

FRAMEWORK FOR THE NIGERIAN NATIONAL SYSTEM OF INNOVATION

EXECUTIVE SUMMARY

The Nigerian people, the most populous black nation are uniquely diverse, endowed with abundant natural and human resources. The human resource is widely acclaimed with unequalled attributes of resilience, intelligence, hard work and enterprise. Nigeria therefore needs an effective and resilient innovation system to harness these resources and if we were to improve the way of life of our people through overcoming the great challenges in our nation today like poverty, wealth creation, insecurity, environmental issues, sustainable and productive industries, curing diseases, affordable and robust education etc. A resilient and effective innovation system which caters for all the diversities requires the right conditions for innovation and entrepreneurship where people have the motivation, resources, creativity and timing to absorb, generate and apply new ideas that have value. It requires team work and patriotism with conscientious and continuous effort at building capability into the National System of Innovation.

This document suggests the framework for the National System of Innovation (NSI) for thinking and action by Government and the private sector organisations in promoting successful innovation, and its implementation and diffusion in the country. Innovation should be a core activity of the public and private sectors. The public sector must see innovation as a core activity that helps to improve performance and increase public value; respond to the expectations of citizens and adapt to the needs of users; increase service efficiency and minimise costs. How to seek out and foster innovation from all levels is crucial to continual development and improvement. Managing risks and incubating new ideas means that there is a need for prototypes, as well as the willingness to invest time and resources for their evaluation. The replication of successful pilots and prototypes is often achieved centrally through legislation, or through the dissemination of evaluations, but in contrast to these ‘idea-push’ models, the private sector will emphasis ‘diffusion’ rather than dissemination.

In the public sector it is unlikely that organisations will expire if they do not develop new ideas. In the absence of the profit motive, it is essential to provide other incentives for individuals and organisations, such as greater recognition of success amongst one's peers. Particular barriers to innovation that must be overcome in the public sector may include a culture of risk aversion, and a focus on short-term delivery pressures, both of which can hinder organisational development and progress. Whilst incremental innovations can have some success without the need for policy or legislative modifications, systemic changes are often required in order to create higher levels of successful innovation. This may mean radically reducing the number of targets, planning and monitoring requirements as this would create freedom for creative thinking and an examination of other possibilities. Aligning funding streams with improvements in performance and outcome would act as a stronger incentive. Technology has always played an important role in driving innovation, and it will continue to do so in the future, but for many companies technology will gradually move from being a driver of innovation to becoming an enabler of innovation. Today there are new drivers of innovation like Green Growth which are gaining importance and becoming just as important as technology once was.

This framework will seek to create a strategy for fostering innovations at the National, Sectoral, Regional, State, and Local levels by focusing on five key parameters: Platform, Inclusion, Ecosystem, Drivers and Discourse. This is targeted at redefining innovations to go beyond formal R&D parameters; facilitate platforms of innovative solutions that lead to inclusive growth for the people and by the people; foster an innovation eco-system across domains and sectors to strengthen entrepreneurship; focus on key drivers to ensure green growth, multidisciplinary approach, sustainability, durability and quality and expand the space for dialogue and discourse on innovation. A high level organ called the Federal Innovation Council will be involved in facilitating Sectoral, Regional, State, and Local level innovations. This will create an eco-system to boost innovation performance in the country. The over goal is to make Nigeria the first choice in innovation outsourcing globally.

This is a working document, and we welcome any comments and contributions or position papers you may have. Please visit www.fmst.gov.ng to submit your contributions.

1.0 PROPOSED FRAMEWORK FOR THE NATIONAL SYSTEM OF INNOVATION

INTRODUCTION

Innovation can be seen as ‘new combinations’, it can be separated from invention as something brought to the market by the entrepreneur and it can be specified as respectively new products, new processes, new raw materials, new forms of organisation and new markets. An innovation is the implementation of a new or significantly improved product (good or service) or process, a new marketing method or a new organisational method in business practices, workplace organisation or external relations (OECD Oslo Manual, 2005). Innovation is a continuous process, where a new idea is created, transformed into a concept for implementation of a new or significantly improved product/service through to commercialisation. Innovation is not invention. An innovation system is about people: the knowledge, technology, infrastructure and cultures they have created or adopted, who they work with, and what new ideas they are experimenting with. An innovation system is an open network of organisations both interacting with each other and operating within framework conditions that regulate their activities and interactions. It becomes quite clear that an innovation system is a social system, which means that innovations are the result of social interaction between economic actors. And it is an open system, which interacts with its environment. These three components of the innovation system: networks; innovation activities; and framework conditions, collectively function to produce and diffuse innovations that have, in aggregate, economic, social and/or environmental value. National systems of innovation references how different national systems create diversity, reproduce routines and select firms, products and routines (Lundvall, 2005). It is also obvious that a focus on co-evolution of production structure, technology and institutions is useful when it comes to understanding the historical transformation of national innovation systems.

Innovation has many dimensions that make defining it a complex issue. An Engineer’s perspective on innovation might be completely different from that of a social entrepreneur. What a business that creates new technology thinks about innovation may be different to the attitude of a firm that adopts existing technology. Innovation can be radical and disruptive, but more often it is incremental. Innovation can be based heavily on technological development or not at all.

Individual innovations need not always be immediately successful to have impact. Trial and error – learning what not to do – is an important part of getting it right in the long run. Innovation is about market experimentation, the implication being that failure comes with the territory. Yet innovations can be so successful that as they create new markets, or revolutionise existing markets, they can in turn sweep away entire economic sectors or transform communities in their wake. This is what makes innovation so important to understand and to measure.

There is need for a delicate balance and mix between two modes of innovation. On the one hand innovation activities may give main emphasis to promoting R&D, utilising and creating access to explicit codified knowledge (STI - mode of innovation). On the other hand there are innovation strategies mainly based on learning by doing, using and interacting (DUI-mode of innovation). The main idea of this systematization is to show that not all innovation processes in firms have to be developed or/and implemented in co-operation with R&D institutions (universities, research institutes, etc.). The majority of innovative SMEs are not linked to any R&D institution. Few of them have their own R&D departments (in-house R&D), while others are innovating due to their skilled personnel. Innovation is a driving force of welfare and contributes to increasing the standard of living.

OECD countries around the world and was developed to build an internationally consistent way of measuring innovation. So innovation is more than just the generation of novel ideas or the dissemination of knowledge, it is about making a change or doing something in a new way. This second element of innovation, implementation, is crucial as only those novel ideas that are implemented can have an impact on society. It is this implementation element that separates knowledge and invention from innovation. The OECD recognises that innovation is more than expenditure on research and development (R&D) and patenting new technology. Innovation-active firms are more likely to invest in purchasing new equipment, training and marketing than investment in R&D or acquiring intellectual property. Innovation does not always require spending money either.

Gross Domestic Product (GDP) per capita is one measure of a nation's living standards. GDP per capita can be increased by increasing the number of hours we work or by improving the

efficiency with which we work (labour productivity). In the long term, contributions through increased work hours will be limited by an ageing population and by the maximum number of hours people are willing to work. Therefore, sustained growth in living standards will have to come mainly from labour productivity increases. Labour productivity is of critical importance because of its association with the standard of living. Productivity is about using our finite resources as efficiently as possible and maximising our efforts in the pursuit of prosperity. There are a number of avenues to increase productivity but innovation is the most significant factor. Increases in labour productivity can occur through increases in the capital stock to labour ratio (capital deepening), economies of scale, increases in labour quality, intangible capital investment (skills, R&D, new technology or business models etc.), framework conditions and other factors.

Macroeconomic conditions, the regulatory environment and microeconomic reforms can affect short-run and long-run productivity changes through their impact on firm investment and other resource allocation decisions. Innovation can increase productivity through the creation of higher value products, more efficient production processes, more effective workplace organisation and opening up new markets. Innovative entrepreneurs and workplaces boost productivity by transforming their businesses' capabilities, problem-solving, collaborating with customers, suppliers and competitors, adapting existing technologies and processes to new uses, and creating solutions to meet customers' needs. This is why innovation is considered the only significant avenue for sustaining productivity growth, and therefore our standard of living into the future.

This work addresses new forms of innovation taking place in the private sector - within companies as well as between companies. A public perspective is taken by exploring the policy implications of a new nature of innovation and how the public-private-partnership (PPP) can best evolve a robust National System of Innovation for Nigeria. This document is to promote public discussion on redesigning a new framework for the NSI. It is noteworthy that when discussions are exhausted, the understanding of a new nature of innovation and the positive constructive feedbacks will enrich the document and chart a viable course for economic prosperity for our nation Nigeria on the pedestal of innovation. Stakeholders across the country will certainly be able to relate to the issues and agreed on the need to identify the policy implications related to a

new nature of innovation and as well lay claim to ownership of the new NSI for a successful participatory implementation.

2.0 THE FRAMEWORK.

In line with the Transformation Agenda and Nigeria Vision 20:2020, it is practically impossible for Nigeria to become one of the top 20 economies by the year 2020 without entrenching Science, Technology and Innovation. The Federal Executive Council had earlier approved the National Science, Technology and Innovation (STI) Policy for the Federal Ministry of Science and Technology (FMST). The onus is on FMST to be the national vanguard on innovation. The STI has been launched and revealed to the public. Innovation is cross cultural. Innovation is the engine for the growth of prosperity and national competitiveness in the 21st century. To take this forward, an indigenous model of development suited to Nigerian needs and challenges must be created.

The National System of Innovation is an open network of organisations both interacting with each other and operating within framework conditions that regulate their activities and interactions. These three components of the innovation system: networks; innovation activities; and framework conditions, collectively function to produce and diffuse innovations that have, in aggregate, economic, social and/or environmental value. The concept of the innovation system is depicted in Figure 1 with the cycle in the centre of the figure (the propeller) represents the concept of innovation and entrepreneurship. Entrepreneurs and innovators (individuals and organisations) usually start by seeing an opportunity or problem to act upon. Knowledge gathering, transformation and/or creation follows in an attempt to find ideas that address their needs. A range of options are usually generated through this process, several of which are trialled internally and in the market. The ideas underpinning the innovations, if not the business models and technologies themselves, are scaled-up and spread through society to generate economic, social and environmental impacts. The successful innovations inspire others, or generate problems for others, with the result that they are copied or countered by other innovations. The creative-destructive cycle continues.

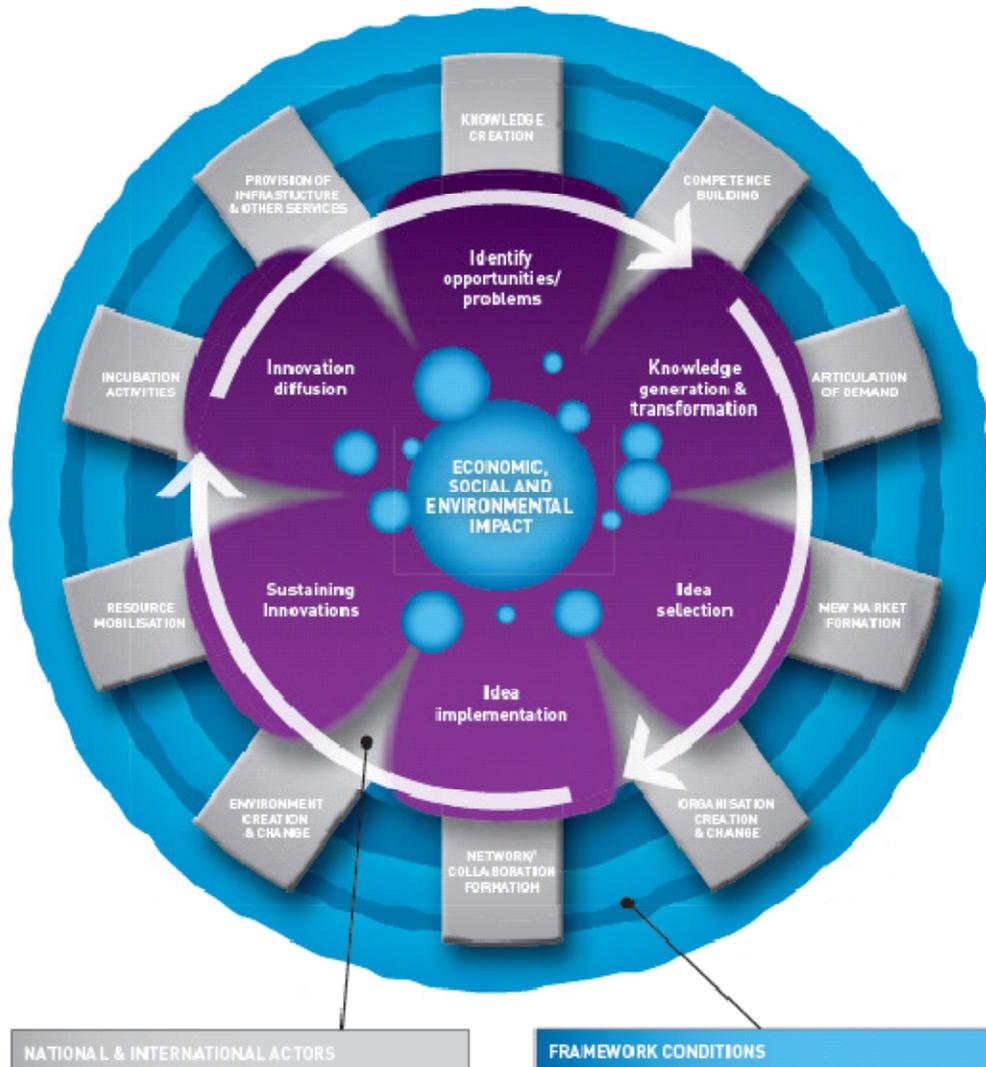


Figure 1. The Innovation System (Adapted from OECD)

The Framework of the National System of innovation are conditions also known as institutions or rules of the system which comprise a set of established practices, rules or laws that regulate the interactions between individuals and organizations . Framework conditions should control the momentum of the innovation cycle either by resisting or accelerating it. It is intended to create markets, or make markets more efficient. This Framework conditions are to be national, but will also bring to bear the history of our technology and at the various sectors, regions and global networks that innovators operate in.

The Balance between Private and Public Organisations

The private sector is that part of the economy that is run by private individuals or organisations, generally with a for-profit motive, and is not controlled by the state. The public sector comprises organisations that deal with the production, delivery and allocation of goods and services by and for the government or its citizens, whether national, regional or local. The community sector (also called the third sector) encompasses social activity undertaken by organisations that are non-profit, non-governmental or voluntary.

A systems approach to innovation emphasises the close interaction between the private, public and community sectors to achieve the functional outcomes of the system — the development and diffusion of innovations. Each innovation activity is the sum of that activity within and across these three sectors.

The Role of Industry and Community Sectors

Some innovation activities are mainly market-oriented, involving entrepreneurs and innovators trialing new goods and services in the market and experimenting with new processes and business models to find the most efficient or profitable outcomes. These activities are almost always the domain of private enterprise.

The economy and society benefit from innovation, while benefits also accrue to individual businesses and entrepreneurs. Given the evident advantages to business in terms of increasing profitability, efficiency and exports, it is in the interests of industry to promote and increase innovation where the gains from innovation are greater than ‘routine’ alternatives and the risk is sufficiently manageable. The gains can be economic, social or environmental. The community sector – which includes social enterprises, private non-profit organisations, representative bodies and community organisations – innovates to achieve social and environmental goals and increasingly uses market approaches to achieve behavioural change.

The innovation activities of the business and community sectors can combine to influence and create the right framework conditions, such as a culture of entrepreneurship and open

collaboration, so that innovation can flourish in their own organisations and stimulate innovation in others.

The Role of Government

Governments make decisions and investments that, broadly speaking, minimise risks and build the resilience of the Nigerian NSI as well as stimulating innovative activities. Things that might be taken for granted, such as high quality infrastructure or healthy and well educated workers are the result of policies and complementary investments by the governments at all levels.

Innovation policy encompasses many elements of research, industry, social inclusion, education, competition and trade policy that have an impact on the innovation system. Governments' responsibility in an innovation system is to supplement and facilitate the collective activities of the system through policy strategies and programs rather than trying to control all elements or be the major funder of innovation projects. Government can have a significant effect on business innovation through framework policies such as education policy, intellectual property law and business regulation but its ability to influence rates of innovation through direct financing innovation projects is limited. The role of government is better depicted in Figure 2.

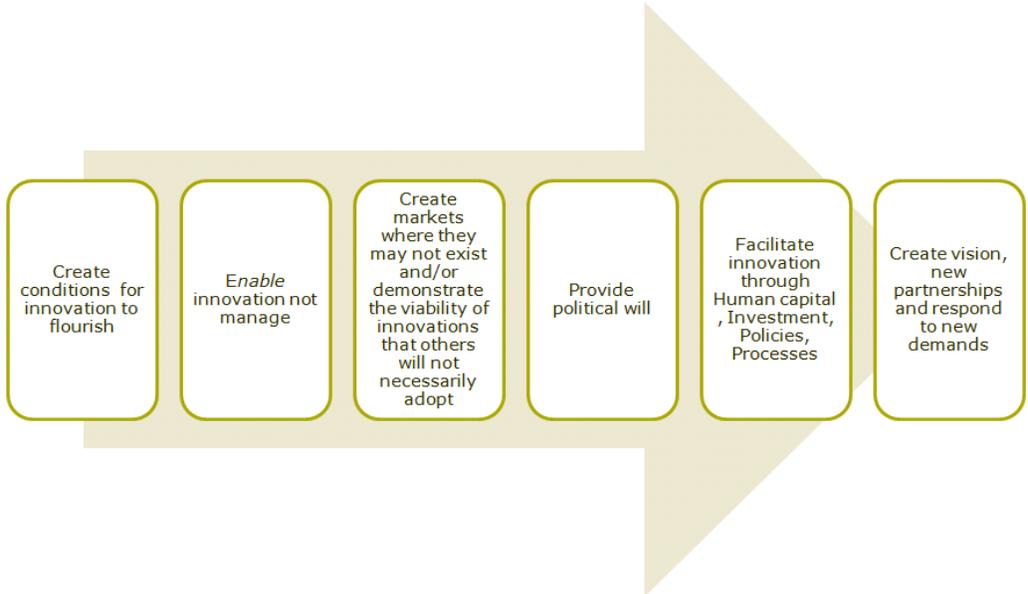


Figure 2: The Role of Government in the NSI.

3.0 INSTITUTIONAL FRAMEWORK

The institutional framework shall involve the setting up of innovation councils at all levels of government to fast track the process of innovation in the country. This framework will seek to create a strategy for fostering innovations at the **Federal, Sectoral, Regional, State and Local** levels as shown in Figure 3.

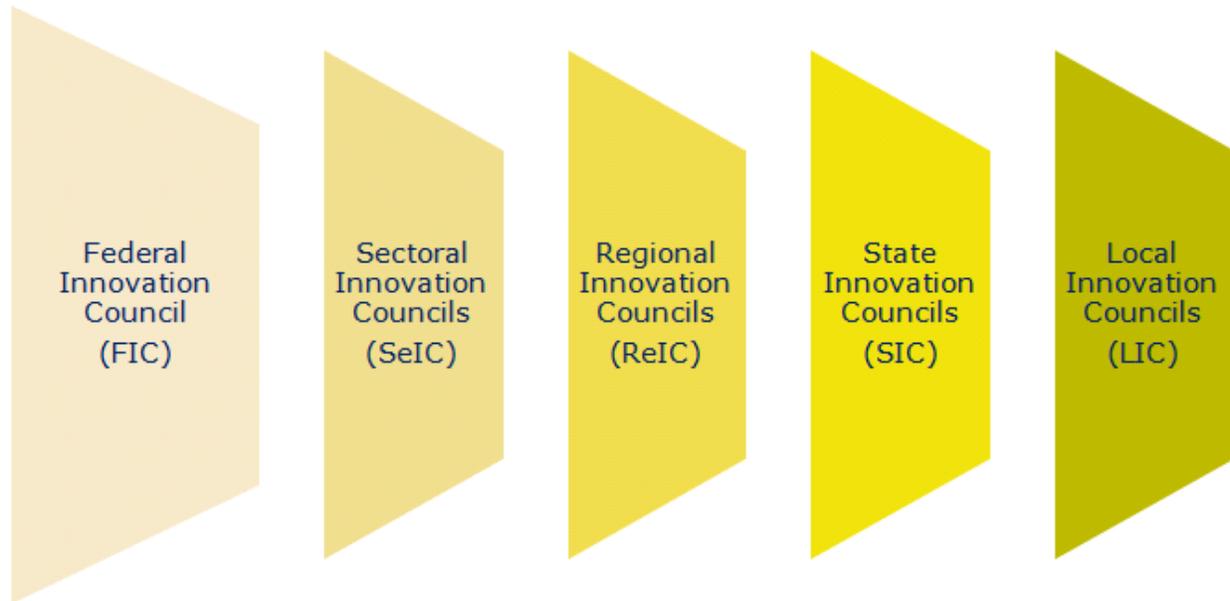


Figure 3 : The Innovation Councils

The strategy for fostering innovation at all levels of the councils will be through focusing on five key parameters: **Platform, Inclusion, Eco-system, Drivers and Discourse** as shown in Figure 4. This is targeted at redefining innovations to go beyond formal R&D parameters; facilitate innovative solutions that lead to inclusive growth for the people and by the people; foster an innovation eco-system across domains and sectors to strengthen entrepreneurship; focus on key drivers to ensure green growth, multidisciplinary approach, sustainability, durability and quality and expand the space for dialogue and discourse on innovation.

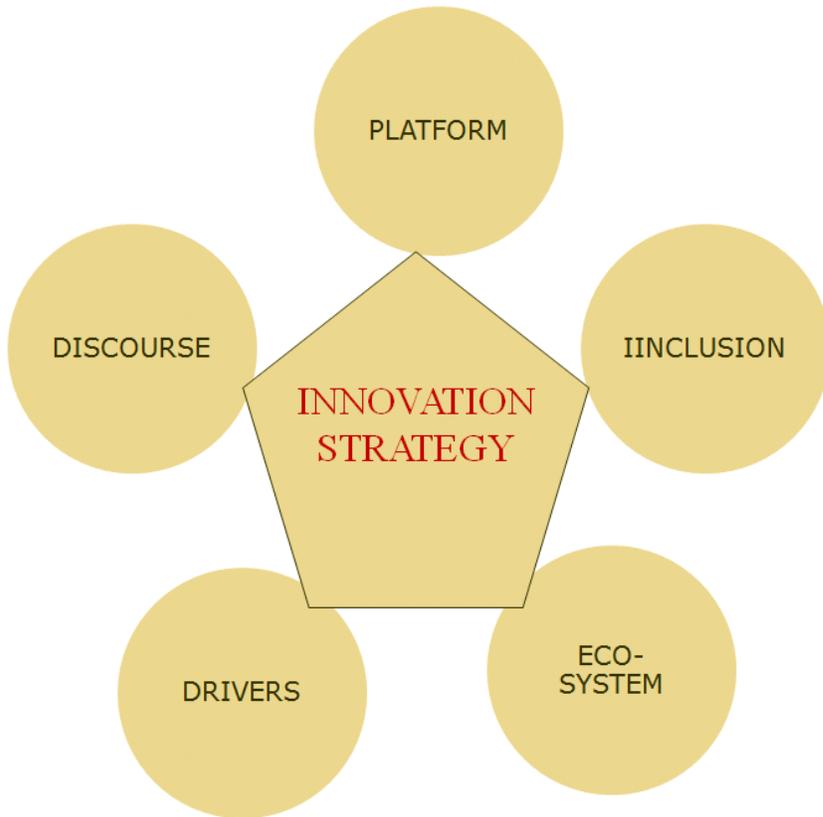


Figure 4. The Five Parameters of the Innovation Strategy

The interrelationships within the proposed NSI as it pertains the institutions in the flow of knowledge and finance for the implementation of the NSI is shown in Figure 5. There is the need to ensure that the network is maintained through uninterrupted flows across all the components of the NSI.

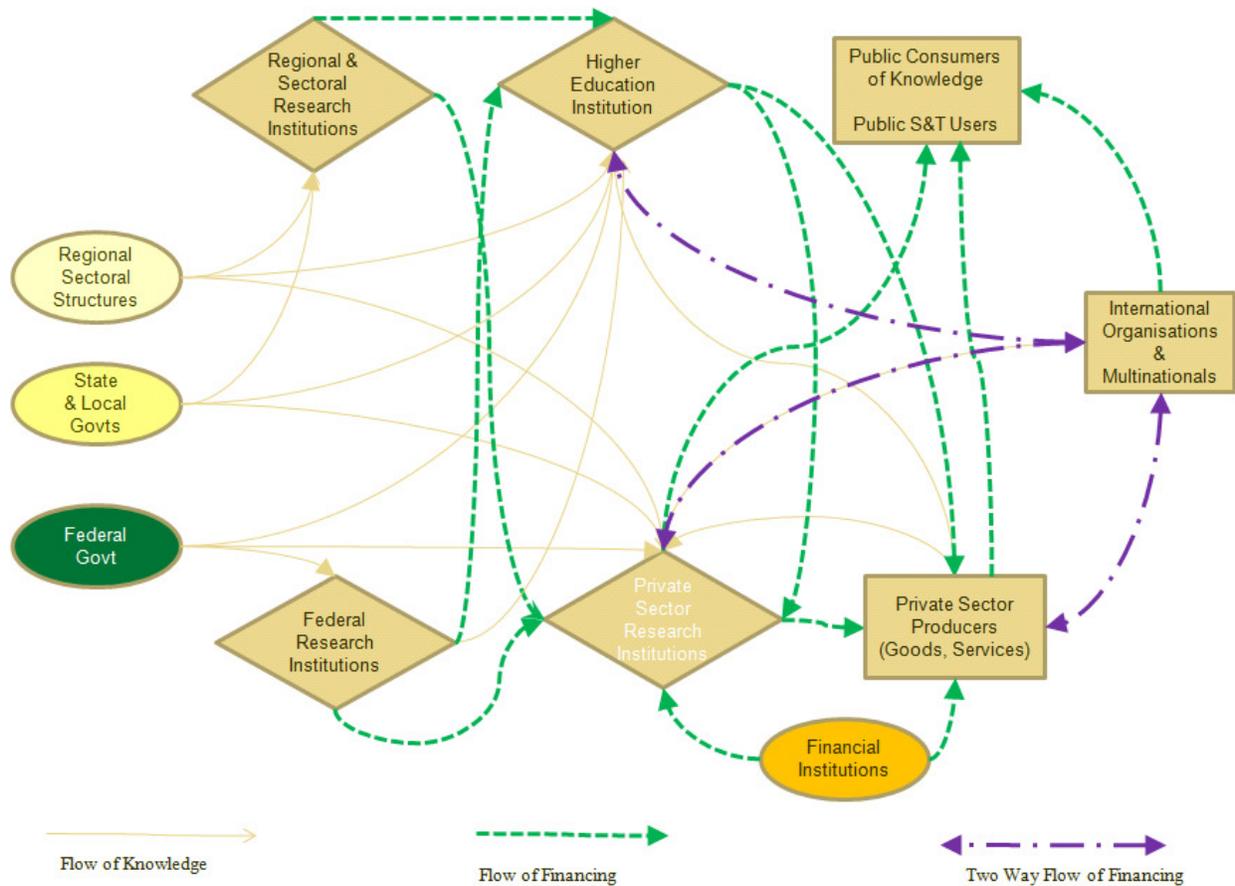


Figure 5: The National System of Innovation (Institutions, Knowledge and Finance)

The output of our innovation system shall emphasis enlisting modifier innovator across board. These shall include

New to the market international innovators

These innovators introduced one or more product (good or service) innovations that are new to international markets. These innovations were developed in house or in collaboration with others.

New to the market domestic innovators

These innovators introduced one or more product innovations that are new to domestic markets only. These innovations were developed in house or in collaboration with others.

International modifiers

These innovators have introduced one or more products or processes that are already available on international markets. These innovations were developed in-house or in collaboration with others.

Domestic modifiers

These innovators introduced one or more products or processes that already exist in international and domestic markets. These innovations were developed in-house or in collaboration with others.

Adopters

These innovators introduced one or more products or processes that already exist internationally and domestically, however, unlike Domestic modifiers, Adopters have no in-house development but instead acquire innovations from others without modifying them.

The NSI strategy shall strike a balance among these forms of innovators to make Nigeria competitive. However, domestic modifiers must be encouraged as they take full advantage of the open global innovation space.

3.1 Federal Innovation Council

Towards this end, the need for the creation of the Federal Innovation Council to discuss, analyse and help implement strategies for inclusive innovation in Nigeria and prepare a Decade Roadmap for Innovation. FIC would be the first step in creating a crosscutting system devoid of the bitterness of bureaucracies which will provide mutually reinforcing policies, recommendations and methodologies to implement and boost innovation performance in the Nigeria.

The tasks of the Federal Innovation Council shall formulate a Decade Roadmap for Innovation and creating a framework for:

- a) Evolving a Nigerian model of innovation, with focus on inclusive growth
- b) Institutionalize innovation as a culture in Nigeria from the base of the pyramid.
- c) Delineating policy initiatives within the Government, required to spur innovation

- d) Developing and championing innovation attitudes and approaches with special focus on youth and women
- e) Creating appropriate eco-systems and environment to foster inclusive innovation
- f) Exploring new strategies and alternatives for innovations and collaborations
- g) Identifying ways and means to scale and sustain innovations
- h) Encouraging State, Local Governments and MDAs to innovate
- i) Encouraging universities and R&D institutions to innovate
- j) Facilitating innovations by SMEs
- k) Encouraging all important sectors of the economy to innovate
- l) Encouraging innovation in public service delivery
- m) Encouraging multi-disciplinary and globally competitive approaches for innovations
- n) Convene an annual Nigeria Innovation Round Table/Summit

A high level organ called the Federal Innovation Council will be involved in facilitating Regional, State, and Sectoral level innovations. This will create an eco-system to boost innovation performance in the country.

The Federal Innovation Council shall be chaired by a seasoned Entrepreneur and captain of Industry which is Science and technology bias to be appointed by the Minister in charge of Innovation in Nigeria (Minister of Science and Technology). The Council shall have an International Advisory Board (IAB) of seasoned personalities from at least the top Six leading innovation countries of the world and representatives of global development partners. The Council shall be under the supervision of the Ministry of Science and Technology.

3.2 Sectoral Innovation Council

In order to drive innovative strategies in key sectors and create multiple roadmaps the FIC is encouraging the creation of multiple Sectoral Innovation Councils aligned to Federal Government Ministries which would enhance innovation capabilities in respective sectors. To this end, all Ministries shall have Innovation Councils. In this process, some Ministries could play a more enabling role given their cross-cutting focus (eg in areas such as Security, Finance,

Legal Reform etc .), while others will be focused on driving innovations in specific verticals.

Further, Ministries could also set up multiple Sectoral Innovation Councils, keeping in mind the areas that they would like to focus on taking into account the Departments and Agencies under their purview.

The Sectoral Innovation Council (SeIC) will:

- a) Initiate, promote and support policies for the Sector on innovation
- b) Develop a map of innovation opportunities in the Sector
- c) Focus and encourage the youth, women, educational & research institutions, Medium and Small Scale enterprises to be innovative in the sector
- d) Openly and transparently identify and reward talents in innovation in the sector and popularize their success stories
- e) Organise conference, seminars, lectures, workshops on innovation in the sector.
- f) Create Sectoral innovation internet portal equipped with tools to educate the people, disseminate information and serve as source of direct feedback from the people. This will be part of the Federal Innovation Portal
- g) Establish a sustainable innovation eco-systems in the Sector
- h) Provide support to promote innovation in the sector
- i) Encourage and reward innovations in public service delivery for civil servants in the sector
- j) Prepare a Decade Innovation Roadmap and Whitepaper for the State
- k) Organize periodic stakeholders forum on innovation for the State.

The composition of the SeIC would include representation from all stakeholders within the sector. Membership shall include Captains of industries in the Sector; relevant professional bodies; R&D, S& T and academic institution in the Sector; distinguished and successful incubation/ innovation/ entrepreneurship centres in the Sector; Small and Medium Scale enterprises; Social entrepreneurs in the sector; champions of growth and development in the sector; Staff of the MDA who have demonstrated innovation in the past in the sector.

Non governmental organizations or Civil Society Organisation can use the SeIC setup to

establish their councils towards promoting innovation within their constituencies. Their Innovation Portals could be linked to the Federal Innovation Portal.

3.3 State Innovation Council

This body will be set up through high level discussions with the Nigeria Governor's Forum. The State Innovation Council (SIC) would suggest policy interventions to spur innovation among the people and institutions in the respective States and the Federal Capital Territory (FCT). This initiative will recognise and leverage the enormous pool of domain experts working in the area of innovations in the State and provide a platform to scale existing innovative practices. It will also enhance the productivity and efficiency of the State, create new employment opportunities, boost growth, reform institutional and organisational structures, and herald a change in mindsets. Such a systematic organisation will also allow States to disseminate good practices to the whole country. The State Innovation Councils will be a critical part of creating an eco-system in Nigeria to boost innovation performance and for ensuring continued high economic growth and global competitiveness for our industries and institutions. The core activities of the Council should align themselves to creating an inclusive vision of innovation as well as driving competitive advantage. The FIC would collaborate and share guidelines for setting up the State Innovation Council.

The State Innovation Council will:

- l) Initiate, promote and support policies for State Governments on innovation
- m) Develop a map of innovation opportunities in the State
- n) Focus and encourage the youth, educational & research institutions, Medium and Small Scale enterprises to be innovative
- o) Openly and transparently identify and reward talents in innovation and popularize their success stories
- p) Organise conference, seminars, lectures, workshops on innovation
- q) Create State innovation internet portal equipped with tools to educate the people, disseminate information and serve as source of direct feedback from the people. This will be linked to the Federal Innovation Portal.

- r) Establish a sustainable innovation eco-systems in the State
- s) Source for risk capital for promoting entrepreneurship
- t) Prepare a Decade Innovation Roadmap and Whitepaper for the State
- u) Organize periodic stakeholders forum on innovation for the State.

The focus would be on enabling the above activities to improve the innovation quotient of the State in the next decade with a special emphasis on inclusive and sustainable innovation that would first cater for the needs of the State and the nation in general.

The composition of the SIC would include representation from all stakeholders incorporating voices from outside the Government to enrich the knowledge base of the Government. Membership shall include Captains of industries in the State; relevant professional bodies; R&D, S& T and academic institution in the State; distinguished and successful incubation/ innovation/ entrepreneurship centres in the State; Small and Medium Scale enterprises; Social entrepreneurs; think tank and policy groups; NGOs; faith institutions; youth group; Local Government representation.

A Regional Innovation Council can also be established constituted by a collection of States based on the current geo-political zones or the traditional regions in our national history. The common aspirations of these people bound either by culture or geographical location will spur up innovation that will service the peculiar need of the people while fostering national cohesion.

3.4 Local Innovation Council

The Local Innovation Council (LIC) would be formed at each Local Government Area (LGA) level in the federation. It will be would suggest policy interventions to encourage innovation at the grassroot level in Nigeria. It will focus on the immediate needs of the local populace while providing input into the SIC in the respective State. Aside the enhancement of productivity and efficiency of the Local government and creation of new employment opportunities etc, it will discourage rural-urban migration. It will also serve as a vehicle for the dissemination of innovation to the people from FIC, SeIC and SIC. The FIC and SIC would collaborate and share guidelines for setting up the Local Innovation Council.

The Local Innovation Council will:

- a) Initiate, promote and support policies for Local Governments on innovation
- b) Develop a map of innovation opportunities in the LGA
- c) Focus and encourage the youth, Primary and Secondary Schools, Medium and Small Scale enterprises to be innovative
- d) Openly and transparently identify and reward talents in innovation and popularize their success stories
- e) Organise conference, seminars, lectures, workshops and road shows on innovation
- f) Provide information for the State innovation internet portal
- g) Establish a sustainable innovation eco-systems in the LGA
- h) Source for risk capital for promoting entrepreneurship
- i) Prepare a Decade Innovation Roadmap and Whitepaper for the LGA
- j) Organize periodic stakeholders forum on innovation for the LGA.

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4.0 THE FIVE PARAMETERS OF THE INNOVATION STRATEGY

This framework will seek to create a strategy for fostering innovations at the Federal, Sectoral, Regional, State, and Local levels by focusing on five key parameters: Platform, Inclusion, Eco-system, Drivers and Discourse. This is targeted at redefining innovations to go beyond formal R&D parameters; facilitate innovative solutions that lead to inclusive growth for the people and by the people; foster an innovation eco-system across domains and sectors to strengthen entrepreneurship; focus on key drivers to ensure sustainability, durability and quality and expand the space for dialogue and discourse on innovation

4.1. Platform

Widespread innovations in products, services, processes and across verticals collectively create a strong and robust innovation society. Innovation should be widely distributed over the whole spectrum of economic activity, that is, across sectors (not just “high tech”), and types of innovations (not just formal R&D projects). FIC will provide a broader PLATFORM for Innovations everywhere to include:

- a) Products
- b) Services
- c) Organisations & Institutions
- d) Processes
- e) Research and Development
- f) Science & Technology
- g) Governance
- h) Social and Cultural
- i) Mindset
- j) Federal/ State/ Sectoral Councils

Focus would especially be on recommending policies at the Government level which can have a cascade effect on the innovation economy by facilitating innovations at the right points, as well as easing service delivery. Such transformative innovations in public policy would analyse process re-engineering for service delivery, accountability initiatives, and the human resource strategy of the Government.

4.2. Inclusion

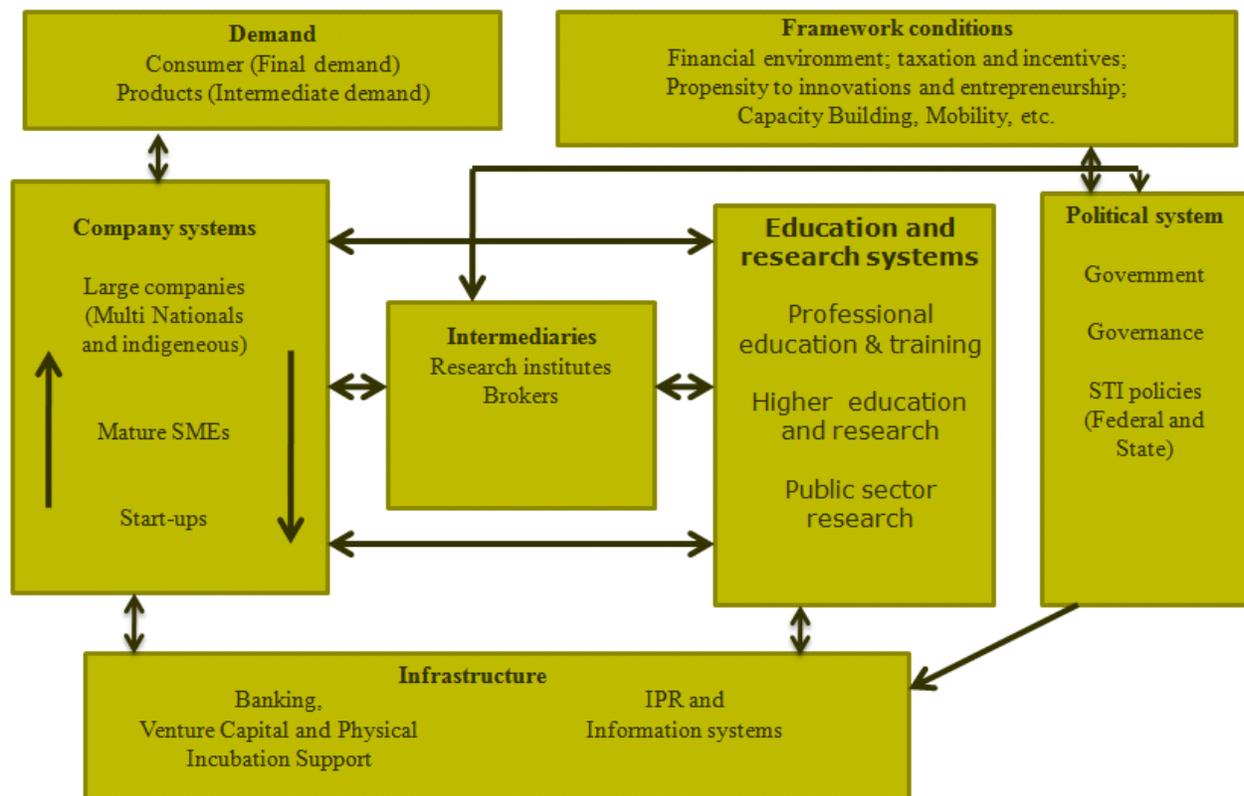
The core of our strategy will focus on using innovation as a tool to eliminate disparity and meet the needs of the many in the best possible manner. The aim will be to create a model of inclusive innovation that underlines access, affordability and quality, and fosters innovations at the grassroots. FIC will encourage Innovations for INCLUSION aimed at the Bottom of the Pyramid through:

- a) Awareness
- b) Access
- c) Affordability
- d) Availability
- e) Scalability
- f) Sustainability
- g) Quality
- h) Pervasive Growth
- i) Innovations for/ by the people
- j) Innovations for the Bottom of the Pyramid

4.3. Eco-system

A strong innovation eco-system is critical for creating an innovation society. An innovative eco-system must facilitate the birth of new ideas and also provide platforms for the successful implementation of these ideas. It is a dynamic system shaped by the interactions within and

across multiple players such as Government, firms, schools/education and research institutions, finance, individual innovators, customers/ users, NGOs and media. This horizontal layer interacts with and influences the innovation activity across verticals such as health, education, urban sustainability etc. Understanding the innovation eco-system is important to capture the knowledge flows within an economy, identify gaps, create synergies and propose policies and practices that can overcome constraints. The innovation ecosystem is shown in Figure 6.



Source: Arnold and Kuhlman (2001)

Figure 6: Innovation EcoSystem

FIC will facilitate the creation of necessary ECO-SYSTEMS through:

- a) Incentives & Awards
- b) Innovation clusters at universities
- c) Innovative business clusters

- d) Ward based Cluster
- e) Innovation in MSMEs
- f) Organisational Autonomy & Flexibility
- g) Policies & Programmes
- h) New Institutions & Infrastructure
- i) Risk/ Venture Capital
- j) Intellectual Property/ Patents
- k) Web & ICT as tools

4.4. **Drivers**

To successfully carve out an innovation strategy that benefits the needs and challenges of the Nigerian system it has to be driven by some key ideas and goals. This would be critical to drive the new knowledge economy and create a paradigm shift in innovation capacity and delivery and for providing environmentally sustainable solutions.

FIC will focus on KEY DRIVERS:

- a) Green Growth
- b) Multidisciplinary
- c) Collaborative
- d) Transformative
- e) Generational Change vs. Incremental Change
- f) Durable vs. Disposable
- g) Need vs. Demand
- h) Nature as Nurture
- i) Locally Relevant
- j) Globally Connected & Competitive
- k) Focus at the Edge

4.5. Discourse

Lastly, our Innovation strategy will aim to expand the discourse of innovation to give room to alternative dialogue, which often creates bypasses in the system to improve the current way of doing things. The aim is to involve many divergent voices, views, mode of doing things to impact the end result qualitatively and quantitatively. The room for divergent discourse is especially critical in Government and organisational processes.

FIC will expand Space for Discourse on Innovation in the country by:

- a) Discussions
- b) Debates
- c) Seminars
- d) Conferences
- e) Best Practices
- f) Alternative Dialogue
- g) Re-thinking
- h) New Ideas
- i) Media
- j) Innovation Portal

The five-pronged focus outlined above will foster innovations by:

- Democratising Information
- Identifying and empowering domain experts at National, State & Local levels
- Ensuring institutional autonomy, freedom, flexibility, accountability and transparency
- Increasing community and public participation at all levels through consultative exercises
- Improving Governance & Planning

5.0 INNOVATION INITIATIVES

5.1 FUNDING OF THE NATIONAL SYSTEM OF INNOVATION

Each innovation Council at the Federal, Regional, State, Sectoral and Local levels shall make budgetary provisions for the various innovation activities to be carried out in line with the innovation strategy. Global collaboration efforts through networking within the Global Systems of Innovation will be other forms of accessing financing as shown in Figure 5. There shall also be the establishment of the Federal innovation Fund/Foundation to be spear headed by FIC.

5.1.1 Federal Innovation Fund/Foundation

The Federal Innovation Council shall seek to establish the Nigeria National Innovation Fund. This Fund that will drive and catalyse the creation of an ecosystem of enterprise, entrepreneurship, and venture capital, targeted at innovative solutions for the bottom of the pyramid.

It shall be an inclusive fund built on the principle that innovative enterprise can profitably, scalably, and competitively engage Nigerians at the bottom of the economic pyramid: and, in doing so, provide goods and services that will transform their lives for the better. The best entrepreneurial and technological talent, across the world, has tended to focus on the problems of the rich. This inclusive fund will break this convention, investing in a new generation of Nigerian entrepreneurial talent, capable of innovating in products, processes, and business models: successfully combining profitability and business excellence, with transformational socioeconomic impact. The Fund shall invest in a new generation of our entrepreneurs who will build – and are in the process of building – world class enterprises that focus on the problems of the poor, without compromising on economic success. In doing so, the Fund will help create a new Nigerian model of innovation.

The Fund will focus on providing risk capital funding to enterprises that create and deliver technologies and solutions aimed at enhancing the quality of life at the Bottom of the Pyramid; and – subject to applicable law – work with other funds with objectives similar to its own. The Fund will support investment at different stages of the enterprise development cycle – from early

stages, through later phases of scaling-up of potentially successful solutions and business models.

The Fund proposes to seek capital from a range of sources: seed fund contributions from the government (Federal, State and Local) and its agencies; contributions from various Nigerian public sector enterprises, banks, and so forth; and contributions from private investors, corporate bodies and investment firms.

5.2 Ward Based Innovation Clusters

These clusters at the various wards in the country will capture the six geopolitical zones and the FCT, with the aim to empower people at the ward level with relevant technology for development and promote innovation. These innovation clusters will be part of the Ward Based Cluster Concept Programme of the Federal Ministry of Science and Technology. The technologies developed in the urban research centres will be impacted on the people within the local community so that they can make good use of their raw materials to create capital for investment. This will spur up innovation. This will draw people from different localities to acquire skills and become entrepreneurs. The innovation will centre around the raw materials from that environment and make technologies relevant to those raw materials to drive development.

5.3 Industry Innovation Clusters

The Industry Innovation Clusters initiative shall bring out the needs of both industry and academia and provide a means of addressing the needs through pro-active regional ecosystems of collaboration. FIC will catalyse and facilitate creation of such innovative clusters through **Cluster Innovation Hubs (CIHs)** which will act as hubs for connecting various state/sectoral/regional/national actors and stakeholders in symbiotic relationships. These CIHs will then drive need based innovation in the clusters connecting demand to supply and sharing information/knowledge among the stakeholders. For successful innovation in clusters a suitable ecosystem, where open interactions between the stakeholders are present, is imperative. Innovation benefits from cross-fertilization between organizations and needs to break the traditional barriers for knowledge sharing and move towards co-creation of knowledge. The most significant barriers for innovation in industry are skill shortages, lack of effective collaborations,

insufficient capacity building and inability to manage innovation successfully. The Federal Innovation Council shall seed, strengthen and create Industry Innovation Clusters across the country. Such innovation clusters will aim to foster vibrant ecosystems with active linkages between stakeholders and aid the cluster in satisfying demand-driven requirements.

5.4 University Innovation Clusters

The FIC shall identify and facilitate the development of University Innovation Clusters across the country where innovation would be seeded through Cluster Innovation Hubs. The CIH will provide a platform for the university and its partners to forge linkages between various stakeholders from industry and academia, initiate and assist innovation activities, encourage innovations in curricula and act as a catalyst and facilitator. It will also work closely with other industry clusters in its region.

5.5 Federal Innovation Challenge

The National Innovation Council shall call for proposals on the collective failure to use our scientific and technological manpower to address problems of Nation. The challenge shall cover all areas of endeavours including decent conditions of work for the Nigerian workforce with ideas that would improve the design of work implementation, processes, and models that improve work conditions.

5.6 National Innovation Summit

An annual National Innovation Summit to organized by by the Federal Innovation Council. It shall provide a forum where heads of innovation councils and governments across the world would be invited to discuss and analyse innovation perspectives, with a focus on inclusive growth.

5.7 Federal Innovation Scholarships

This will complement existing scholarship schemes but targeted at least 1000 young innovators per annum. The scholarship will encourage innovative thinking and problem-solving, rather than open-ended creativity; selected children will also be nurtured to understand the innovation value chain. Annual Innovation Camps will be organised to groom, mentor and network these young innovators. These camps will also support these young innovators in taking their innovations to the next level.

5.8 Other Innovation Initiatives

1. One Legislator One Project Innovation Competition. This Legislators innovation Award at all Federal Constituencies and Senatorial Districts will be targeted at solving the peculiar problems of that community.
2. Nigeria Innovation Portal. The portal also offers collaboration space in form of innovation communities, to foster cross fertilisation of ideas and knowledge flows. The portal will host communities for various innovation users including innovation clusters, State and Sectoral innovation councils.
3. Develop the Nigeria Innovation Toolkit. The Innovation Toolkit is intended to act as a guide and a handbook to aid innovators in various aspects of innovations and related areas. The toolkit intends to address the requirement for both literary and handy resources which help innovation. It shall be developed in all major languages.
4. Form a diaspora liaison for NSI funding, advocacy, venture capital injection, R&D etc
5. Adopting the Silicon Valley strategy of funding pet engineering projects of few weeks
6. Research agencies running summer innovation camps
7. Promoting innovation through reality TV shows. Business successes driven by innovation to be showcased
8. Institutionalize innovation week for all levels of Government
9. Creating a program to develop and encourage innovation for gifted children

10. Daily innovation quotes. Advocacy for innovation through partnership with media houses (print and electronic) to run captions on innovation. The schedule will show innovation motivational captions everyday of the year across all media.
11. Provide grants and support for innovation fairs
12. Catalogue international free patents and make them easily accessible for full benefits.
13. Develop a platform to show case innovation by the bottom of the pyramid like local artisans, farmers etc
14. Initiate a forum to form groups of financier and supports to be cheer leaders for various innovation programmes
15. Enlist motivational speakers, comedians and celebrities as ambassadors of innovation. This will be funded by cheer leaders
16. Include innovation in school curriculum at all levels of education. This will compliment the current entrepreneurial programmes.
17. Special advocacy for Parents to encourage innovation in their wards without killing the innovative tendencies of their kids. Helping parents to know when the child is showing innovation and how to encourage it.
18. PTAs in all schools to create award for innovation
19. Develop categories of innovation with reward in public service, financial services, conflict resolution, fashion, science, engineering etc
20. Special innovation events targeted at real commercialization where the innovator becomes a shareholder in the spin off company
21. Institutionalization of proof of concept centres aimed at outright commercialization
22. Promoting innovation clubs
23. promoting movies and songs on innovation

6.0 THE PARADIGM SHIFT – GOING FORWARD

To spur the innovation eco-system to meet the challenges of inclusive growth and development, the Federal Innovation Council will drive the following accelerators or initiatives:

1. State Innovation Councils to foster innovation thinking at the State level
2. Sectoral Innovation Councils to drive innovative strategies in key sectors and prepare Multiple Roadmaps
3. Inclusive Innovation Fund to create a viable funding platform for solutions aimed at the Bottom of the Pyramid
4. Innovation Clusters to create regional hubs of innovation
5. Innovation Centres in Universities to encourage synergies
6. Federal Innovation Portal to galvanise resources on innovation and create a platform for idea exchange
7. Awards and Competitions to incentivise and reward innovation in the country
8. Focus on Core Competencies to enhance global competitiveness
9. Outreach to create a culture of innovation and herald a mindset change
10. International Collaborations to leverage global thought and create partnership forums

Innovations require not just inputs and capacity but also a political economy of reform and a mindset shift, and the initiatives at FIC will aim to foster this paradigm change. This will involve creating a constituency for innovation where Government, academia, industry and the citizenry are all participants in the innovation movement. This will also involve creating an innovation eco-system not only concerned with creating high-tech products, but with enhancing the quality of life for everybody by creating sustainable solutions, and changing processes and mindsets. The effort will be to institutionalise and foster a culture of innovation in the country. The time is right for Nigeria to blaze its own trail by creating a model of inclusive innovation specific to the country's needs and development goals.