Realities
21st Century Drivers of Change

Network Ubiquity
More than a billion Internet users and three billion wireless subscribers worldwide

The Rising Tide of Globalization
Economics, Expertise, Openness

Innovation
Combining technology with insight to create new value
Innovating for the Future

Network Ubiquity

Everyone and Everything is Connected

A million businesses
A billion people
A trillion devices
Innovation resides at the intersection of invention and insight, leading to the creation of social and economic value.

National Innovation Institute
2006 Global CEO Study
Leaders Feel Pressure to Change

Extent of Fundamental Change Needed Over the Next Two Years
- A lot: 65%
- Moderate: 22%
- Little or no: 13%

Focus of Innovation Efforts
- Products/Services: 42%
- Business Models: 28%
- Operations: 30%

IBM Institute for Business Value, CEO Study 2006
CEOs: Top Source of New Ideas and Innovation

Collaboration sparks innovation

- Employees
- Business Partners
- Customers directly
- Consultants
- Competitors
- Associations
- Internal Sales & Service Units
- Internal R&D
- Academia
- Think-tanks
- Labs and/or other institutions
Faster, Broader More Uncertain Change

8 in 10 CEOs Anticipate Turbulent Change, and Plan Bold Moves

### 2006

- **None/Limited**
  - Expected Change: 13%
  - Past Change Success: 12%

- **Moderate**
  - Expected Change: 22%
  - Past Change Success: 31%

- **Substantial**
  - Expected Change: 65%
  - Past Change Success: 57%

### 2008

- **None/Limited**
  - Expected Change: 6%
  - Past Change Success: 11%

- **Moderate**
  - Expected Change: 83%
  - Past Change Success: 20%

- **Substantial**
  - Expected Change: 22%
  - Past Change Success: 61%
Innovative Beyond Customer Imagination

75% of CEOs View Demanding Customers as Opportunity to Differentiate

Investment in informed and collaborative customers

- Investment past 3 years: 16.7%
- Investment next 3 years: 20.4% (22% Increase)
Global Integration

Vast Majority of CEOs Reconfiguring Business Designs

Outperforming organizations choose globally integrated business designs

<table>
<thead>
<tr>
<th>Category</th>
<th>Extensive Globalizers</th>
<th>Globalizers</th>
<th>Blended Thinkers</th>
<th>Localizers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underperformers</td>
<td>29%</td>
<td>33%</td>
<td>17%</td>
<td>21%</td>
</tr>
<tr>
<td>Outperformers</td>
<td>32%</td>
<td>39%</td>
<td>12%</td>
<td>17%</td>
</tr>
</tbody>
</table>
It is the Wisdom of Our CEO Crowd
That Has Led Us to Five Core Traits of the Enterprise of the Future

1. Hungry for change
2. Innovative beyond customer imagination
3. Globally integrated
4. Disruptive by nature
5. Genuine, not just generous

The 350 interviews conducted in Growth Markets provide an opportunity to compare Growth Markets to Major Markets
Faced with Significant Industry Transformations

Growth Markets CEOs are Much More Agile than their Counterparts in Major Markets

Major Markets

<table>
<thead>
<tr>
<th>Change Needed</th>
<th>Past Change Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>7%</td>
<td>83%</td>
</tr>
<tr>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td>26%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Growth Markets

<table>
<thead>
<tr>
<th>Change Needed</th>
<th>Past Change Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>14%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Change Needed
- No/limited Change
- Moderate Change
- Substantial Change

Past Change Success
- No/limited Success
- Moderate Success
- Successful

Source: IBM Global CEO Study 2008, n (Major) = 895, n (Grow th) = 348
Growth Market CEOs in an Effort to Satisfy Consumer Demands Are Planning an Increase their Already High Investments Leading to Innovations Beyond Imagination

Rise of purchasing power in rapidly developing economies and prosperity in Western economies

**Major Markets**

- No impact: 23%
- Negative impact: 17%
- Positive impact: 60%

- **Investment past 3 years:** 20.4%
- **Investment next 3 years:** 24.7%
- **Increase:** 21%

**Growth Markets**

- No impact: 5%
- Negative impact: 5%
- Positive impact: 83%

- **Investment past 3 years:** 28.6%
- **Investment next 3 years:** 33.1%
- **Increase:** 16%

Source: IBM Global CEO Study 2008, n (Major) = 424, n (Grow th) = 179
Business Model Innovation (BMI) Focus, Which is High Amongst all CEOs, is Even More Important for Growth Markets CEOs

Business Model Innovation Focus

Major Markets
- Limited/No BMI Focus: 3%
- Moderate BMI Focus: 30%
- Strong BMI Focus: 67%

Growth Markets
- Limited/No BMI Focus: 1%
- Moderate BMI Focus: 27%
- Strong BMI Focus: 72%

Source: IBM Global CEO Study 2008; n (Major) = 766, n (Growth) = 334
The Changing Nature and Scope of Innovation

Open

Product and Services Innovation
Process Innovation
Business Model Innovation
Management System Innovation
Societal Innovation

Collaborative

Multi-disciplinary

Global
Innovating for the Future

Building a Global Management System for Innovation
GIO Africa – Insights and Opportunity

Africa Represents a Blank Slate of Economic Opportunity

- Economic development requires a mix of pan-continent thinking, regional alliances and country-by-country programs

- We all can have a profound impact on Africa and benefit most from early investment

- New initiatives led by IBM and partners
  - Makocha Minds
  - Africa Financial Grid
  - Blue Gene Supercomputer
  - African Innovation Policy Program

ibm.com/gio
Wireless technologies will be the platform for economic enablement in Africa

- Genuine opportunity to “leapfrog” developed regions in applications ranging from financial transactions (digital wallets and cash transfers) to mobile government
New Models for Leadership for the 21st Century?

- Effective leadership in highly distributed, virtual work environments is often temporal and transitory.
- Transparency of players skills and capabilities facilitates better decision-making and distribution of responsibility.
- Reliance on real-time, multi-media communications options increases efficiency and productivity of teams.
- Risk-taking is encouraged – and failure is often a pre-requisite for success.
GIO 2008 – Focus Areas

Security and Society
- Emerging opportunities for monitoring, deterring and mitigating disruption from theft and other security-related breaches
  - New models for protecting commercial property and goods
  - Trusted personal identity
  - Digital security

Water and the Oceans
- The economic and societal impact of dramatic changes affecting the world’s water systems
  - Sustainable water supplies for human consumption, fishing and agriculture
  - Understanding and managing the economic effects of flooding, rising sea level changes and extreme erosion
  - Discovery and exploration in the last terrestrial frontier – and oceans as a source of new societal advances in energy, medicine and food
Learnings From Our GIO Team

- Tremendous value in bringing together diverse perspectives and expertise around common issues
- Near-term pressures cloud long-term thinking
- Innovation isn’t a process, it’s a culture
- Solving the toughest problems will require greater collaboration across business, government and academia
The 21st Century Demands Uniquely-Skilled People

• Cross-disciplinary programs and degrees

• Fusing technical competency with industry-specific knowledge and business-process expertise

• Success requires open collaboration among academia, government and industry
Moving Forward

- Move quickly to capitalize on new innovation or risk commoditization
- Business, government and academia must partner more aggressively
- The capacity for change is the most essential attribute of leadership
“Be the change you want to see in the world”

-- GANDHI