“National ICT Trends in the next 5-10 years”
By Ng Wan Peng, Chief Operating Officer, Multimedia Development Corporation (MDeC)

@ Cisco Connect Malaysia, October 2, 2014
MALAYSIA IN TRANSITION...
MSC MALAYSIA ROADMAP

**PHASE ONE: 1996-2003**
- Successfully create the MSC Malaysia
- 1 Corridor
- 50 world-class companies
- Launch 7 flagship applications
- World-leading framework of cyberlaws
- Cyberjaya as world-leading intelligent city

**PHASE TWO: 2004-2010**
- Grow MSC Malaysia into a global ICT Hub
- Web of corridors
- 250 world-class companies
- Enhance current flagships & introduce new ones to improve national competitiveness
- Leadership towards harmonized global framework of cyberlaws
- Enhance local ICT Industry especially those centred around services to people
- Link to world leading intelligent cities

**PHASE THREE: 2011-2020**
- Transform Malaysia into a Knowledge-based society
- Infusion of technology across all economic sectors to drive productivity and innovation
- Malaysia as a vibrant hub for creation of ICT solutions, leading to net exporter status
- Pervasive use of ICT to increase QoL across all communities
- ICT empowerment as a source of national competitive advantage
- Acculturation of Digital Transformation throughout government machinery
- Innovative Digital Economy Framework leading into the birth of Digital Malaysia
MSC MALAYSIA INSTRUMENTAL IN DRIVING GROWTH IN KEY INDUSTRIES

Creative Multimedia

Information Technology

Shared Services & Outsourcing
MDEC has built a conducive ecosystem to grow the Malaysian ICT industry.

- Built and Nurtured Cybecities and Cybercenters
- Enterprise Development
- Driving Business Friendly Policies and Regulations
- R&D & Technology
- Changing Digital Mindsets
- Inspire local Innovators
- Raising Digital Skillsets
- Connecting Mentors, Money & Market to start-ups
- Talent & Capability Development
- Driving SMEs adoption of technology
- Incubators & Accelerators
- Create Market Access, Distribution and Delivery
- Growing Malaysian Successes
- Driving Entrepreneurship and accelerating start-ups
MSC MALAYSIA HIGHLIGHTS 1996-2013: THE RESULTS TELL THE STORY

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>RM 123.55</td>
</tr>
<tr>
<td>GDP contribution</td>
<td>RM 66.06</td>
</tr>
<tr>
<td>Export Sales</td>
<td>RM 74.41</td>
</tr>
<tr>
<td>Investments</td>
<td>RM 153</td>
</tr>
<tr>
<td>Jobs created</td>
<td>138,071</td>
</tr>
</tbody>
</table>
Malaysia’s Digital Transformation...

The Government has given the Multimedia Development Corporation (MDeC) the mandate to lead the Digital Transformation Programme which will be called Digital Malaysia.

YAB PM at the 23rd MSC Malaysia Implementation Council Meeting (ICM), October 2011

"We will build an ecosystem that promotes the pervasive use of ICT in all aspects of the economy to create communities connected globally & interacting in real time."

YAB Dato’ Sri Mohd Najib Abdul Razak
Prime Minister of Malaysia
at the Global Science & Innovation Advisory Council in New York, USA on 17th May, 2011
...IS DRIVEN BY OUTCOMES IMPORTANT TO THE NATION

DIGITAL ECONOMY DESIRED OUTCOMES

**INCREASED WEALTH**

Nation’s wealth as Digital Economy increases its contribution to national GDP

**ENHANCED PRODUCTIVITY**

Productivity is enhanced as Gross Value Added (GVA) per employee improves via technology adoption among SMEs

**IMPROVED STANDARD OF LIVING**

Standard of Living improves as the Rakyat uses digital means to perform higher value jobs and obtain new sources of income
ROLL OUT OF DIGITAL MALAYSIA IN PHASES

Drive Phase 1 via Digital Malaysia 354 Roadmap
DIGITAL MALAYSIA’S 2020 ASPIRATIONAL GOALS (DM PHASE 1)...

Digital Economy contribution to GDP

WEF Global IT Report (GITR) Rankings
(Rank amongst 148 economies)

WCY Competitiveness Scoreboard
(Rank amongst 60 economies)

Baseline 2020

12%* 17%
30** TOP 20
12** TOP 10

Increased Wealth
Enhanced Productivity
Improved Standard of Living

Source:
• McKinsey Report: Internet’s Impact on Aspiring Countries & MDeC Analysis
• Digital Economy Fact Sheet, Germany Trade & Invest & MDeC Analysis*
• The Truth of the Digital Economy, Google Think Insights, Grove**

*as at 2012
**as at 2014
A holistic approach and strategy to build a comprehensive eco-system that can generate momentum towards the aspirational goals set out under Digital Malaysia.
Key indicators were identified from international benchmarking for improvement in Malaysia.

The right environment is crucial for initiative to thrive and yield positive results.

**ICT ENABLING ENVIRONMENT FOCUS AREAS**

- **ACCESS**
  - 7 INDICATORS

- **ADOPTION**
  - 5 INDICATORS

- **USE**
  - 6 INDICATORS
DIGITALLY DRIVEN NEEDLES ARE ALSO SHOWING POSITIVE TRENDS

The AAU is a key enabler of socio economic development and has impact above and beyond the ICT Industry.
INCREASING REVENUE AND DRIVING NEW GROWTH IN 5 SUB-SECTORS

Economic Impact Is Delivered Via 5 Digital Economy Sub-sectors
SNAPSHOT OF THE 5 DIGITAL ECONOMY SUB-SECTORS

ICT Contribution to GDP by sub-sector (RM Billion)

- **ICT Services**: 41.3
- **eCommerce**: 19.0
- **ICT Manufacturing**: 32.3
- **ICT Trade**: 11.1
- **Content & Media**: 4.3

Percentage contribution by sub-sector:
- **ICT Manufacturing**: 38%
- **ICT Services**: 30%
- **eCommerce**: 18%
- **ICT Trade**: 10%
- **Content & Media**: 4%

Note: ICT contribution to GDP by Non-ICT industry is not included in the above.

Source: Base data referenced from ICTSA 2005 to 2012 by DOSM. Further analysis and breakdown by MDeC/IDC.
ICT SERVICES PROJECTED TO CONTRIBUTE 48% OF MALAYSIA’ DIGITAL ECONOMY IN 2020
E-COMMERCE IS ONE OF THE KEY SUB-SECTORS

Economic Impact Is Delivered Via 5 Digital Economy Sub-sectors

- ICT Services
- e-Commerce
- ICT Manufacturing
- ICT Trade
- Content & Media

e-Commerce will contribute about RM 57 Bil of GDP in 2020
E-COMMERCE: PURSUING OPPORTUNITY

Source: IDC New Media Market Model 1H 2012
**DESIRED OUTCOMES**

**GDP contributions from eCommerce are to be accelerated by 14.8% to reach the target of RM57.3b by 2020**

- **Base**
  - 2010: 17.3
  - 2020: 32.2

- **Gap**
  - 2010: 14.8%
  - 2020: 25.1

- **Organic growth 15B**: 57.3

**High Level Recommendations**

- Encourage and entice companies (esp SMEs) to adopt digital business models for
  - cost and productivity efficiencies and
  - expansion into overseas markets

- Develop and grow e-commerce enablers

- Encourage the e-shopping culture among consumers and buyers

*Source: Department of Statistics, 2013*
MULTI PARTY EFFORT

New consumer protection regulations for online commerce transactions;

Enabling Infrastructures for Ecommerce

Enhancing Global Market access for SMEs through eCommerce

Increase confidence and trust in Malaysian eCommerce in terms of web security validation

Nurture and grow local eCommerce solution providers

Move SMEs to adopt eCommerce
CREATING OPPORTUNITIES WHICH BENEFIT THE INITIAL 4 COMMUNITIES

ICT Sector growth will channel benefits to the 4 initial targeted communities

1. **Digital Entrepreneur**
   - Tap demand for digital products and services

2. **B40**
   - Improve income and quality of life of the B40 community

3. **Youth**
   - Create knowledge-workers of the future

4. **SME**
   - Enhance SME productivity
MALAYSIAN DIGITAL ECONOMY SNAPSHOT 2012

ICT Share of GDP

ICT: 12%
Others 88%
National GDP RM941B

ICT Value-Added

Average Margins: 33%
RM 327B
GVA
RM 109B

ICT Exports & Imports

Net Exports:
RM 36B
RM 196B
Exports
RM 160B
Imports

Compensation
RM 33.3B

Employment
762,400

Average compensation per employee
RM 43,703 p.a.

NATIONAL FOCUS ON THE DIGITAL ECONOMY IS SHOWING PROGRESS

Digital Malaysia has begun to show impact in the Aspirational Goals for the national Digital Economy.

GITR Quote: “Malaysia is stable (30th) and confirms its leadership as the highest ranked in Developing Asia”

IMD Quote: “Malaysia has made impressive gains in 2014”

OTHER KEY AREAS WE ARE FOCUSSING ON INCLUDE....
UNLOCKING OPPORTUNITIES IN THE MALAYSIAN MARKET...
Cloud Services, together with Mobility, Big Data Analytics and Social Media form a new platform for enabling businesses.

**Cloud Services**

- Opex vs Capex IT Cost Model
- Pay-as-You-Go
- Device Independence
- Enhanced Business Agility
- Access, Anytime, Anywhere
- Quick deployment, Quick Teardown
- Dynamic Scaling
- Facilitates Mobility
CLOUD FACILITATES DATA VOLUME, VARIETY & VELOCITY

Data collected in

Google 694,445 SEARCH QUERIES

168 MILLION EMAILS SENT

13,000+ iPHONE APPLICATIONS DOWNLOADED

320+ NEW TWITTER ACCOUNTS

Analysis Forecasting Prediction

Better Decision Making
Better Targeting
Behavioural Prediction

BIG DATA ANALYTICS

MDECE
Driving Transformation
CLOUD FACILITATES ENTERPRISE MOBILITY: COMPUTING, ANYTIME, ANYWHERE
... AND WILL EXPLODE IN A HYPER CONNECTED WORLD IN 2020...

★ 10 Connected Devices for Every Household

★ 5 connected devices for every user

★ 5 billion internet users

★ 500 devices with unique digital IDs (Internet of things) per square kilometre

80 Billion Connected Devices Globally
... GIVING RISE TO BIG DATA ANALYTICS
BigDataAnalytics.my

A hub for National BDA awareness and publicity, in the areas of thought leadership, Open Data, programs, events, white papers, case studies, talent, technology and funding.

facebook.com/dataanalytics.my
Overall, private organizations in Malaysia are at the Ad-Hoc stage in terms of BDA maturity.

Malaysian private sector is more advanced from the overall “Starters” countries.

However, the BDA maturity is slightly below the average of APeJ private sectors.
STRATEGIC INTENT OF NATIONAL BIG DATA ANALYTICS (BDA) INITIATIVE

3 Key Focus Areas

1. Proliferate usage of BDA in all sectors
2. Catalyse adoption and usage of BDA in public sector
3. Build the BDA industry in Malaysia

Short Term (1-2 years)
• Kick start BDA priorities
• Framework
• Pilot government projects
• Private sector projects

Medium Term (3-4 years)
• Grow use of BDA
• Build strong talent and skillsets in BDA
• Building sustainable National BDA initiative

Long Term (5-7 years)
• Public - Private BDA initiatives
• Leadership in BDA
• Widespread use of BDA
MDEC DRIVING MALAYSIA’S BDA FRAMEWORK

**Applications**

**Value-Added Elements**

**Data Mix**

**Private Sector**

**Public Sector**

**Data Sources**

**Enablers**

<table>
<thead>
<tr>
<th>Social</th>
<th>Government</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>Analytics</td>
<td>Synthesis</td>
</tr>
<tr>
<td>Data in Silos</td>
<td>Shared Data</td>
<td>Open Data</td>
</tr>
</tbody>
</table>

**Data Owners**
- Private Companies
- DOSM, MACRES, Bernama, MET, DOE, MOH, MKN, etc

**System Users / Providers**
- System integrators, Solution Providers, Business Intelligence, etc
- Universities, Research Institutions

**Traditional Media**

**Social Media**

**Transactional Data**

**National Statistics**

**Talent**

**Info / Infra**

**Funding**

**Regulatory**

**Technology**
TOP 3 OPPORTUNITIES IN TELECOMS

MULTI-CHANNEL CUSTOMER ENGAGEMENT

• Customer-centric alignment - internal data structures optimized for 360

• Consistent customer experience across channels

• Multi-channel contact centers

OPTIMIZE NETWORK UTILIZATION

• Improve network asset utilization

• Enhance customer experience for high growth customers.

• Drive Positive churn

ENHANCED CUSTOMER ANALYTICS

• Turn customer demand data into valuable insights

• Improve customer acquisition and reduce churn rates

• Better targeted marketing initiatives

Source: IDC 2014
TOP 3 OPPORTUNITIES IN MANUFACTURING

THE FACTORY OF THE FUTURE - PRODUCTIVITY

- Multi-plant MES - Standardization / optimization of production processes
- Production planning / control - Increase production velocity
- Flow control - materials, people, information

ACCELERATE SERVICE AND OPERATIONS EXCELLENCE

- Manufacturing execution - improved quality of goods and services
- Utilization and maintenance - reduce losses associated with downtime
- Sales & Operations planning - integrated operational systems

DESIGN, PRODUCTION, AND SUPPLY INTELLIGENCE

- Increased visibility into manufacturing processes (e.g. product life-cycle recalibration)
- Improved modeling and simulation
- Enhanced supply chain resilience - better metrics and KPIs for Total cost to serve

Source: IDC Manufacturing Insights 2014
### TOP 3 OPPORTUNITIES IN RETAIL

<table>
<thead>
<tr>
<th>OMNICHANNEL RETAIL</th>
<th>PRODUCT OR SERVICE INNOVATION (AND PERSONALIZATION)</th>
<th>PRICING AND PAYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improve Customer Retention and Service</td>
<td>• Integrate Customer Feedback</td>
<td>• Dynamic Pricing</td>
</tr>
<tr>
<td>• Accelerate New Customer Acquisition</td>
<td>• Localized Inventories</td>
<td>• Self Checkout (SCO)</td>
</tr>
<tr>
<td>• Mobile and Social Commerce</td>
<td>• Promotions to Behavior-Based Segments</td>
<td>• Mobile Payments</td>
</tr>
</tbody>
</table>

Source: IDC Manufacturing Insights 2014
...GROWING THE EMBEDDED SECTOR

The Internet of Things
More objects are becoming embedded with sensors and gaining the ability to communicate.

Opportunities are Immense
new business models,
 improve business processes,
 and reduce costs and risks.

Building on Malaysia’s strong
Manufacturing experience-
MDeC is taking steps to tap
this growth
# STRATEGY: DEMAND PULL AND SUPPLY PUSH

<table>
<thead>
<tr>
<th>Demand</th>
<th>Intelligentic</th>
<th>Smart Cities</th>
<th>Transportation</th>
<th>Smart</th>
<th>Internet of Things</th>
<th>Other examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Smart</td>
<td>Economic</td>
<td>Roads/Highway</td>
<td>Industry 4.0</td>
<td></td>
<td>Retail, Health, Agriculture, Green Tech</td>
</tr>
<tr>
<td></td>
<td>Cities</td>
<td>zones</td>
<td>Highway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cross</td>
<td>Logistics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Supply Push
- Increase GNI
- Increase # Jobs
- Market share

### Demand Pull
- Increase GNI & Jobs
- Market share
- Create Niche & Global Players

### Other examples
- Retail
- Health
- Agriculture
- Green Tech

### Supply
- Economic zones
- Cross countries

### Niche
- Economic zones
- Cross countries
- Retail
- Health
- Agriculture
- Green Tech

### Mass
- Economic zones
- Cross countries
- Increase GNI
- Increase # Jobs
- Market share

### Embedded System Industry Players
- MIT
- GHL
- iRadar
- ARCHTRON
- ELSOFT
- ViTrox

### Intelligent Transportation
- COMOS (EV Rental)
- Roads/Highway
- Logistics

### Smart Manufacturing
- Industry 4.0

### Smart Cities
- ISKANDAR

### Smart Manufacturing
- Economic zones
- Cross countries

### Internet of Things
- Other examples
- Economic zones
- Cross countries
## CISCO IS A TECHNOLOGY PARTNER

<table>
<thead>
<tr>
<th>No</th>
<th>Embedded Focus</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electric vehicle charging infrastructure solutions</td>
<td>2 Prong Approach Stakeholders</td>
</tr>
<tr>
<td>2</td>
<td>Embedded automotive</td>
<td>Smart electric bus controller system</td>
</tr>
<tr>
<td>3</td>
<td>Vision inspection</td>
<td>Advanced X-ray inspection system for automotive, telecommunication &amp; medical industries</td>
</tr>
<tr>
<td>4</td>
<td>Wireless sensor network</td>
<td>Embedded wireless sensor for ubiquitous monitoring in retail</td>
</tr>
<tr>
<td>5</td>
<td>Digital Set Top Box</td>
<td>Interactive TV Set Top Box for hospitality &amp; homes</td>
</tr>
<tr>
<td>6</td>
<td>Digital Signage</td>
<td>Digital signage kiosk for retail, indoor &amp; outdoor &amp; others</td>
</tr>
<tr>
<td>7</td>
<td>Fleet Management</td>
<td>Intelligent visual analytic traffic incident detection system for intelligent transportation system</td>
</tr>
<tr>
<td>8</td>
<td>Digital Security Surveillance</td>
<td>Digital smart home and security system for homes &amp; community</td>
</tr>
<tr>
<td>9</td>
<td>Embedded healthcare</td>
<td>Embedded controller system for dialysis system</td>
</tr>
<tr>
<td>10</td>
<td>Embedded Infrastructure System</td>
<td>Embedded Systems for Remote Monitoring of Man-made Structures and Earth Environments</td>
</tr>
<tr>
<td>11</td>
<td>Payment Systems</td>
<td>Payment router for retailers</td>
</tr>
</tbody>
</table>

### Stakeholders

- KKMM
- MIMOS
- MDEC
- MMU
- MIMOS
- PEMANDU
- CREST
- CREST
- CMU
- UTAR
- MIMOS
- CISCO
- ALTERA
- ULTRA
- NATIONAL INSTRUMENTS
- INTEL
- PSOC
- Wind River
- TalentCorp
- Digital Malaysia
- Malaysia National ICT Initiative
- National Digital Economy Initiative

### Technology Partners

- MDEC
- CISCO
- ALTERA
- ULTRA
- NATIONAL INSTRUMENTS
- INTEL
- PSOC
- Wind River
- TalentCorp
- Digital Malaysia
- National Digital Economy Initiative
- National ICT Initiative
- National Digital Economy Initiative

### Ecosystem Partners

- MDEC
- CISCO
- ALTERA
- ULTRA
- NATIONAL INSTRUMENTS
- INTEL
- PSOC
- Wind River
- TalentCorp
- Digital Malaysia
- National Digital Economy Initiative
- National ICT Initiative
- National Digital Economy Initiative
CISCO IS A TECHNOLOGY PARTNER...

KL CONVERGE!
Smart Cities - From Dream to Reality
Mini Forum cum workshop
18 September 2014

Attended by 50+ pax from city planners, developers, investors and solution providers

New Business Opportunities for Digital Entrepreneurs

FOCUS AREAS INCLUDE:

Healthcare
Energy
Transportation
CONCLUSION

In order to continue national impact of the digital transformation programme deeper shifts must take place

1. MDeC will continue to drive behavioral change across phases

2. MDeC will deploy a Phased approach towards a holistic Digital Malaysia

3. MDeC will work in synergy with both the Public and Private Sector to unlock Malaysia’s Digital Opportunities for Competitiveness & Economic Growth

Top Tech Trends for 2014
THANK YOU