

STACK Q&A

1. If you become the next president, what is the role of science, technology, and innovation in your medium-term development plan? *The questions in bullet points may serve as guide in answering this question:*

- How much public investment will your administration set aside on science and technology? In particular, how much public investment will your administration put on R&D?
- In which strategic areas/sectors will you focus government's priorities and investments?

Under my administration, innovation and entrepreneurship based on science and technology (S&T) will play a critical role as we strive for national competitiveness, faster economic growth and more inclusive economic development. Technological change and innovation will increase our productivity and this in turn will lead to faster growth, higher earnings for our workers, and better quality goods and services at lower costs. Experts have shown that the quickest way to accelerate economic growth is to invest more intensely in R&D. Korea, Israel and, recently, China have demonstrated how their investment of 2 to 4% of their GDP to R&D has successfully led to prolonged and accelerated economic growth and a faster rise out of poverty for their countries. Today, they are powerhouses and we import their products.

But we also see technology as the means for us to achieve our goals of delivering quality services to all citizens, widening access to information and economic opportunities, and expanding job opportunities through the emergence of new industries producing new products. We will proudly introduce to our national psyche a “culture of innovation”, a way of life that exalts Filipino creativity, ingenuity, knowledge creation, technopreneurship and a winning CAN-DO attitude.

As a testament to the priority we will give to developing our capacity for innovation and technological change, we shall devote at least 1%¹ of our

¹ Based on 2015 National budget, this is around 2.6 Billion pesos

GDP to science, technology, engineering, and mathematics (STEM) and R&D, from the current government spending of 0.15% of GDP.

The past administration did increase the budget for R&D through the PCARI program of CHED and some research programs at DOST and other agencies. We will continue and improve upon these programs. In the past years, we observed some fundamental challenges on how R&D is funded and conducted in the Philippines and we believe that we need to make fundamental changes to convert our investments in R&D into truly effective innovations and services that serve our people. An example of a badly needed reform is in the slow procurement process that has made it impossible to complete R&D projects, putting to waste funds that have already been allocated for them. Reform in this alone will likely improve the financial efficiency of our R&D spending by at least 20%.

In order to avoid wasting our limited budget, we should also focus more on the “D” of R&D and develop those sectors that will have a more concrete and immediate impact on our society.

The R&D budget will focus on the following:

- 1. Improving the quality of our STEM and R&D graduates and professionals to enable us to compete with the scientists and engineers of countries that invest 2 to 4% of their GDP into R&D (such as Israel, Korea and China).**
- 2. We will give them opportunities to advance their training by collaborating with world experts whom we shall invite to our institutes. We will also give our Filipino professionals opportunities to work for a period in the best laboratories of the world and we will bring them back to conduct meaningful R&D in the Philippines**
- 3. We will invest in world class tools and labs to enable the work of these professionals.**
- 4. Increased government support for R&D will widen job opportunities in the Science, Technology, Engineering and Mathematics (STEM) sector and encourage more students to pursue a career in these areas.**

5. Providing wider capacity building for Technical Vocational Education and Training (TVET)

6. Some specific areas that are low-hanging fruit for innovation that will benefit our society are:

a. Innovations in our telecommunications infrastructure to reach all Filipinos through better quality bandwidth.

b. Modernization of technology and the use of the internet to improve the capacity of our disaster risk reduction and management (DRRM) agencies.

c. Developing an information infrastructure that enables data and information to flow for services such as: i. data systems for democratic process and good governance, ii. analysis of data, iii. technologies for financial transactions, iv. E-commerce, v. E-learning, vi. e-health services, vii. agriculture and fisheries data, etc.

d. Innovations for alternative energy sources, distribution methods, and systems.

e. Innovations in Health and Translational Medicine to address a growing population that needs better healthcare and medical services and the reduction of diseases like TB, malaria, HIV, etc.

f. New technologies, techniques and processes for modern farming and aquaculture.

7. Finally, we need to encourage innovation enterprises through entrepreneurship support for the promotion and mainstreaming of locally-developed knowledge products and indigenous technologies. We will reform procurement procedures to allow for local, small, and medium sized entrepreneurial companies to supply government needs. When possible we will give them preference.

2. How can the public sector, particularly the government, create an innovation economy? *The questions in bullet points may serve as guide in answering this question:*

- How will your administration build a local community of innovators, entrepreneurs, and investors? How will you attract professional overseas Filipino workers to return home?
- How will the government support local entrepreneurs to obtain greater access to markets abroad?
- How will you encourage collaboration among private sector, public sector, universities, and research institutions?
- How will you improve the policy and regulatory environment to make it conducive to innovation?

In order to build an ecosystem of innovation and technopreneurship, we shall ensure that all concerned stakeholders are coordinating and collaborating in the drafting of programs and projects for S&T. A *National Innovation System* (NIS) shall be put in place to ensure close collaboration among agencies and sectors, guarantee the free flow of knowledge and information among industries, government agencies, labor sector, information and communication technology (ICT) practitioners, private R&D institutions and experts in the academe.

A *National Innovation Council* (NIC) shall be created to further facilitate this collaborative environment. The NIC will be powered by the most robust digital collaborative network integrated by Filipino web programmers. It will be a Cabinet level interagency organization which shall include representatives from industry and the academe. Its principal mandate is to identify industries where we have comparative advantage and where there is strong market demand to be targets for innovation acceleration in order to develop them into world class industries that can cater to the demands of the local and international market.

To give local innovators access to markets abroad, we will encourage them to use the network built in the NIS. We will connect movers and shakers with the leadership of the NIC and hold them accountable for the key performance indicator called “the level of people connections across borders”. Funds will be allocated to market our excellent Philippine innovations in the modern media.

Through the system, we will implement collaborative programs that will help nurture an innovative culture of knowledge creation, education, training, and entrepreneurship. Among these programs are the following:

1. In order to attract the best and the brightest Filipino professionals to come home, we will network better with the educated Philippine diaspora. We will market to them the great economic opportunities available for innovation in specific industries already identified by entrepreneurs from foreign companies such as Rocket Internet. We will then provide support to *tech startups* through improvements in the ease of doing business, business incubation support, and technology promotion and showcasing. We will make immigration easy for them and their associates and families.
2. We will institutionalize and strengthen the *Balik Scientist* program which invites Filipino experts who have made their names abroad in various industries to return to the Philippines to develop their own entrepreneurial companies, conduct capacity building programs, mentor local experts, or provide insights and knowledge on their field of expertise. Possibly, we could add a Balik Technopreneur program. This program will be globally marketed in order to attract the strong professional and globally experienced diaspora. Challenge and motivations for their return and reintegration will be addressed in order to ensure a long to permanent stay that will allow them to give a meaningful contribution to innovation in the country.
3. We shall minimize job mismatches through close coordination between the industry and the academe sectors to match industry needs for technology and human resource with capable STEM graduates and adequate R&D programs.
4. We will implement the Inventors and Inventions Incentives Act (RA 7459) which provides tax incentives and exemptions to locally-developed technologies and inventions.²

² Currently, the administration is not implementing the said law.

<http://www.philstar.com/headlines/2014/06/08/1332330/dost-not-keen-granting-tax-incentives-pinoy-inventors>

3. How will your development plan on STI translate to government programs, projects, and activities?
 - What kind of programs and projects will your administration invest in to spur innovation, cement a culture of competitiveness, and inspire entrepreneurship?

Our administration shall implement support programs for technology development and knowledge creation through the following initiatives:

1. **To foster entrepreneurship, the government of the Philippines (as mentioned above) will revise its procurement guidelines to do business with small and medium entrepreneurial companies and to encourage public and private entities to utilize their products and services. Our government will – when able - break down bid contracts to smaller lots that welcome expertise in specific technologies and make deployments more efficient. Through transparent digital bidding processes, true experts will be encouraged and empowered to provide their services to a market that previously they would not dare touch. We will also use discussion boards and our networking forums to actively announce government requirements and allow innovators to engage government business units to develop new systems. As a broader measure, we will promote Enterprise Development, which is fostering and incentivizing MSME growth by building more Negosyo Centers and by expanding their services to include strategic planning, conduct of financial feasibility studies, product improvement, HR development, and sales and marketing.**
2. **We will strengthen the two R&D institutes of PCARI to conduct research for a. the Institute for Information Infrastructure and b. the Institute for Health and Translational Medicine. Through these institutes we will partner with private sector companies, universities, and researchers – local and foreign – to innovate in the areas mentioned above.**
3. **We will insure that the NIS and NIC have professional marketing and business expertise. We will invest properly in world-class business development and competitive analysis. The Philippines will not “re-**

invent the wheel” but will leap-frog. There will be no fear of collaboration with foreigners provided the Philippine side is in control and can dictate the direction of the programs. We will learn from the best and then improve from the present state of technology adopted for our local needs.

4. We will identify nationwide industries for innovation acceleration by engaging the private sector, academe, and government in identifying industries which have strong local and international demand
5. Engage the academe to educate and innovate in market demand led industries. This will allow for an environment that will commercialize those market driven innovations and create inclusive, globally competitive Filipino companies and industries.
6. Establish technology business incubation centers nationwide to showcase developed technologies, and establish local and international linkages so that these technologies are showcased and promoted
7. Promote ease of doing business through integrated online e-government services that will eliminate queues in doing government transactions and expedite processing of permits and requirements.
8. Establish a STEM/TVET careers placement program for STEM graduates and certified technical practitioners to bridge them from graduation to employment.
9. Expansion of Project NOAH to improve our disaster risk mitigation by completing a nationwide hazard map that will delineate danger zones

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

We see digital technology as a most powerful enabling tool that:

- a. connects and enables public participation,
- b. informs, educates and brings opportunities to those who previously were not included economically,
- c. delivers and facilitates more efficient government services, and

d. enables transparency, accountability and greatly reduces graft and corruption.

e. With reduced corruption, the honest hard-working entrepreneurs will now be educated, empowered and encouraged to make their impact on a Philippine economy that will grow much faster.

To alleviate poverty, we shall implement the following programs:

1. Put up Local Cyberhubs that will provide internet connectivity and services even to far-flung sitios and communities. Access to the internet by every citizen is key to allowing them access to government services, educational programs, jobs, business opportunities and vital information.
2. Establish an integrated online education platform that would provide distance learning courses under the Alternative Learning System and could lead to diplomas, certificates, and ultimately better jobs.
3. Create a National Agriculture Extension Service (NAES) with national government funding through agricultural universities to develop practical agricultural applications for increased productivity, to teach and assist farmers on matters such as best practices for supply chain, food safety, marketing, accounting, and to create a FarmersWeb providing data on pricing, production, weather information, etc.
4. Provide support to *Online Filipino Workers* (OLFWs) like educational providers, freelance workers, and work-from-home individuals through quality connectivity and bridging programs under TESDA.
5. Widen people participation through online-based grassroots policy making.

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