Innovation at the Periphery
- A Caribbean Perspective

University of Ilorin Lecture

Presenter: Dr. Maurice McNaughton

Mona School of Business & Management, UWI
Lecture Outline

• Background & Context

• ICT: A Brief Evolutionary Perspective
  – A Critical View of ICT4D

• An Evolving View of Innovation
  – Innovation at the Periphery
  – Open Innovation
  – Universities as Innovation Hubs

• ICT as an Enabler of Innovation
Jamaica in Context

Tropical paradise…

Explore Jamaica
Sweet fragrances, shimmering sunsets, spicy flavors.
No wonder hearts beat faster in Jamaica.

Cultural icons…

100% Jamaica Blue Mountain Coffee
"When Ordinary Coffee Just Won't Do"
Jamaica in Context...

**Sporting icons...**

Shelly-Ann Fraser-Pryce

Usain Bolt...

Asafa Powell...

Veronica Campbell

Olympic 4x100 sprint queens...

Michael Holding...

Reggae Boyz...
FORWARD. THINKING
Mona School of Business & Management

Our Vision
To be the premier business school in the region, globally recognized for management education, research and consultancy.

Our Mission
To be a solution-oriented school of business and management which produces internationally competent and capable professionals and leaders through teaching, research and service.

Core Values
- Innovation
- Integrity
- Civic Responsibility
- Transparency
- Excellence

MISSION & VISION
**MSBM is the largest business school in the Caribbean region**

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<th>Level</th>
<th>Gender</th>
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ACADEMIC UNDERGRADUATE PROGRAMMES

**BSc**

**Mona Campus**
- Accounting
- Entrepreneurship
- Human Resource Management
- Management Studies
- Marketing
- Operations
- Banking and Finance
- Tourism Management
- Chemistry Management *

**Western Jamaica Campus (WJC)**
- Human Resource Management
- Management Studies
- Accounting
- Banking and Finance
- Tourism & Management*
- Management Information Systems*

* Special Option
ACADEMIC GRADUATE PROGRAMMES

• Master in Business Administration
• Executive Master in Business Administration
• Master in Business Management
• Doctorate in Business Administration

MSc
• MSc. Accounting
• MSc. Computer Based MIS
• MSc. Enterprise Risk Mgmt.
• MSc. National Security & Strategic Studies
• MSc. Sports Business Mgmt.
• MSc. Taxation
• MSc. Telecommunications Policy Mgmt.
• MSc. Tourism Mgmt.

Diploma
• Business Administration
• Sports Business Management
FACILITIES

Mona Campus North

Mona Campus South

Western Jamaica Campus
ICT: A Brief Evolutionary Perspective
Watershed Events in the History of ICT

6 Decades - Key Transitional epochs in the Global ICT industry
Digital Convergence

Converging industries:

- Software Industry
- Media Industry
- Cellular Industry
- Telecom Industry (ADSL/FTTH)
- Internet
  - Ubiquitous access
- Telecom
  - Anywhere, anytime usage

Digitalization
- Convergence, enhanced data speed
- Information Technology Industry
- Consumer Electronics Industry
A Critical View of ICT4D
What is ICT4D? (the traditional viewpoint)

• ...quite simply the application of information and communication technologies for development

• ..typically considered in an international context, from the perspective of the wealthier nations in the North through the agency of international development organizations & local actors (NGO's)

• ..usually seeking to define & address the problems and challenges (reduce poverty, and improve health and education and gender equality) faced by the poor in developing countries, and solutions amenable to the application of ICT

• ..not so much from a moral obligation but usually from a collective, enlightened self-interest
## ICT4D – Evolutionary Perspective

<table>
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<th>ICT4D 1.0</th>
<th>ICT4D 2.0</th>
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<tbody>
<tr>
<td><strong>Era</strong></td>
<td>mid/late 1990's to mid/late 2000's</td>
<td>mid/late 2000's to...</td>
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<tr>
<td><strong>Emphasis</strong></td>
<td>Matching between MDGs and emerging ICT's i.e. Internet, PCs; delivery of information, communication and services to poor communities.</td>
<td>Focus on technology-in-use; more emphasis on application and business model innovation; emerging concept of &quot;openness“</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>an invention-down approach - bringing new technologies into development contexts</td>
<td>Less on piloting and sustaining new applications, and more on assessing and scaling existing applications, encourage local innovation</td>
</tr>
<tr>
<td><strong>Technologies</strong></td>
<td>PCs &amp; fixed line, narrow-band Internet connectivity</td>
<td>mobile (low-cost devices) &amp; wireless; broadband; cloud-computing models</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td><strong>Sustainability</strong>: many ICT4D projects fail to deliver and/or survive <strong>Scalability</strong>: given the limited reach of individual &amp; impact of individual initiatives</td>
<td>??</td>
</tr>
</tbody>
</table>

Ref: Heeks, R. (2009). The ICT4D 2.0 manifesto
## ICT4D – Philosophy of Openness

<table>
<thead>
<tr>
<th></th>
<th>Less</th>
<th>↔ Openness ↔</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emphasis</strong></td>
<td>Access</td>
<td>Participation &amp; Collaboration</td>
<td>Open Innovation</td>
</tr>
<tr>
<td><strong>Cultural Content</strong></td>
<td>Books</td>
<td>Corporate controlled media with some competition</td>
<td>Independent or distributed media (e.g., blogs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Radio/television</td>
<td>Collaborative production of content (YouTube, open source movies)</td>
</tr>
<tr>
<td><strong>Software Development / Provision</strong></td>
<td>Proprietary software</td>
<td>Software APIs</td>
<td>Open source collaborative development</td>
</tr>
<tr>
<td><strong>Education Resources</strong></td>
<td>Textbooks, Reference books, etc.</td>
<td>Educational content online/free</td>
<td>Open use and re-usable educational content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital reference books available online</td>
<td>Collaborative information development (Wikipedia, collaborative educational content, etc.)</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>&quot;Laboratory&quot; (pro-poor) innovation</td>
<td>&quot;Collaborative&quot; (para-poor) innovation</td>
<td>&quot;Grassroots&quot; (per-poor) innovation</td>
</tr>
</tbody>
</table>

Ref: Smith, M. L., & Elder, L. (2010). Open ICT ecosystems transforming the developing world
## Grass-Roots Innovation

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Traditional (pro-poor)</th>
<th>Grass-Roots Innovation (per-poor)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target constituents</strong></td>
<td>3rd world</td>
<td>Rural/Semi-urban communities</td>
</tr>
<tr>
<td><strong>Type of Innovation / Technology</strong></td>
<td>Low-tech, small-scale, low-impact</td>
<td>New, tailored products, inspired indigenously</td>
</tr>
<tr>
<td><strong>Main Actors involved</strong></td>
<td>NGOs</td>
<td>Local community, NGOs, Government, University</td>
</tr>
<tr>
<td><strong>Poor as...</strong></td>
<td>User of Innovation</td>
<td>Innovator</td>
</tr>
<tr>
<td><strong>Scale/Scope</strong></td>
<td>Small</td>
<td>Small; Scale through replication</td>
</tr>
<tr>
<td><strong>Poverty alleviation methods</strong></td>
<td>Diffuse low-cost technology that matches local factor endowments to meet basic needs</td>
<td>Using innovation from local context to serve the local need</td>
</tr>
<tr>
<td><strong>Supply-Push / Demand-Pull</strong></td>
<td>Supply-push</td>
<td>Demand-Pull</td>
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<tr>
<td><strong>Knowledge and capacity building</strong></td>
<td>Weak, empowering the user</td>
<td>Building on the indigenous knowledge</td>
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Open Development Hypothesis:
"positive development can emerge through new models of engagement and innovation that are more participatory, more collaborative, and driven more by the beneficiaries"

– Hagel III, Brown, and Davison 2010
The Changing Nature of Innovation
What is Innovation?

• “...creation of better or more effective *products, processes, technologies*, or *ideas* that affect markets, governments, and society in a *significant way*”

• Innovation is a product, process, capacity

• Simple Innovation Arithmetic
  o Invention ≠ Innovation
  o Great Ideas < Innovation
  o Innovation + Entrepreneurship = Growth
  o Entrepreneurship - Innovation = ?
Barriers to Innovation

- Propensity to acquire rather than create technological solutions;
- Low levels of commitment to, and investment in R&D by both public and private sectors in collaboration with academia;
- Inadequate government leadership in its own adoption, procurement and use of ICT that can stimulate technological development and indigenous innovation capability in the local ICT sector.
Changing Nature of Innovation

• **Technology enablers are much more accessible to Developing countries (South)**
  – Internet, Mobile phone, Cloud computing (less Digital divide)

• **Innovation at the Periphery**
  – Technological innovations in seemingly remote geographical regions
  – “Skunkworks" innovation that takes place within an enterprise, but outside of mainstream R&D centres
  – indigenous frugal innovations that emerge out of developing country contexts

• **Some evidence of a reversal in the North-South Technology Transfer Hegemony**
  – Technology acquisition in South, not limited to Imitation & Adaptation
  – Examples of indigenous solutions that have global relevance (eg. mPesa, Ushahidi, BudgIT)
Changing Nature of Innovation

• **Co-creation** of value with the target customers and beneficiaries:
  - Companies collaborate with their customers, or Governments collaborate with citizens in the early stages of the Innovation process to generate creative ideas or solutions to problems.
  - ICT is a key enabler through mechanisms such as crowd-sourcing and ideation

• Sources of knowledge and collaborative networks are now **Global**

• Look to **Global and/or Public sector** issues and challenges as source/drivers of innovation
  - Climate Change, Poverty, Energy
Universities as Locus of Innovation

1. **Innovation Research**
   - Identify Innovation/entrepreneurship opportunities
   - Knowledge assimilation, adaptation & Integration

2. **Innovation Services**
   - Support entrepreneurs and innovators in University Community
   - Assessment, validation and valuation of innovations in the commercialization process,
   - Mobilize Support networks - Mentorship, and incubator/venture capital
   - Business advisory, transactions support, technology transfer/commercialization
University-Industry-Government

- **Open** is the new Normal
- Harness Global/local knowledge sources - assimilation & transformation to create new value opportunities
- Commercialization & appropriation of value is a function of agility/adaptability
- Create **indigenous solutions** that have global relevance (eg. mPesa, Ushahidi, BudgIT)
- Consider **Interoperability** vs Exclusivity
ICT as an Innovation Enabler
Access is not a surrogate for Effectiveness
How to Make the Transition?

• Digital Maturity (Effectiveness) Continuum
  – 1. Awareness, 2. Access, 3. Diffusion,
    4. Exploitation, 5. Innovation

• Specifically
  – Alter ICT Producer/Consumer Ratio
    • Participation in the Regional / Global Software market
The ICT Value Proposition

Create Value in the Economy through ICT

- Reduce the cost of IT Investment in the Economy
- Improve Efficiency and Effectiveness of Government through ICT
- Stimulate Enhanced / New business opportunities in the local ICT sector

Net producers of ICT innovations
Purposeful application of appropriate ICT Apps
Entrepreneurship / Innovation
The ICT Value Proposition

Create Value in the Economy through ICT

- Reduce the cost of IT Investment in the Economy
  - Open Source adoption
  - Indigenous Applications

- Improve Efficiency and Effectiveness of Government through ICT
  - Reduction of unnecessary bureaucracy
  - Public sector efficiency / service delivery
  - Capacity Building & Good governance
  - Transparency
  - e-Inclusion
  - e-Education & Literacy
  - e-Health

- Stimulate Enhanced / New business opportunities in the local ICT sector
  - Entrepreneurship / Innovation
  - New ventures/startups
  - Indigenous Applications
  - Enhanced products & services
  - Enables Knowledge society
  - Economic growth
  - Job creation

- e-Inclusion
- e-Education & Literacy
- e-Health
Key Innovation Enablers

Government As A Platform
- Catalyst / Stimulus

OPEN INNOVATION
CO-CREATION OF SOLUTIONS/SERVICES

MOBILE ECOSYSTEM
MOBILE CHANNELS FOR ACCESS, SERVICE DELIVERY & FINANCIAL TRANSACTIONS

OPEN DATA
DATA IS THE NEW RAW MATERIAL OF THE EMERGING APPS ECONOMY
Government Open Data

• Government Agencies Create and Maintain Authoritative Data
  – Records (regulatory, financial, reports, etc.)
  – Statistics (census, crimes, accidents, etc.)
  – Geodata (resources, transportation, services, etc)

• Governments Share Public Sector data on Web
  – Raw data, not in report form
  – Accessible through APIs
  – Free

• Empowering civil society organizations, businesses to:
  – Access, consume and reuse those data
  – Develop New Applications that bring Data into various Contexts
  – Deliver new and valuable services to citizens

• Enhanced Government and Citizen Engagement & Collaboration
  – Data-rich web applications enable increased transparency, communication, efficiency & innovation
April 11-12th
- Jamaica, Trinidad, Dominican Republic
- Codesprint sites: Barbados, Guyana, Cuba, Suriname, St. Kitts

Thematic Areas: Data Journalism, Agriculture, Tourism, Education, Census 2010

Conference website: http://developingcaribbeanc.org
ICT as an Innovation Enabler
- A Brief Example
Importance of Tourism to Jamaica

...Sustainable tourism requires an active effort to bring about an orderly and equitable distribution of wealth derived from revenues gained in the tourism sector.

• Highest contributing sector to GDP (~16%)

• Some Critical Challenges
  – High leakage rates (50 – 80%)
  – Dominated by large properties, marginalization of SMEs
Emerging market for an alternative tourism product that is heritage-, cultural- or nature-based that thrives on visitor-community interaction

Tourism is an Information-Intensive sector

- Requires free flow of information about the tourism product, service providers and consumer experiences
- Internet and social media are rapidly becoming the dominant channels for access to tourism destination information
- UK study ranked top online search activity: making travel plans (84%), getting information about local events (77%)

Small Operators in the Tourism/Hospitality sector now have access to mainstream channels – the Internet
A Layered Model for Tourism Open Data

**Official Government Open Data**
- eg. statistical summary of industry performance; Tourism assets and products including all registered hotel properties, attractions, craft markets, as well as registered operators

**Tourism Service Provider Data**
- eg. Rates, availability, transportation services, multi-media content; Survey/Research Data

**Local Community-Based Data**
- Eg community-based content (brochures, photos, music, places of interest, commentary, events); community mapping, including boundaries and main Points of Interest (POIs), available to the public in OpenStreetMap

**Crowdsourced Citizen Data**
- eg. Peer reviews, Likes/dislikes; Social media, shared multi-media content: photos, videos

*Community Based Tourism presents a unique opportunity for bottom-up, demand-driven Open Data Initiative*
A Community Mapping Project - *Scope*

- Select three Pilot Communities
- On-the-ground engagement with key stakeholders and persons that will participate in the community mapping Pilot
- Training and technical guidance of community mapping team including:
  - Understanding basic GIS concepts
  - Planning and conducting fieldwork with handheld Android 7” devices
  - Editing streets and Points of Interest (i.e. cultural, heritage, dining, lodging, dining - restaurants, bars, etc.)
  - Uploading additional attribute content associated with Points of Interest including documents, music, images, commentary
- The team of community mappers will produce a comprehensive map of the community including boundaries and main Points of Interest, attached additional multimedia content including music, commentaries, etc.
Three Target Communities

August Town community, a cultural & heritage Mecca

The Rastafarian Indigenous Village, Montego River Gardens, St James

Beeston Spring, Westmoreland, near Sandals "Villages as Business" - Community development
A Community Mapping Project - Objectives

• Use of Open Data approaches and technologies to provide a media-rich information channel (on the Web)

• Facilitate the active engagement of community members in the planning, development and visibility of the community tourism product

• Enhance positive interactions between the community and the tourism agencies, and other service providers within the sector; i.e. transportation, larger hotel chains, tour operators

• Evaluate the potential for this approach to support community tourism initiatives and provide economic lift to the community
Crafting their own narrative...
Attributes of Grass-Roots Innovation

• Empowering local communities.. beneficiaries
• Collaboration between Local community, NGOs, Government, University
• Capacity building; Building on the indigenous knowledge
• Beneficiaries become the Innovators
• Innovation from local context to serve the local need; Scale through replication
Wealth creation through a rethink of the approach to innovation will be the dominant way of stimulating economic growth and poverty alleviation in Caribbean societies.