Building the Future of Africa Through Technology

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Distinguished guests, Ladies and gentlemen,

It is a pleasure for me to participate in the Innovation summit in Nigeria and welcome the opportunity to present on Building the Future of Africa Through Technology and Innovation

The desire to accelerate economic growth through innovation is appealing to Internet revolutionaries (pioneers) upon whose sacrifices much of today's innovations in

Africa rest. Computing and communications is at the heart of the means of innovation and of innovations with social and economic impact

Innovation has the potential to drive development and digital transformation leveraging the emerging technologies

[I lived in Nigeria for sometime in the 80s, have my extended family here and always exciting to engage with the heart of development in the subregion]

There is no doubt that Africa needs to be more innovative and therefore the effort of the summit is commendable. We have to innovate to become more globally competitive

My message examines the nature of innovation from network technology perspective, admits some challenges facing innovations in Africa and make suggestions on what we might do for a better future with innovation

In the recent world intellectual property organization (wipo.int), global innovation 2019 index rankings, the first African country on list, South Africa, ranked 63 with Ghana and Nigeria at 106 and 114 respectively out of 129 economies assessed. These 129 economies covered 91.8% of world population and 96.8% of worlds GDP. In the overall, “Progress remains slower in regions, such as Africa, and Latin America and the Caribbean.”, the report states

Innovation, typically refers to the extra steps we add in order to develop new services and products in a marketplace or in the public, often to fulfill unaddressed needs or solve problems. Technological Innovation, however focuses on the technological aspects of products or services rather than entire business scope

Technology is a natural source of innovation and we are particularly keen on integration of technologies for business solutions. We want to create value by solving proven market needs

Innovation needs to be continuous as business needs are time varying. Hence, the institutional infrastructure to continuously innovate may be more relevant than a short lived snapshot

product or service. To maintain continuous innovation process and keep to market positions one needs quick turnaround time attained by rapid development cycle coupled with strong market delivery methods. Clearly, some framework or structure is necessary for success

Let us bear in mind that innovation component, is only 20% of effort while the rest of 80% effort is hard engineering and business rooted in research

The following pillars enable innovation in an economy: the institutions; the human capital, education and research; infrastructure; market and business sophistication. Additionally, knowledge and technology outputs and creative output are measured outcomes

Network technology in particular has a pervasive influence on innovation because we use it to innovate as well as create innovations that depend on networking and network effects

Observations on use of critical network identifiers reveals the following. The number of identifiers we call IPv4 of size /32 per user and GDP varies widely. The /32 usage in the highest ranked economy Switzerland is 2.345 and 2.376 for /32 per user and /32 per GDP respectively. The corresponding measures for the highest ranked African economy, South Africa, are 0.840 and 0.510. The figures for Nigeria are 0.050 and 0.016 while that of Ghana are 0.167 and 0.075. That is for the core network

We might also examine measures that are closer to network users such as domain names. Recent data for country code TLD shows that Switzerland (.ch) has 1,923,296 names while South Africa .(za) has 1,152,912 names; Nigeria (.ng) has 98,166 names and Ghana (.gh) has 2,645 names

Evidently, Africa is not as network enabled as it can be and this impacts innovation on the continent even though internet penetration has increased significantly in last decade. Internet penetration in Africa is 39.8% and for Nigeria is 59%. Thus, while usage is better the internet service delivery is weak

There's also a deficit of information on research funding by African economies which in itself illustrates a weakness in

monitoring this critical investment. However, available workdbank data show Switzerland with expenditure of 3.37% of GDP while South Africa, Nigeria and Ghana report 0.80, 0.22, 0.38 respectively. With Africa investing less than 1% of GDP in R&D, we shall have an uphill battle in spite of our potentials

We appear to lack the foundation for organized innovation culture and this should be addressed

After having noted challenges we face in innovation we explore some recommended actions

We need to genuinely own the means of innovation; the innovation engine and to develop it to serve first and foremost our African needs. There will be no leapfrog

as we don’t want to skip skills needed in future innovations hence we must go through the waves rapidly and build robust independent organizations and workforce

We should ask ourselves what would Africa do should fragmentation of Internet or technology become an issue when our solutions depend on supply chain of other global economies. Would an African company have survived like Huawei when denied procurement of components from USA? Has Africa been fooled by the novelty of globalization which in recent times turning to nationalism? These are food for thought

Solving African problems first may be solving fundamental global problem at same time. The other way around simply

does not work. In general, we should not follow the developed economies but should learn from their mistakes and solve our own problems. We have rural innovation, SME innovations, innovation for the low income and disadvantaged, for cultural heritage, multi lingual and inclusion of less educated and innovations for new urban communities to address in order to build our digital economies. Thereafter, we can roll out from our local markets to subregion and to continent and beyond as wish

Innovation requires discipline and experience hence chasing the low hanging fruits will not sustain much development. Also let us not get misled in believing that a collection of young professionals in a start up without established neighboring institutions in

ecosystem is sufficient. Startups are good vehicles for testing knowledge from institutions entrepreneurially and not an end by themselves

We need to build innovation capacities that are resilient, agile and can transcend technology waves. With an average age of the continent at 20 years, Africa will have a wonderful human capital asset advantage, if they are educated in science, technology and business. Thus investments in research and education will be important pieces of the puzzle. Real innovation requires scientists and social scientists. Unfortunately we are not creating enough nor sufficiently encouraging their advancement. The emerging Research and education networks (RENs) would be a catalyst for innovation. We look forward to the role of

West and Central Africa REN (Wacren) and it's national REN member, NGREN, in facilitating innovation

Inter networks, a network of networks, requires that we have a local network that we join to the global but we seem to depend on the global almost exclusively forgetting to build the local capacities, assets and competencies. The permanent state of "assisted people" does not force local innovation. While Africans in the diaspora have a unique role in paying back mother Africa with capacities, we need to avoid importing solutions and join in forging creation of home grown local innovations

One internet has helped innovation with open standards, open source, multi stakeholder approach to policy and

standards development, permission less value addition and shared global ownership

The practice of multi stakeholder bottom up approach to policy and standards development by consensus is practiced in the internet technical community. Adopting this practice in innovation governance benefits the overall policy environment by reaching larger and more diverse contributors. We gain a wealth of ideas. This is encouraged because the days when all the needed expertise can be found in one organization or company or team is gone; for the complex issues with internet technology, innovation and public policy, it is futile to entertain any sense of self sufficiency. We should create forums for all stakeholders to exchange ideas

and softly evolve positions but we must stick to our roles

We have to admit that a consensus process where issues to be addressed are more important than votes cast, can be effective in policy development

We prefer meritocracy to prevail in addressing issues over democracy or autocracy for decisions on innovation which require us to be clever

Innovation thrives in a more open environment with sharing, caring and order

We advocate for a better policy environment for innovation and adoption; governments have a special role to nurture innovation; innovators, the

innovation framework and provide core funding for fundamental research. Government's role is to help bring out our creative juices not to shutdown networks or media houses or control who gets to create. We all should promote patents, copyrights and intellectual property protections in the interest of African innovations

A decade ago, Nigeria was our number one local provider for electronics in West Africa. They were able to fix and design crazy stuffs. Alaba international market electronic specialty has lost its reputation! This may be good time to bring back our glorious days with more focus on innovation and local manufacturing

We need to make our kids dream big again and want to go to the moon instead

of happy users and passive observers. We missed 1st and 2nd industrial revolutions. The 3rd revolution opened up some new opportunities for us but the market consolidation rapidly and has reduced our access... would we take our place in the 4th emerging revolution? In this 4th industrial revolution, cyber and reality are largely indistinguishable, creating super humans, super machines and “super stars”. Africa may be more at risk if we are not well integrated into the emerging innovation culture. Nothing is impossible, but will require profound transformation as the technology is getting specialized and changing rapidly. With the anticipated global competition we must work harder to make desired impact.

We wish Africa a bright future through technology innovation

Thank you for your attention

https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2019.pdf

http://bgp.potaroo.net/iso3166/v4cc.html

https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS