ISSN: 2583-4436



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My presentation is going to focus on a few lessons for knowledge development and diffusion and how this can enhance our national innovation system. I would like to draw some lessons from M-Pesa innovation, which is a mobile money service in Kenya, very popular in Kenya and is also being used in East Africa and other parts of Africa. Of course, questions have been asked why this mobile money service has been successful in Kenya but not in other countries. For those who are aware, this is a service which was introduced in 2007 and to date it has revolutionized the operations not just in the financial sector, but also in other operational sectors in Kenya. When it was introduced, it was targeted at inclusive financial access, particularly by the grassroots communities. Some of the lessons that I would want to share I would imagine that they would also be useful for other sectors which are critical for Kerala. Like renewable energy sector, biotechnology sector, and, of course, other sectors within the Fourth Industrial revolution.

Starting with a very first factor that has been found to be very critical in Kenya for the development of dynamic technological innovation like M-Pesa, there is this new need to consider the aspect of product development. And of course, these would relate to a number of areas, but mainly on research and development. This is very, very critical. That is what has been found out in relation to M-Pesa and the other factor has to do with our development of the market related innovation. And this particular aspect of innovation has been associated with incremental innovation, the need to build the capacity of entrepreneurs, the need to build the skills of young innovators which in turn contributed in a great way in the growth of M-Pesa in Kenya.

The other area that has been found to be very critical is the aspect of product development that is driven by continuous adaptation that users demand. And of course, this is key to the process innovation. But more important is learning and capabilities development; regardless

of being a grassroots actors, SMEs or academic institutions. The capacities and learning must be commensurate to the needs of both the technology developers, as well as the uses of the technology. This is yet another factor found to have driven the growth of M-Pesa.

The other aspect which I think very critical for the Kenyan case is the policy innovation, where the government has contributed in a very large way in promotion of, young innovators and young entrepreneurs. This has been found to have supported the ICT curriculum development across different sectors and also in the development of supportive STI policy that promotes the other areas that has been found to be quite critical for the growth of M-Pesa. It ensures resource for R & D, market innovation and research, and for policy innovation.

Finally, for a functional technological innovation system, it has been found that policy should actually support the factors that target system failure. That is something which has been very critical for the Kenyan digital innovation. And it has been found that these areas must change to their capacity and their skills need of the different state. Therefore, technologists, as well as the developers of the technology must consider the skills and the capacities. So, I believe some of the factors that contributed to the growth of M-Pesa could be of relevance in the transformation of Kerala to becoming a knowledge economy. I do hope that the policymakers as well as the researchers can draw from the success of M-Pesa and inform our discussions and conversations. Thank you.