

RESEARCH PAPER BY RICHARD ATTIAS & ASSOCIATES

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REVERSE INNOVATION: AFRICA'S BIG OPPORTUNITY

We have an abundance of genius; we just need trust and support!

Session overview

The other huge national resource in Africa – outside of mining and energy – is its capacity for innovation, which continues to generate new products, ideas, services and revenues that place African inventors at the forefront of emerging technology. Reverse innovation – trickle-up innovation that is developed in the emerging world and exported to the rest of the world – that focuses on “need” not “want” represents ever-increasing potential for African businesses. With need as the mother of all invention, how can Africa continue to grow in areas of healthcare, energy, mobile communications and finance innovation – and how can governments and the private sector fast-track this growth?

Challenges for social innovators, entrepreneurs and multinationals interested in scaling reverse innovation

Reverse innovation comes from an innovative product developed out of necessity in an emerging market and repackaged for developed economies. Countless tools and products have been developed by young African entrepreneurs in their attempt to solve a critical issue at home.

Many experts argue that the greatest potential for reverse innovation lies in agriculture, healthcare and mobile banking. However, young entrepreneurs in these areas face obstacles and may not be able to scale their product for an international consumer base. Inadequate business skills, poor knowledge of existing regulations on running a business, inadequate infrastructure, poor market knowledge and weak funding or access to capital are the biggest problems faced by African social innovators. Likewise, the multinational private sector may also encounter barriers like political instability and lack of transparency when attempting to use reverse innovation to expand their international consumer base in emerging markets.

Entrepreneurs

Market barriers - including barriers to trade because of poor infrastructure - make innovation difficult to scale up (*UN University*). UN University points out that even if market barriers are corrected, innovation may not thrive in developing countries because many entrepreneurs lack business skills, market knowledge and knowledge of existing regulations. The African Union outlines major obstacles for development of science, technology and innovation including lack of infrastructure to support innovation (broadband Internet access and basic telecommunications services, reliable electricity supply, and good transportation), insufficient funding and organizational capacity. Other obstacles include inadequate expertise on innovation and policy development. Inadequate education, few entrepreneurship programs, and low amounts of funding for research and design further hinder young entrepreneurs attempting to launch their products for international markets.

The British Council reports that over the past 40 years, higher education in Africa has expanded at twice the global rate. University enrolment even doubled between 2000-2010 (*British Council, 2014*). Yet youth have not necessarily emerged from universities with solid entrepreneurial skills, and attendance in tertiary education is marked by socioeconomic inequalities. Most universities are cost-prohibitive for the average African student. The World Bank reports that as of 2009, 26 African countries charged tuition or fees (*World Bank, 2011*). A UNESCO report illustrates in sub-Saharan Africa the expenditure per student at upper levels of public education is higher than it is at primary and secondary levels, but it is often given to individual students in the form of scholarships leading to the inequality of resource allocation (*UNESCO, 2011*).

The quality of education at the tertiary level in Africa varies by country, but budgetary constraints make it generally lower than other regions of the world. Teachers at the tertiary level are paid, on average, much lower salaries than teachers at the primary and secondary level. This may have implications on lack of pedagogical training and the working conditions of teachers at higher levels of education (*UNESCO, 2011*). Statistics from the British Council show that universities in Africa report a higher than average student per lecturer ratio at 24:1 compared to the global rate of 16:2 (*British Council, 2014*). Moreover, most four-year university programs fail to provide students with formal training that will teach them the necessary skills for an entrepreneurial setting. Entrepreneurial business education should help students develop problem-solving skills, business management skills, and interpersonal skills (*ILO, 2009*). Although there are notable exceptions - Nigeria has made entrepreneurship courses compulsory in all federal institutions - few other countries offer this type of curricula (*British Council, 2014*).

Calestous Juma of the Harvard Kennedy School thinks the most successful stories of African reverse innovation come from a supportive policy environment and strong local engineering and research and

design capacity. Without research and design centers at universities or engineering curricula at secondary schools, entrepreneurs will not have the capacity to solve local problems (*Calestous Juma, Harvard Kennedy School, 2013*).

Ernst and Young stress the importance of technology and globalization in propelling reverse innovation and entrepreneurship. Staying connected in a globalized world allows entrepreneurs to solve problems created through globalization, such as climate change. African entrepreneurs who wish to address these problems also need to harness global markets to scale their products (*Ernst and Young, 2010*). Vijay Govindarajan of Dartmouth argues that the biggest obstacle for young, local companies is to build global brands and scale their distribution internationally (*Vijay Govindarajan and Knowledge @ Wharton, 2012*). Although entrepreneurs must have a global mindset with an understanding of local cultures and nuances, they need technology to access trade and capital that may not be available on a local capacity. This is why developing strong technology and Internet infrastructure and ensuring young people are connected should be a priority on any country's development agenda.

Private Sector Multinationals

Most of the literature on reverse innovation is written for Western companies on strategies for using reverse innovation from emerging markets to repackage as an affordable alternative in the developed world. In their Harvard Business Review article, Amos Winter and Vijay Govindarajan outline major traps for multinationals attempting to use reverse innovation. Since consumers in Africa have less spending power, many multinationals attempt to cut costs by replicating crude or poor quality versions of products that were successful in developed markets. Other problems exist when multinationals do not spend enough time immersed in the emerging market and do not get opinions from locals, neglecting to understand their consumer preferences, and technical problems including infrastructure, environmental and climate requirements of the area (*Harvard Business Review, Amos Winter and Vijay Govindarajan, 2015*). In an interview with Wharton School Magazine Knowledge @ Wharton, Govindarjan also argues that reverse innovation is essential for Western multinationals to grow in developing countries. Without innovation in poor countries, multinationals may suffer losses (*Knowledge @ Wharton, 2012*).

Recommendations from the Ernst and Young, African Union, Vijay Govindarajan, World Bank and UN University

- Because innovation requires knowledgeable and skilled entrepreneurs, policymakers need to develop educational policies and capacity building for young entrepreneurs (*UN University*)
- Emerging economies in Africa need to build capacity to foster growth and disseminate technologies that will facilitate innovation (*Ernst and Young, 2010*)

- Private and public stakeholders should increase collaboration between education and research at a national and regional level (*African Union, 2014*)
- Commitment to national and cross-border coordination of research and innovation will strengthen research outputs and technology acquisition (*African Union, 2014*)
- A systematic approach to knowledge sharing, and open source business models will stimulate local, national and regional innovation ecosystems, which will result in better public services (*African Union, 2014*)
- Multinational companies can partner with small, local enterprises that have already developed reverse innovations but have not been able to scale their projects. This helps overcome logistical and internal barriers the multinational might face and smooth out mass-market barriers faced by the local company (*Nebojsa Radojevic, HEC Montreal, 2013*)
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2461092
- Multinationals should immerse themselves in emerging markets with in-depth study before beginning the design process, thereby understanding behavioral differences, consumer preferences and suitable materials for the environment (*Harvard Business Review, Amos Winter and Vijay Govindarajan, 2015*)
- Strategic alliances between local enterprises, who understand the local market, and multinationals who have global market power would make reverse innovation highly successful (*Govindarajan and Knowledge @ Wharton, 2012*)
- African governments should complement the work of economic advisors by appointing professional science, engineering and innovation advisors and devoting more public funding to research institutes at universities (*Calestous Juma, Harvard Kennedy School, 2013*)
- Power and energy ministries and ministries of agriculture could create research and training institutes that would be supported by mentorships from professionals with practical engineering and business skills (*Calestous Juma, Harvard Kennedy School, 2013*)
- Interventions in research and design infrastructure including funding, intellectual property rights infrastructure, capacity building for STEM, strengthening entrepreneurial capabilities and financial support for early-stage start-ups can support innovation and entrepreneurship (*World Bank, 2013*)

Forum Flashback:

NYFA 14: During the NYFA 2014 panel on “The Role of the Private Sector”, business leaders were optimistic about the potential for the private sector to transform African economies. Clare Akamanzi, COO of Rwanda Development Board, felt that opportunities in Africa needed to come from the private sector’s support and involvement.

Further reading:

IBM announces a new innovation and collaboration hub in Nairobi:

<http://www.pnewswire.com/news-releases/ibm-expands-reach-to-african-entrepreneurs-with-innovation-space--ihub-300118750.html>

Innovation in Africa: what young African women entrepreneurs have to say:

http://www.huffingtonpost.com/mary-olushoga/innovation-in-africa_b_3787651.html

Innovation and entrepreneurship propels Kenya’s economy:

<http://www.cnbc africa.com/video/?bctid=4365872703001>

Tackling constraints to the development and growth of the diaspora’s entrepreneurship:

<http://www.isbe.org.uk/effiongakpan>

How innovations from developing nations trickle up to the West:

<http://www.fastcompany.com/1150211/how-innovations-developing-nations-trickle-west>

Reverse innovation brings technology from developing nations to Canada:

<http://www.cbc.ca/news/technology/reverse-innovation-brings-technology-from-developing-nations-to-canada-1.3065052>

Reverse innovation powers healthcare tech, says GE:

<http://africanbusinessmagazine.com/sectors/technology/ge-reverse-innovation-powers-healthcare-tech/>

Six amazing examples of medical reverse innovation:

<http://www.wired.co.uk/magazine/archive/2012/06/start/cant-afford-medical-devices>

Prepared by Angela LaSalle, Program and Research team at Richard Attias & Associates, and Masters International Affairs, Columbia University