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Making Cashless Sustainable: *Connecting Academia, the IT Industry and the Business World*

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Outline

Introduction

Why Cashless Nigeria? Why Now?

What are the Benefits and Key Success Factors for sustainable Cashless Nigeria?

How can Academia, the IT Industry and Business be the innovation hub for Cashless Nigeria? – *Case Studies and Key Lessons Learnt*

What would the Nigerian cluster for Cashless between Academia, the IT Industry and Business look like?

Imperatives for Nigeria, the Government and the Nigeria Computer Society

Questions and Answers

There have been varied reactions since the announcement of the Central Bank of Nigeria (CBN) Retail Cash policy in April 2011 and the implementation commenced in Lagos in April 2012

❑ Indeed, Nigeria remains a largely cash-based economy with cash payments contributing over 80% of retail and commercial transactions

❑ In the short-to-medium term, the policy may have limited impact, from an infrastructure and change management readiness perspective

❑ Over the long term, there are real opportunities to reduce costs of cash management, change behavioural patterns of Nigeria and more importantly, create new business opportunities

❑ However, the responses required are not only from Government; it is a holistic response which will entail the creation and strengthening of innovation ecosystems resulting in better skilled human capital, information, infrastructure and finance

❑ This paper discusses the role of Academia, the Business World, the IT Industry and Government in making the Cashless economy sustainable

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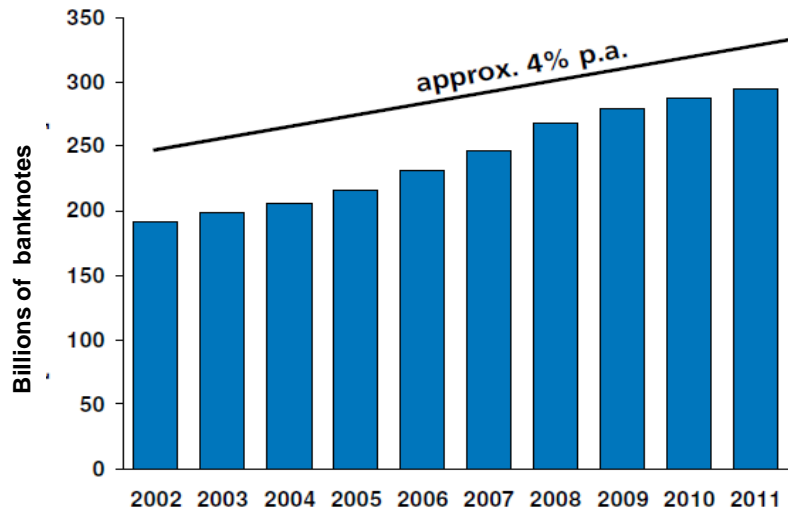
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There is some growth in currency in circulation across the world. However, the rate of growth is quite significant in Nigeria...

Global Currency in Circulation

Source: Giesecke & Devrient (G & D), 2010
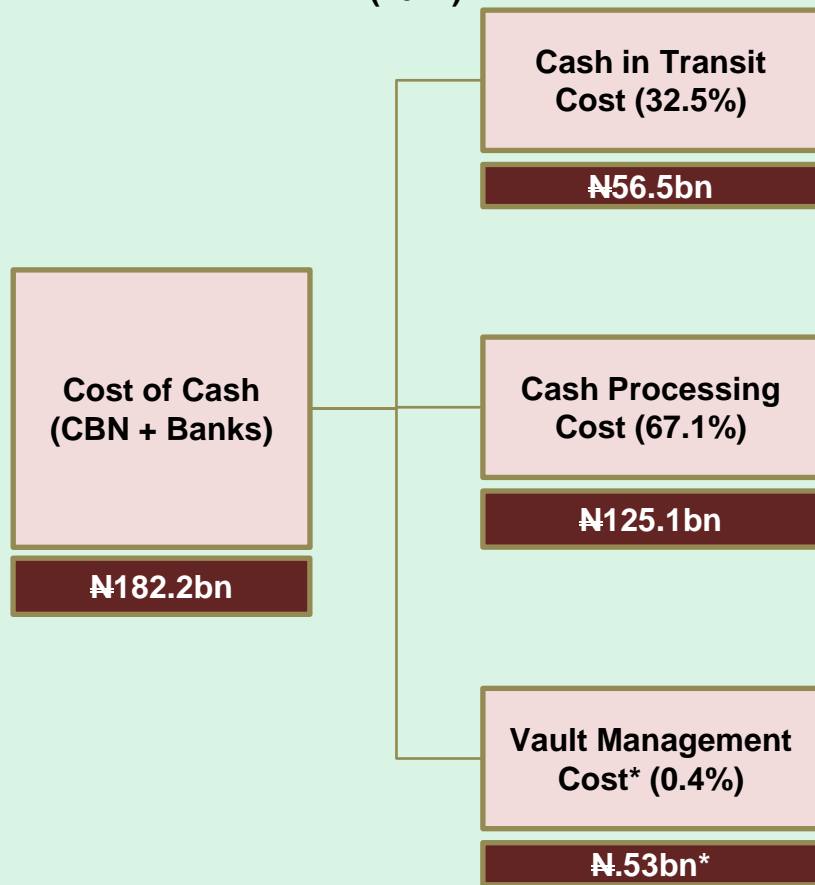
Nigeria Currency in Circulation

Source: Central Bank of Nigeria (CBN) Currency Operations Annual Report, 2011
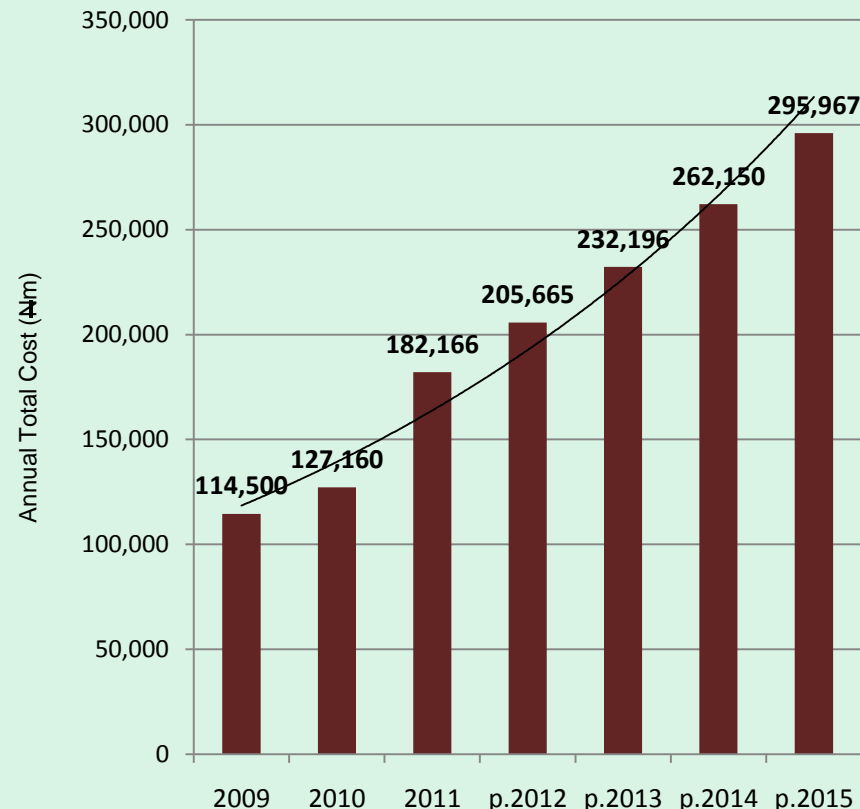
*CAGR: Compound Annual Growth Rate

…The cost of cash to Nigeria's financial system is steadily increasing and direct cost is estimated to reach ₦296bn by 2015…

Direct cost* of cash to Financial system (2011)

Cost of Cash (CBN + Banks)

₦182.2bn

Cash in Transit Cost (32.5%)

₦56.5bn

Cash Processing Cost (67.1%)

₦125.1bn

Vault Management Cost* (0.4%)

₦.53bn*

A projection of the direct cost of cash to Financial System

Annual Total Cost (₦m)

Year	Value
2009	114,500
2010	127,160
2011	182,166
p.2012	205,665
p.2013	232,196
p.2014	262,150
p.2015	295,967

CAGR: 10.5%

*Note: Bank Vault Insurance Coverage- Assumes insurance premiums of 0.1%; does not include Vault costs for CBN

…resulting in increased cost of banking services. However, the actual cost of services is not evenly borne by the banking population

Branch Cash Transactions – Number of Transactions

Branch Cash Transactions – Value of Transactions (₦'Bn)

	Number of Transactions	Value of Transactions (₦'Bn)
Total	100%	2,076
₦0-100,000	86%	491
₦100,001-150,000	4%	115
₦150,001 and above	10%	1469

10% of number of cash transactions are above ₦150,000

But accounts for 71% in value of cash transactions
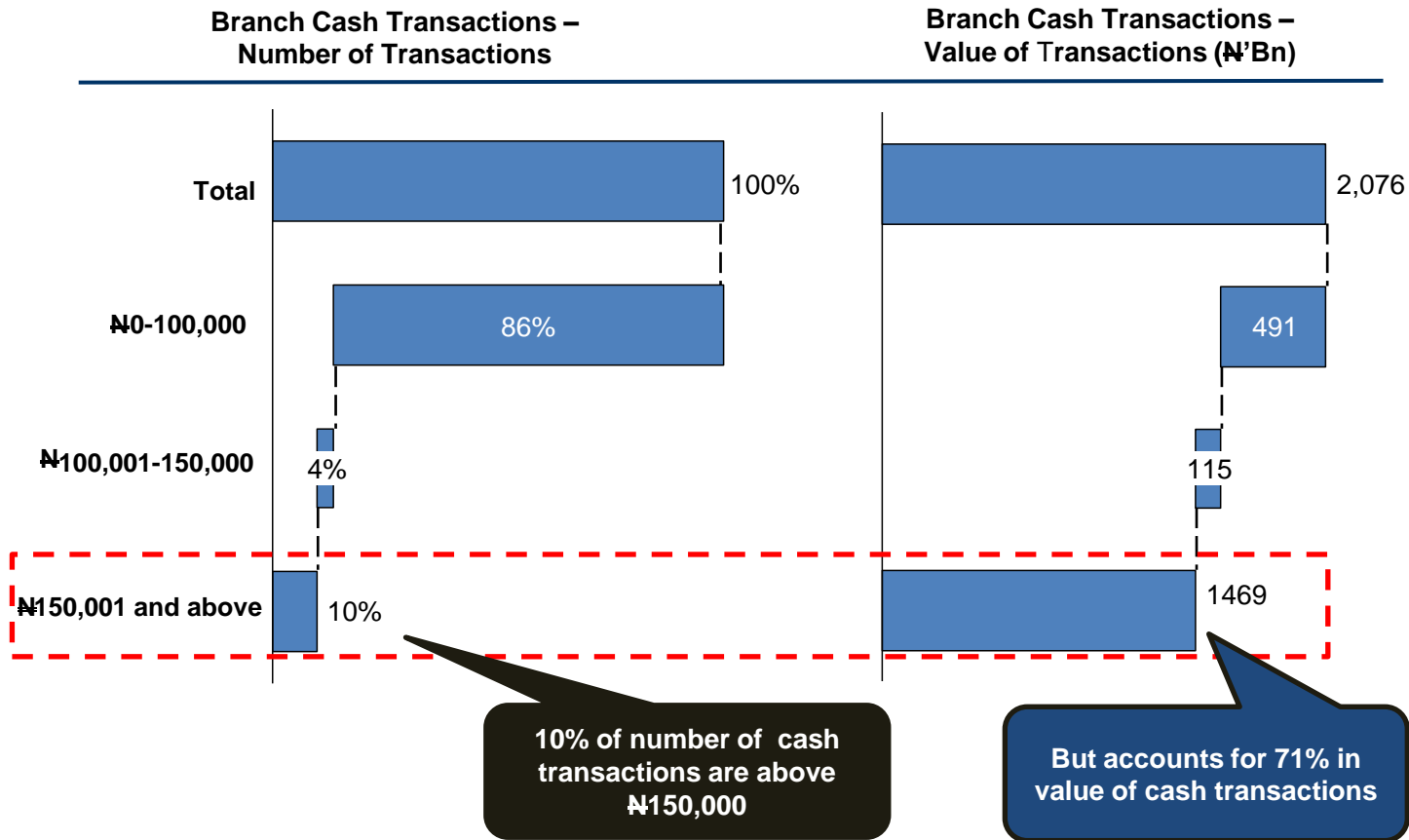
Only 10% of branch cash transactions are above ₦150,000, but they make up ~71% of the value of cash transactions.

The CBN's retail policy is expected to reduce operational costs, apportion costs appropriately/ reduce costs to banking customers and drive the growth of e-payments

1a **Cash Withdrawals and Lodgements**

- *Daily cumulative limit of* ₦*500,000 for individuals and* ₦*3,000,000 for corporates on free cash withdrawals and lodgements*

1b **3rd Party Cheque Encashment**

- *3rd party cheques above* ₦*150,000 no longer eligible for encashment over the counter; value to be received via Clearing*

2 **Merchant / Retailer Cash Arrangement Transition**

- *Banks to cease cash in transit lodgement services to merchant-customers*
- *Merchants to engage the services of the CBN licensed cash-in-transit (CIT) companies for cash movement*

3 **Interoperability of POS Transactions**

- *No exclusive acquirer agreement or contract in Nigeria by card schemes to achieve interoperability of local currency POS transactions*

Other supporting initiatives include:

- *Cashless Lagos programme*
- *New POS Guidelines, Deployment model & POS Settlement Process upgrade*
- *Industry dedicated connectivity channel for POS traffic*
- *Centralised Direct Debit mandate management and introduction of Direct Debit products*
- *Cash Holding Model Transformation*

- *Licensing of Payment Terminal Service Providers (PTSP)*
- *POS Standardisation and Bulk procurement to accelerate rollout*
- *Integrated Retail Payments Transformation*
- *Exposure draft on Securities Settlement*

Source: CBN Circular, May 2011

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There are significant benefits to Nigeria in following through the retail cash policy to reduce cash in the economy

- Growth and Efficiency in Economy

- Promote Financial Inclusion

- Reduce Economic and Violent Crimes

Benefits of a Cashless Economy

- Reduce Cost of Managing Cash

- Adequate Budgeting and Taxation

- Guarantee Convenience and Safety

Key success factors to making cashless sustainable include:

❑ Broad based consultation, i.e. multi-stakeholder and multi-industry approach to drive inclusion

❑ Introduction of incentives to complement the sanctions and communication initiatives

❑ Realistic phasing and timing of the deployment

❑ Disciplined Program Management, benefits realization tracking and flexibility to change course to respond to implementation issues

❑ Infrastructure requirements planning and deliberate build-out

❑ Communication and Change Management – targeted information dissemination to drive consumer awareness and education

❑ Appropriate dispute resolution mechanism and financial 'ombudsman' to manage case exceptions

❑ Integration between government and private sector initiatives

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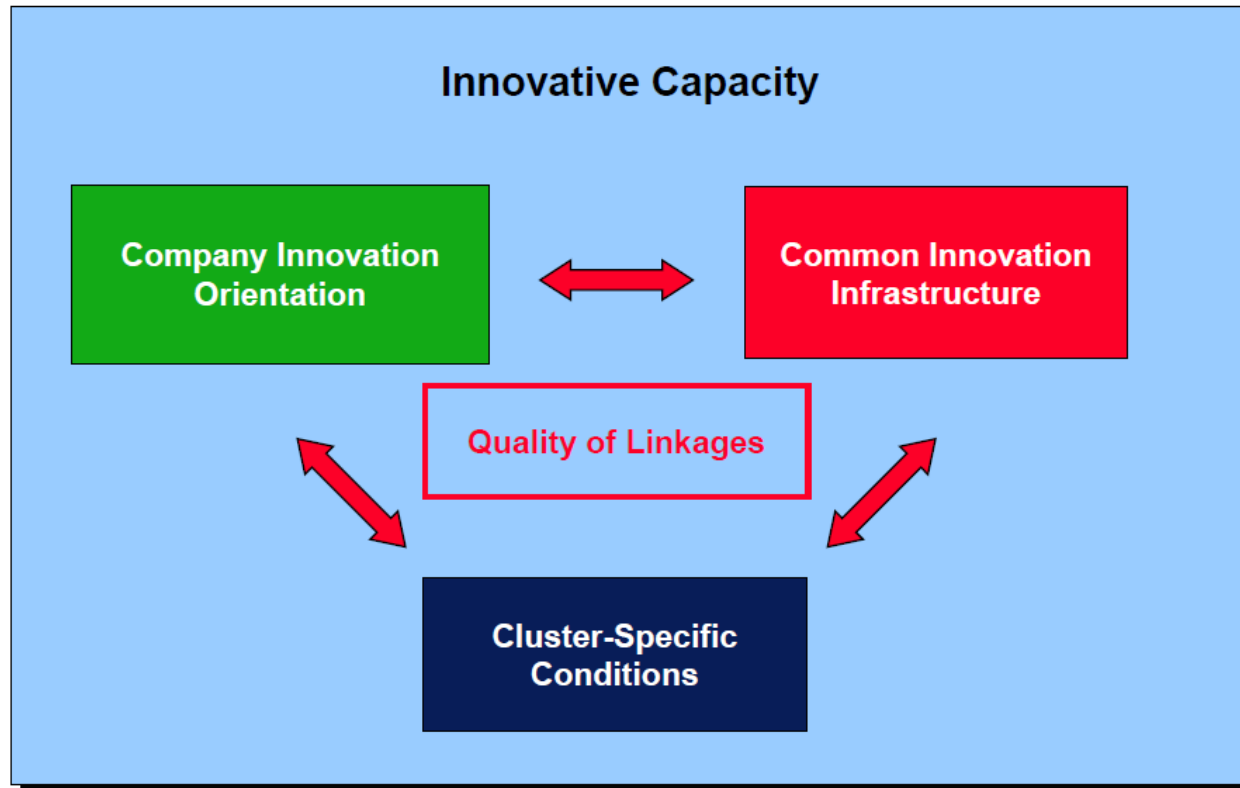
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Globally, academia, industries and business have successfully built clusters to drive innovation across various industry segments

Innovative Capacity

Company Innovation Orientation ↔ Common Innovation Infrastructure

Quality of Linkages

Cluster-Specific Conditions

Clusters are geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities (external economies)

Source: European Cluster Policy, Michael E. Porter, 2008

The Boston Life Sciences Cluster is ranked as the No. 1 US Cluster for Life Sciences and is home to major academic institutions and centers of life sciences excellence, all closely located to create a global hub

The Boston Life Sciences Cluster
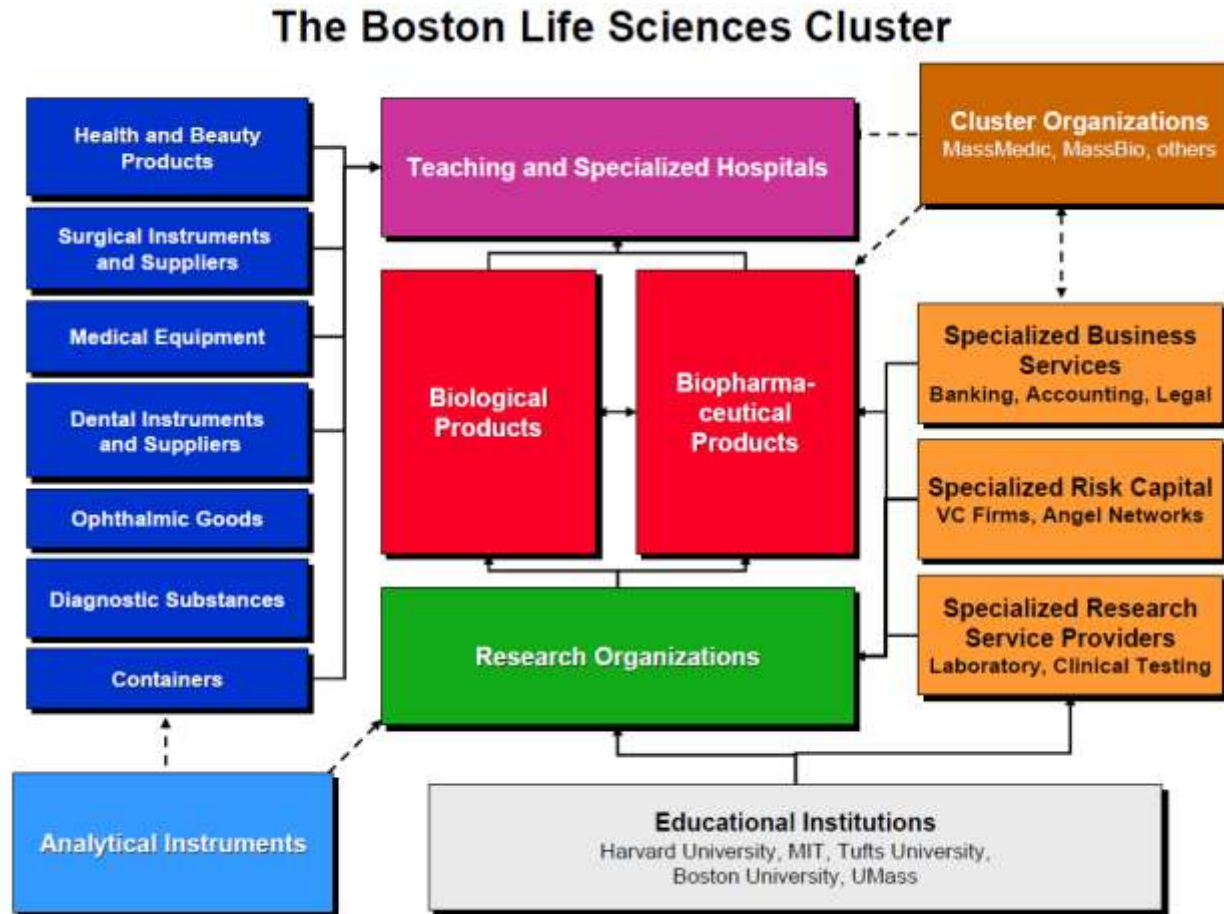
It is one of the largest and well established centers for biotechnology and medical device research and development; responsible for 7% of the world's pipeline for new drugs.

14

Source: European Cluster Policy, Michael E. Porter, 2008

The founding of Stanford's Industrial Park, the world's first tech-oriented office park, in 1951 triggered the creation of the IT Cluster in Silicon Valley, California

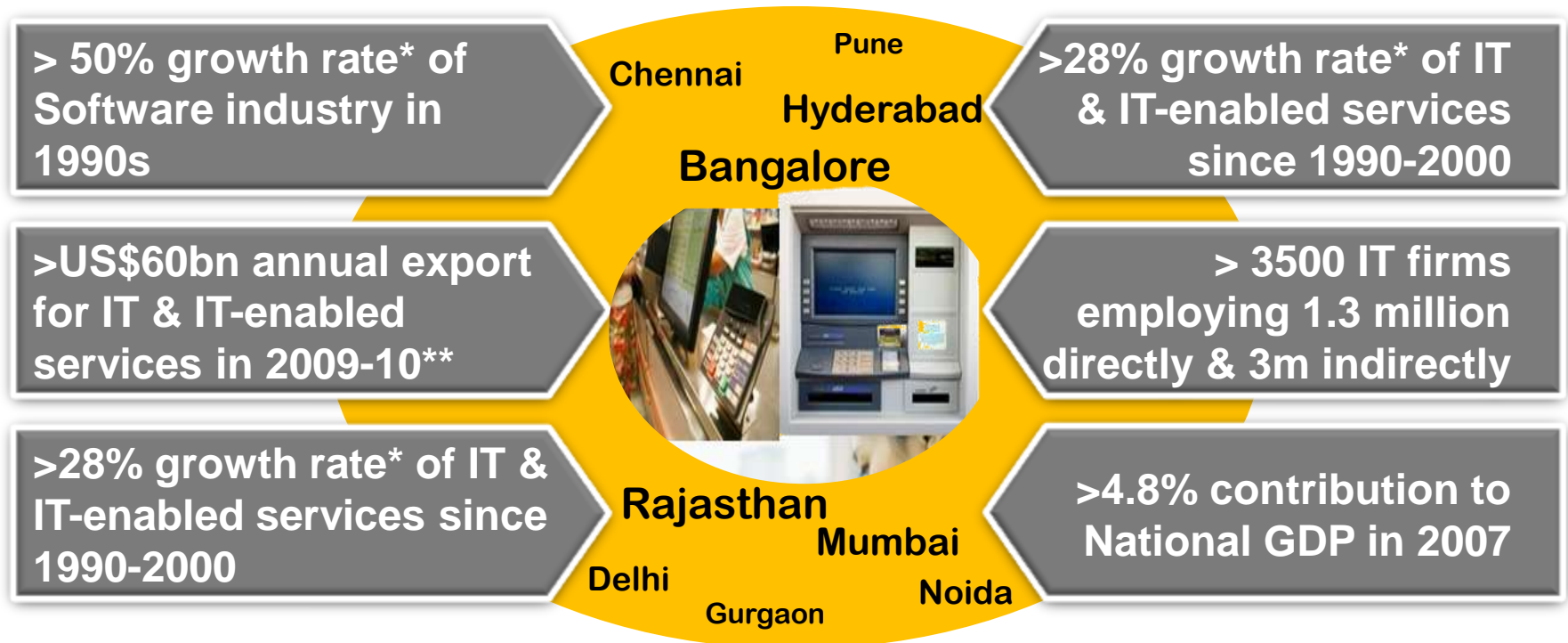Fueled by a growing venture capital community and solid technical foundations, every decade after the 1960s saw a major technological wave that shaped Silicon Valley, enabling the cluster to build on itself and capitalise on rising technological cycles leading to a shift from hardware to software

Silicon Valley IT Cluster Sub-Clusters

- Electronic Components & Assemblies
- Software
- Communication Services
- Peripherals
- Computers
- Fibre Optic Cables

Internet-Based Services (IBS) Cluster

- Media & Entertainment
- E-Commerce
- Search & Content
- Social Media
- Cloud Services (Software as a Service)

Some Resultant Companies

- YouTube, Netflix
- E-bay, Amazon
- Yahoo, Google
- FaceBook LinkedIn
- VM Ware, Sun

Cluster Eco-system

- **Government Initiatives** Innovation Hub (iHub)
- **Specialised Risk Capital** Venture Capital, Angel Networks, Private Equity, Hedge Funds
- **Research Institutions** Xerox Research Center, NASA Research Centre, Federal Research Institutions
- **Educational Institutions** Stanford, CalTech, UC Berkeley,

There are a total of 138 recognised clusters and 350 SME clusters spread across India

One of the facilitating factors that enabled the rise of the IT industry in India is the evolution of IT Clusters

> 50% growth rate* of Software industry in 1990s

>28% growth rate* of IT & IT-enabled services since 1990-2000

>US$60bn annual export for IT & IT-enabled services in 2009-10**

> 3500 IT firms employing 1.3 million directly & 3m indirectly

>28% growth rate* of IT & IT-enabled services since 1990-2000

>4.8% contribution to National GDP in 2007

Pune
Chennai
Hyderabad
Bangalore

Rajasthan
Mumbai
Delhi
Noida
Gurgaon

Today, most Fortune 500 companies outsource some of their software-related work from India

2002

Technology Cluster in the Thar Desert of Rajasthan, Jaipur, India

Policy	No. of Tech Companies	Use of Technology
State Government banned the purchase of computers for personal use	**10 Small technology businesses**	**Most state's businesses have little or no automation**

Environment	Eligible Workforce	Impact
Very limited use of computers	**Women not allowed to work after sunset in any industry**	**No other clusters in the area**

Source: Accenture research, Articles

Technology Cluster in the Thar Desert of Rajasthan, Jaipur, India

Policy

Entrepreneurs banded together to educate the state government about technology and help craft more tech-friendly policies

No. of Tech Companies

Over 100 global technology and related businesses (Infosys, Wipro, Tech Mahindra, Genpact) including banks

Use of Technology

Most businesses educated on and utilising technology such as rug/ carpet making

Environment

Many traditional industries are now employing modern IT practices in their operations

Eligible Workforce

Employees including Women allowed to work 24/7

Impact

Other industry clusters have sprung up, riding off the back of technology - rural tourism, minerals, leather, etc.

In 2006, Mahindra World City ($2 billion investment by Mahindra & Mahindra and the Rajasthan government) opened. Expected to be fully functional by 2014, over 100,000 people will be employed and companies housed there are expected to create over $3 billion in annual exports

Source: Accenture research, Articles

Clusters increase productivity/ efficiency, stimulate and enable innovation(s) and facilitate commercialisation/ industrialisation and new business opportunities

❑ Productivity/ Efficiency - Highly skilled /specialist can be employed to serve members of clusters

❑ Innovations(s)
  – Deep and rich talent pools and better infrastructure

❑ Industrialisation/ New Business opportunities

❑ Sectoral/ regional economic development with unified/ integrated approach to problem solving

❑ Financially weak members of each clusters are able to survive by sharing expenditure - common facilities like canteen, welfare,first aid etc. shared by members.

The role of governments in providing enabling environments and supporting policies cannot be understated.

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Nigeria is now ranked 123 out of 141 countries overall in the 2012 Global Innovation Index. The country was ranked 96 in 2011 and 70 in 2009
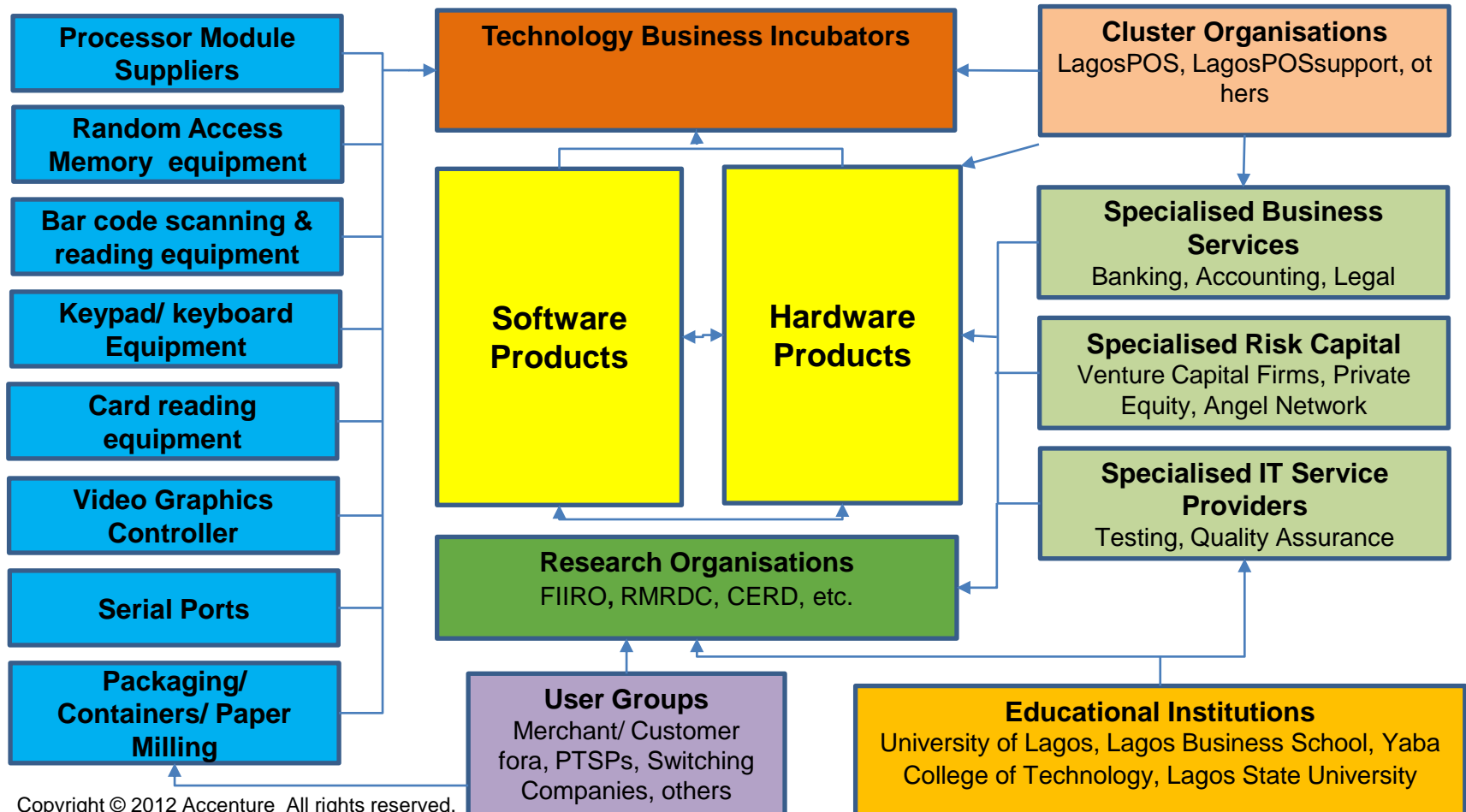
❑ The index measures a variety of innovation input and output measures

	Nigeria	India
Global Innovation Index	**123**	**64**
Innovation Efficiency Index	**17**	**2**
Research and Development	109	55
Infrastructure	134	78
Computer & Communications Service Exports	131	4
Knowledge Absorption	95	81
Innovation Linkages	123	59
Knowledge Creation	113	54
Knowledge Impact	112	67
Knowledge Diffusion	111	33

Nigeria requires deliberate policy and interventions to position for innovation in a sustainable manner

Source: The Global Innovation Index 2012, 2011

Nigerian Cluster for Sustainable Cashless Economy

Possible Cluster Arrangement for Lagos – What role do you see the NCS playing?

Processor Module Suppliers

Random Access Memory equipment

Bar code scanning & reading equipment

Keypad/ keyboard Equipment

Card reading equipment

Video Graphics Controller

Serial Ports

Packaging/ Containers/ Paper Milling

Technology Business Incubators

Software Products

Hardware Products

Research Organisations
FIIRO, RMRDC, CERD, etc.

Cluster Organisations
LagosPOS, LagosPOSsupport, others

Specialised Business Services
Banking, Accounting, Legal

Specialised Risk Capital
Venture Capital Firms, Private Equity, Angel Network

Specialised IT Service Providers
Testing, Quality Assurance

User Groups
Merchant/ Customer fora, PTSPs, Switching Companies, others

Educational Institutions
University of Lagos, Lagos Business School, Yaba College of Technology, Lagos State University

Source: Accenture, 2012

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Clusters engineered from the top down don't usually work…

❑ Government alone cannot make the magic of a thriving cluster happen; but with enabling policies and environment, can contribute to making it happen

❑ Cluster development is best driven by entrepreneurs or industry think tanks who provide the lead and lobby the government to provide the required support. e.g.Thar Desert in Rajasthan, India

❑ The real opportunity is to develop, strengthen and diversify innovation ecosystems with better skilled human capital, information infrastructure and finance

Imperatives for the Nigeria Computer Society

❑ Push for professionalism and continuous professional development
❑ Align agenda, focus on engagement and lobbying of key stakeholders to promote growth of the industry
❑ Coordination and collaboration to create viable Clusters with strong linkages in specific niche industries, utilising technology as a platform
- – IT/ Communication
- – Media Technology
- – Film and Entertainment
- – Etc.

❑ Creating linkages and appropriate ecosystem to enable Innovation
- – Creation of Innovation Funds and Angel Networks in partnership with the FSI
- – Industry Innovation Clusters with association with industry associations e.g. NACCIMA
- – University Innovation Clusters in conjunction with NUC/Universities

❑ Develop appropriate information infrastructure to drive innovation

Imperatives for the Nigerian Government (State and Federal Level)

❑ Government should play different role at different stages
  – Formative Stage: Government as an enabler to provide the right foundation for success
  – Growth Stage: Government as a Participant and key customer to boost adoption
  – Stability Stage: Government as a Facilitator to build new capabilities & extend to other sectors

❑ Provide enabling environment and supporting policies and infrastructure as policy has a huge impact on strengthening the cluster
  – Economic development programs
  – Appropriate information infrastructure to drive innovation
  – Multiple incubators for early stage companies

❑ Deliberate funding programs through MDAs or special agencies to facilitate Job growth, economic development, and commercialisation/ industrialisation
  – Research Matching Grant Program: Match funding for academic institutions
  – Internship Challenge Program: Fund interns working in target cluster companies
  – Accelerator Program: Provide capital for early-stage companies in target
  – Small Business Grants: Federal funds to encourage growth of small businesses
  – Small Business Matching Grant Program: State Governments match funds for federal small business grants
  – Tax Incentive Program: Create tax incentives and other offerings for companies to locate and expand in target cluster locations by state governments

Imperatives for Academia

- ❑ Improve overall quality of education, especially technology and ancillary IT Services

- ❑ Provide linkage between academic curriculum and real IT business world
  - Improved relevance of Academia to business world and IT Businesses

- ❑ Provide enabling environment for innovation in academic environment
  - Relevant research and curriculum
  - Innovation programmes

- ❑ Collaboration with the Business world to provide comprehensive education for technology students
  - Include Business courses in Technology curriculum
  - Internships served in Business roles should be considered as part of overall Internship programmes

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