Roxas-Robredo Development Plan on Science, Technology, and Innovation (STI)

Science, Technology, and Innovation (STI) is regarded as an important government investment not only for the jobs it creates but also in developing our economy towards more advanced tracks in manufacturing, food production, and the service sector to name a few. The local electronics industry for example should be aided to gradually shift from mostly assembly of electronic products to integrated circuit design and product development. Moreover, the gains from R&D far transcend economic benefits as it has major contributions towards health, safety, environmental sustainability, and public welfare (mass transport, security, education, etc.).

As a testament to the focus on STI under Aquino administration, the World Economic Forum in 2015 has placed the Philippines to number 33 in the world for capacity for innovation—part of this has to do with the high tech facilities DOST has built in the last 6 years – the Philippine Genome Center, Advanced Materials Testing Lab, Electronics Products Development Center, among others. This comes from a low of #95 in 2011 and that we leapfrogged our neighbors Thailand and Vietnam in just a matter of 4 years. The WEF also placed our country at #69 in their measure of the quality of scientific institutions, up from #106 in 2011. We believe that we can close the gap with regional leaders Singapore and Malaysia in the next 6 years.

1. If you become the next president, what is the role of science, technology, and innovation in your medium-term development plan?

   We see STI as an indispensable component of the response to our pressing problems and new set of development challenges facing us. We need to strengthen our vital industries through R&D and these include: the BPO industry, electronics, and agriculture. Beyond these, R&D must make us self-reliant in the following fields: disaster risk reduction, mass transport, health and nutrition, and renewable energy research. Lastly, we will invest on emerging and cutting edge technologies such as space and allied technologies, genomics and health-related research, and the internet of things (IoT).

   Currently, the three agencies with the biggest R&D budgets are DA, DENR, and DOST. The latter for example, has been allocated P4.6 Billion for 2017 just for its Grants-in-Aid program (proposed and directed R&D projects). Admittedly this is still not enough and therefore, under a Roxas-Robredo administration, we will gradually increase this to get closer to the ideal R&D expenditure of 2% of a nation's GDP. Initially, we will target an extra 10% annual investment on R&D.

   But more than just increasing the budget, the strategy is to streamline R&D expenditure by bringing together the R&D units of various government agencies to work on common topics. A good example of this would be the DOST-DOH partnership

wherein even their R&D funds are, for all intents and purposes, already pooled as one. This can also be done with other agencies like DOE, DENR, and DA.

The last piece in the puzzle is the engagement of the private sector in R&D. Funds pooling, cost-sharing, private sector-directed R&D are just a few instruments we can explore. This will further increase the nation's R&D expenditure.

2. How can the public sector, particularly the government, create an innovation economy?

Following Stanford University's Innovation Engine paradigm, the three ingredients that government must provide are: a culture of innovation, ample resources, and a conducive research habitat. Towards this end, we will (i) invest in facilities such as laboratories, common service facilities (with fast internet connections), business incubators, and school-based fabrication laboratories; (ii) instill the innovation culture in our schools through curricular changes and programs for entrepreneurship; (iii) adopt measures to attract the best and the brightest to pursue undergraduate, graduate, and post-graduate programs in S&T; and (iv) provide additional incentives for scientists and technologist aimed at not only retaining Filipino scientists and technologists but also at harnessing the skills and potentials of overseas Filipino science and technology experts.

In terms of support to MSMEs, under our administration, we will facilitate access of MSMEs to advanced technologies and global markets. An industrial extension network should be established to assist and train MSMEs in using advanced technologies and accessing financing to produce new higher valued products that can be marketed globally. Of course, to complement the aforementioned, it is necessary that we fix our regulatory system and hasten the process for FDA approval, DTI export permits, patenting, and customs release to complement the aforementioned.

3. How will your development plan on STI translate to government programs, projects, and activities?

As trivial as it may sound, and apart from the above mentioned programs and projects, we like the idea of mainstreaming product pitching events and competitions. Providing a regular avenue for inventors and researchers to showcase their products will only serve to strengthen the innovation culture. Currently, the DOST has setup seven technology business incubators (TBIs), we think we need a hundred of these much like what Korea and many European countries have done.

To spark innovation among the youth, we will launch Venture for the Philippines, which is patterned after Venture for America, and mainstream Start-up Weekends currently hosted by DOST. The former is a program that should inspire students to

spend two years after college working for a start-up, thereby bringing much-needed talent to early-stage ventures while providing students a start-up learning experience that is already proven to be useful. The latter is an agile, user-centered entrepreneurial education program for young Filipinos that must be maximized and linked to more schools and industries.

4. How can the government leverage digital technology for inclusive development and poverty reduction?

   Internet, TV, and cellular communications – when used to its maximum potential, these can lead to economic growth in rural areas. We have already started several projects on this and we will have to promote and expand these further. First, the free Wi-Fi program has already been initiated during the current administration and several provinces will be online by May 2016. Second, with the coming of digital TV, we free up a lot of the UHF/VHF bandwidth (TV whitespace) which can be used for many applications such as local broadcasting and network communications. Lastly, together with our telecommunication companies, wireless communications should be brought to the farthest barangays and islands—we have already identified the technologies that can do this. In particular, UP Diliman is currently working on a CHED-funded project that will install village-based cell sites that use satellite uplink for communications, which convert all forms of communication (text and voice calls) to digital information (e.g. VOIP much like viber or skype calls) which is cheaper. With all these, imagine the impact to a rural barangay of the connectivity and access to all information that we take for granted in urban areas.