Philippine Roadmap for
DIGITAL STARTUPS

2015 and Beyond

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF SCIENCE AND TECHNOLOGY
INFORMATION AND
COMMUNICATIONS
TECHNOLOGY
OFFICE
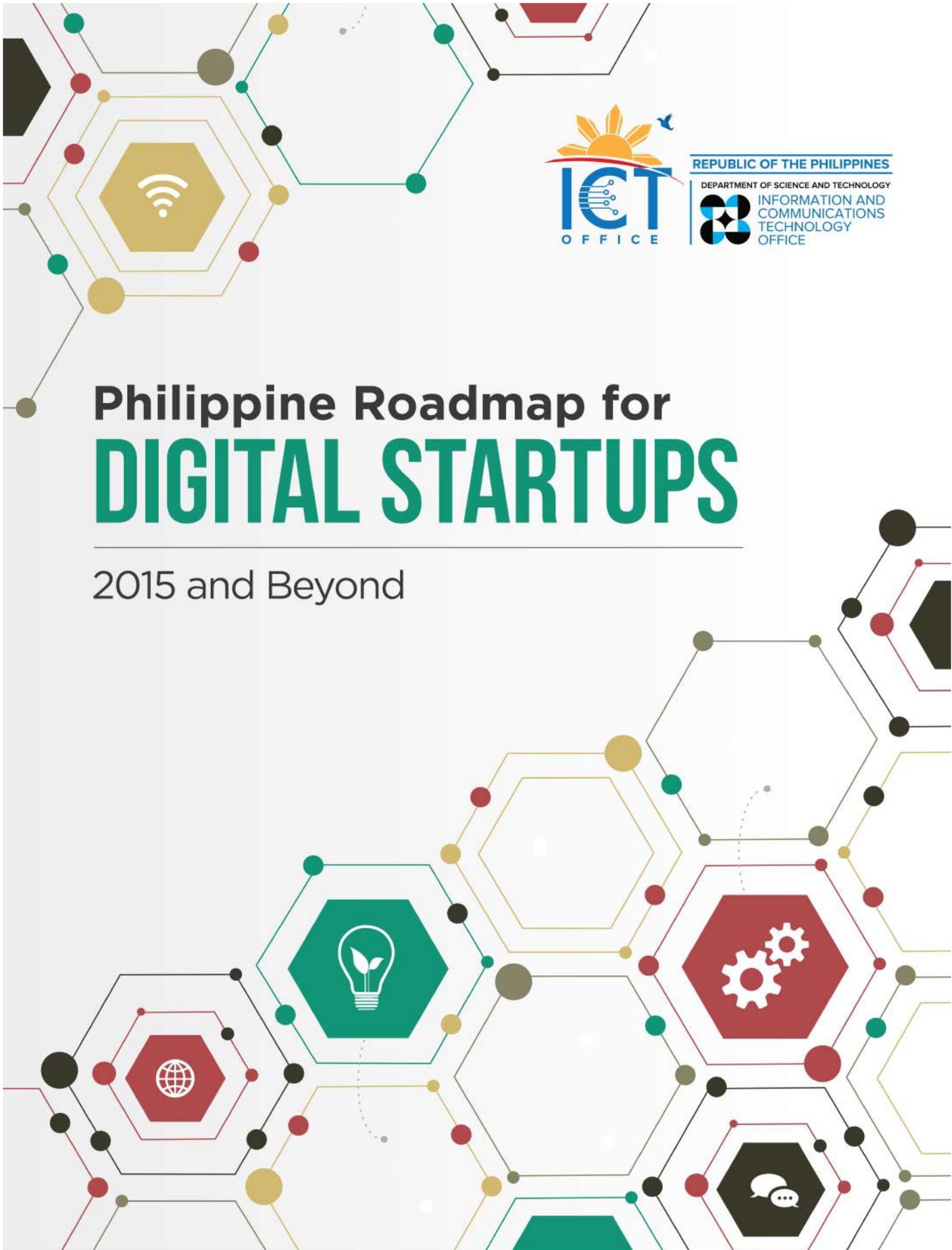
By the Community, For the Community

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Introduction

The Philippine Roadmap for Internet-related (Digital) Technology Innovation in the Philippines is a short- and long-term strategic plan for the Department of Science and Technology – Information and Communications Technology Office (DOST-ICTO) and the Philippine startup community towards developing internet-related innovation in the country. The goal of this initiative is to generate innovative startups that will spur economic growth and to find solutions to the society's most pressing and pervasive issues, such as social inequality, financial literacy, and healthcare provisions. This roadmap is a framework that clearly defines our overall direction to push for internet-related innovation – one that can leverage the country's resources to its highest potential.

The Roadmap is divided into three parts:

- Part 1 provides a clear definition of terms, goals, and benchmarks. A summary of current internet-related technology ecosystems, as well as one for the current Philippine startup ecosystem, is included.

- Part 2 provides insights from various startup ecosystems around the world, highlighting key features of each ecosystem. It also explores the Philippines' current progress in those defined key areas. To recommend areas of focus and future improvement specific to the Philippines, a SWOT analysis of the local ecosystem is likewise provided in this part.

- Part 3 enumerates the short- and long-term recommendations for all stakeholders to improve the Philippine internet-related startup ecosystem. The programs enumerated under the key areas identified on part 2 are based on existing programs from other ecosystems. These programs are then localized according to the SWOT analysis and the needs of the Philippines which are predefined on the second part of this Roadmap. A proposed list of steps and participants are identified for certain short-term recommendations.

The information and findings in this Roadmap are gathered from leading local technology startup founders, as well as from existing literature of various projects, government reports, and affiliates including leading universities and startups.

Part I

The Internet-Related (Digital) Startup Ecosystem

I. Definition of Terms

A Philippine startup is recognized as any business entity that is less than five (5) years old, registered with the financial regulatory authorities of any country, provided that majority of its team is operating and residing in the Philippines. The startup should have at least one (1) founder who is working full time.

Goals and Benchmarks of the Roadmap Project (Year-end 2020)

Benchmarked in 2020, the roadmap project's long-term agenda is to have an inventory of 500 Philippine startups with a total funding of at least 200million USD (including bootstrapped amounts and external funding) and a cumulative valuation of 2billion USD. The table below shows the target of the project; to wit, 8,500 high-skilled jobs created, 1,250 founders, 15,166,684 users acquired, and 719,737 paying customers.

Table 1. Target for 2020

	2015*	2020
Philippine Startups	100	500
Total Funding	$40 million	$200 million
Cumulative Valuation	–	$2 billion
High Skilled Jobs	1,700	8,500
Founders	250	1,250
Users Acquired	–	15 million
Paying Customers Worldwide	–	700,000

- *Industry estimate*

As of 2015, the ICT Office has identified around 100 startups; with private startups not on the inventory list estimated. Despite this number, the ICT Office aims for 500 startups that can produce results by end of 2020.

Currently, most of the startups in the country are in their early stage or seed stage, while only a few startups have made their exit (*see* Graph 1). By 2018, the goal is to have more startups in the level of Series A funding (*see* Graph 2). Beyond 2018 (*see* Graph 3), it is projected that there should be more startups that have successfully exited in the ecosystem. In the long run, the main goal is to produce the next billion-dollar tech startup from the Philippines. The community will review the term progress by end of 2018.

Graph 1. 2015 Stage of Startups
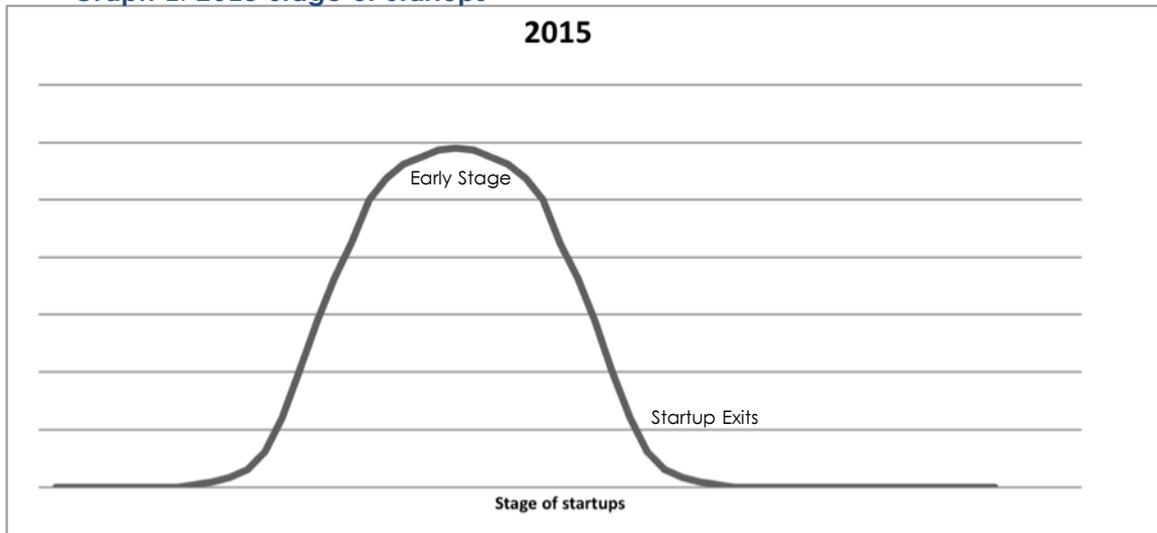
Graph 2. 2018 Stage of Startups
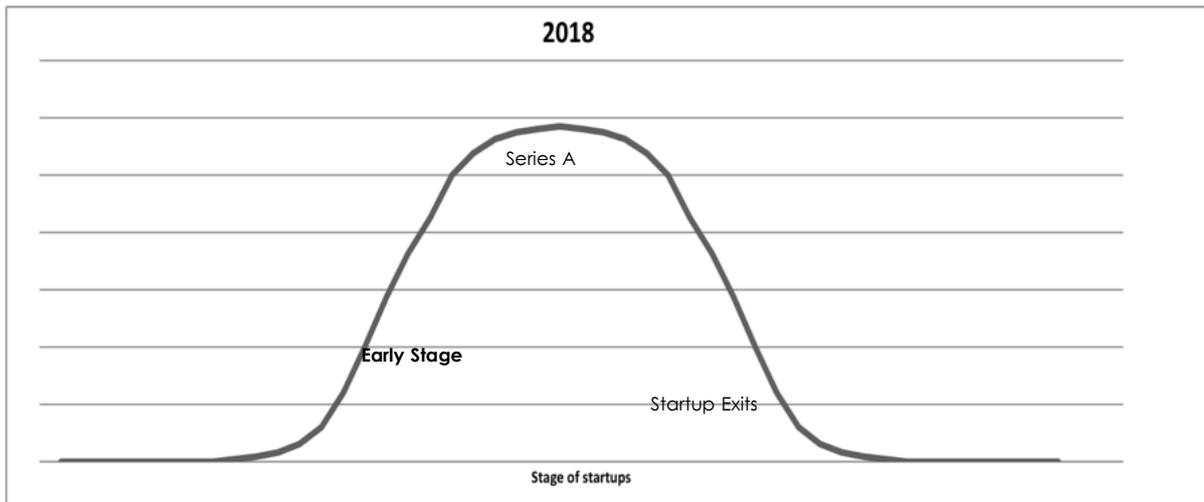
Graph 3. 2018 and Beyond Stage of Startups
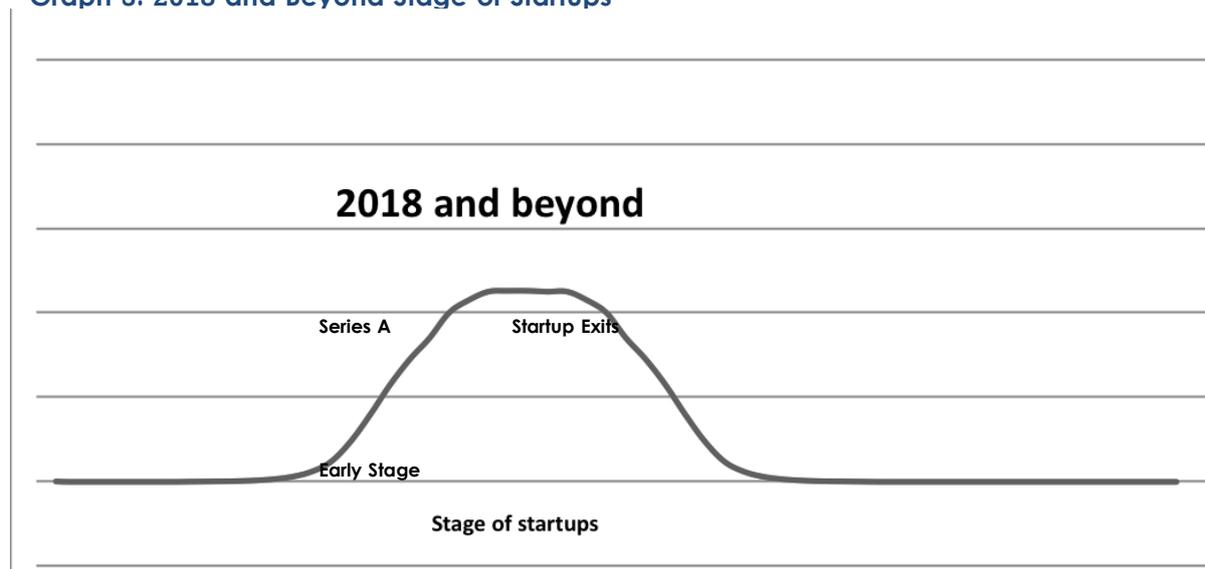
Classification

Periodically, new startup classifications emerge in the internet space. Figure 1 below shows the classifications of common internet-related startups, updated as of January 2015.

Figure 1. Classification of Common Internet Startups

- **e-Commerce** (ebay, Amazon)
- **Search** (Google, Duck Duck Go, Yahoo)
- **Communication** (Facebook, Viber, Skype)
- **Alternative Currencies** (Bitcoin)
- **Enterprise Security** (Palo Alto Networks)
- **Disruptive Services** (Uber, Homejoy)
- **Sharing Economy** (Getaround, Airbnb)
- **Internet of Things** (Nest, Pebble Watch, Android Watch)
- **Crowdfunding** (Kickstarter)
- **Autonomous Technologies (Drones)** (Parrot AR)
- **Rapid Prototyping (e.g. 3D printing)** (Makerbot, Autodesk)
- **Gaming** (Makerbot, Autodesk)
- **Financial Technology** (Venmo, Paypal)
- **Open Source** (Linux, Hadoop)
- **Media & Entertainment** (Youtube, Vimeo, Snapchat)
- **SaaS** (Salesforce)
- **Marketplace** (Craigslist)
- **Health Technology** (23andMe)
- **Education Technoloy** (Coursera)
- **Food Technology** (Spoonrocket, Munchery, Grubhub)
- **Travel** (Kayak)

Industries

Internet-related technology startups can create products intended for any industry. For example, a Communications startup (specializing in video services) can be applied specifically for health checkups. Alternative payments like Bitcoin can help

lower the cost of remittances for overseas workers. Figure 2 below shows an example set of industries covered by internet-related startups.

Figure 2. Industries in Internet-related Startups

- **Health**
- **Finance**
- **Agriculture**
- **Education**
- **Social Entrepreneurship**
- **Business Process Outsourcing**
- **Energy**
- **Tourism**
- **Enterprise**
- **Food Technology**
- **Communication**
- **Infrastructure**
- **Disaster Management**
- **Government and Legislation**

Development/Stages

Maturing startups enter into funding rounds to attain additional resources or to further develop its capitalization. Smaller funding rounds that occur earlier in a startup's life cycle transpire in smaller venues (e.g. university competitions specific to its students compared to regional competitions targeting startups wishing to raise a "pre-series A" round of funding). Startup founders, on the other hand, may choose to personally fund the startup (bootstrap). This Roadmap provides avenues to support private businesses willing to venture in startups.

Table 2 enumerates the funding rounds, its corresponding typical amount, investing parties, as well as an example of venues where these rounds are typically held. The Roadmap likewise provides support for various funding rounds.

Table 2. Investment Rounds*

Funding Round	Typical Amount (in US$)	Investing Parties	Raised where
Angel	50,000 – 150,000	Bootstrapped	Competitions, Universities, Incubators
Seed	150,000 – 750,000	Angel Investors, VCs,	Co-working spaces, Incubators, Accelerators
Pre Series A	750,000 – 3 million	Angel Investors, VCs, other institutions	Singapore, HK, Silicon Valley, Angels, competitions
Series A	3 million – 10 million	VCs, other institutions	Silicon Valley
Series B	10 million – 100 million	VCs, other institutions	Silicon Valley
Series C	more than 100 million	Investment Bank, PE, VCs, other institutions	Silicon Valley
Exit		IPO, M&A, profitable for more than 5 years	Stock Exchange, Private Agreements

*These are typical amounts based on international standard and does not include Unicorns

Classifying Founders and Entrepreneurs

Entrepreneurs are chosen on the basis of their level of educational attainment, years in their profession, subject expertise, and level of experience in the industry.

- Basic Education
- Higher Education
- Young Professionals
- Professionals
- Executives
- Retirees

In a study conducted by Kauffman Foundation, majority of Education and Tech entrepreneurs born in the US have attained a Bachelor's Degree. Figure 3 below shows the percentage of entrepreneurs and their educational attainment (Wadhwa, Freeman, & Rissing, 2008).

Figure 3: Degree Completed by US-Born Tech Founders

Legend:
- Associate's Degree, Certification, Some College
- JD
- PhD
- Bachelor's Degree
- MD
- High school Diploma or Lower
- Master's
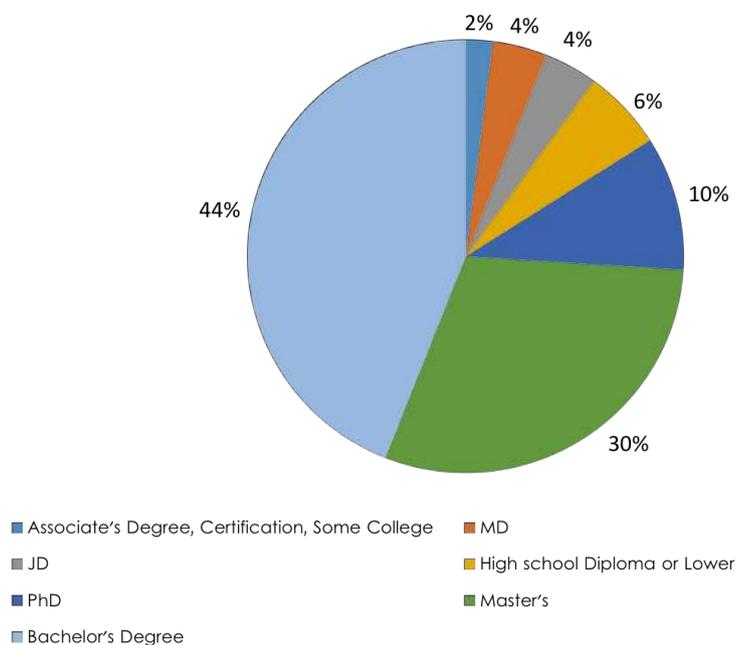
Source: Kauffman Foundation

Aside from educational attainment, age is also a factor in identifying founders. The Harvard Business Review completed a study of the founder's age of successful startups in 2014. The assessment found that more than 25% of $1 billion–valued companies were started by founders who are 35 years old and above.

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Graph 4. Founder Age of Successful Startups

FOUNDER AGE AT $1 BILLION VC-BACKED PRIVATE COMPANIES
Estimated using year of college graduation.

PERCENTAGE OF COMPANIES

SOURCE LINKEDIN, CRUNCHBASE, THE WALL STREET JOURNAL   HBR.ORG
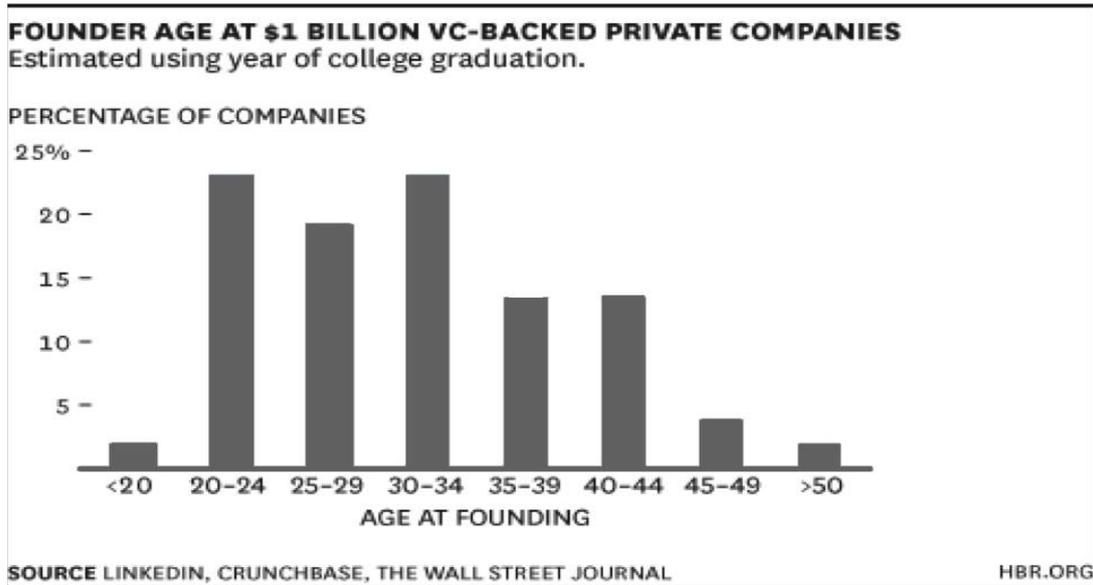
Source: Harvard Business Review

II. Trends in the Internet–related Technology Space

Based on the top 3 valuable companies in 50 countries, E–commerce and Search are the two (2) most popular industries, while Communication–focused companies such as Skype, Viber, Line, and WeChat, are sectors with the highest valuation (World Startup Report, 2014).

Graph 5. Internet Startup Industries/Classification
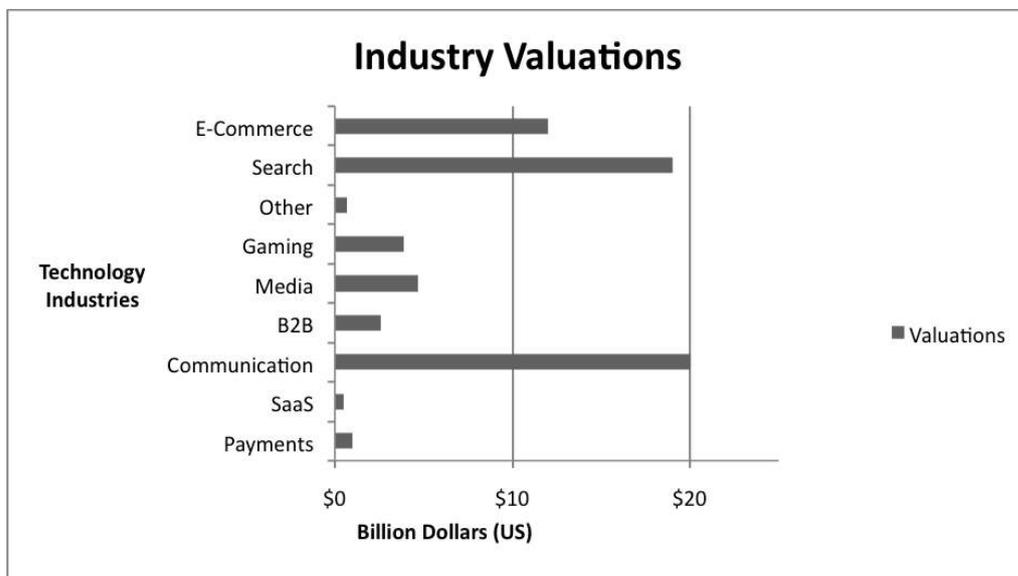
Source: World Startup Wiki

Graph 6. Industry Valuation

Most Popular Industries
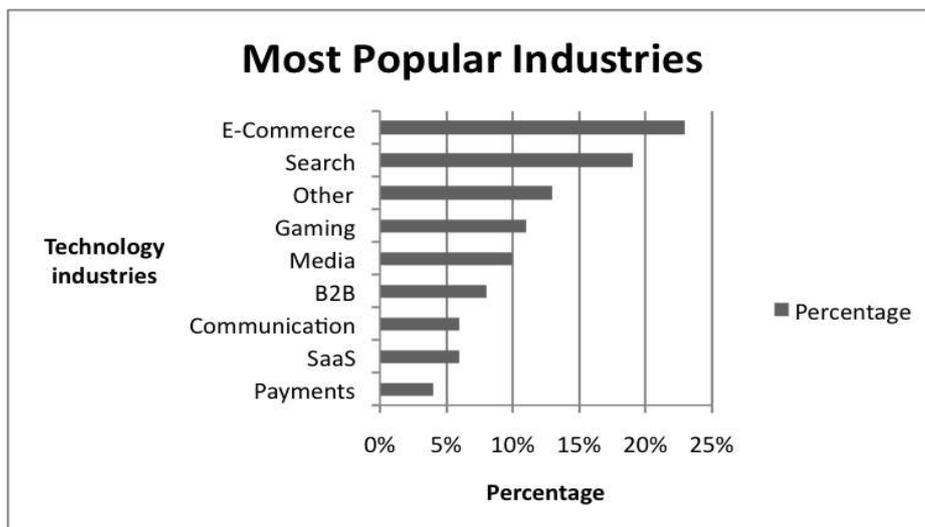
Source: World Startup Wiki

Technology startups (tech startups) are often launched to provide value to its niche market. Startups activities include acquiring users with exponential growth; disrupting an industry; raising funds; and exiting through an acquisition, an IPO, or continue as an ongoing business.

A good example of a tech startup success story is Facebook. Created and founded by Mark Zuckerberg in 2004, Facebook has more than 1.35 billion active users and is valued at $200 billion today. It acquired Instagram, a photo sharing application for smartphone users, for $1 billion in 2012 valuing each of its 33 Million users at $30 each. In 2014, Instagram had 300 Million users with a $35–billion valuation. Another communications app Facebook acquired is Whatsapp, which has 450 Million active users valued at $42 each during the time of its acquisition, at $19 billion in overall valuation (Gara, 2014).

To better understand what technology startups can do to a specific industry, it is noteworthy to look at the car–sharing economy which was disrupted by Uber. Valued at $41 billion today from its most recent post money funding valuation, Uber remains the most valuable private tech company in the world despite the challenges from regulators and traditional competitors from around the world. Heavily supported by its users, Uber has been battling for increased safety, convenience, and transparency (Kosoff, 2015).

Other great internet–tech companies based on both current and past successes are AirBnB, Alibaba, Snapchat (valued at $19 billion), Naspers from South Africa, Google from the US, Mercado Libre from Argentina (founded in 1999 and valued at around $3.7 billion). There is also Open Text Corp, a public Canadian company founded in 1991 and valued at around $6 billion, Skype from Estonia founded in 2003 and valued at $8.5 billion, Checkpoint from Israel valued at $13.6 billion, Line

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from Japan valued at $28 billion, Naver from South Korea valued at $28 billion, and Malaysia's MOL valued at $800 Million (World Startup Report, 2014).

Successful startup systems have made a significant impact to the growth of their economies and in attracting and retaining a highly-skilled IT workforce. Silicon Valley in California has been an influential driver towards America's economic growth, and a big contributor to America's overall GDP over the last 10 years. Its one (1) million tech workers received more than $120 billion in total tech payroll, an average payroll ($120,000 per year) which is significantly greater than the US average annual income ($52,000). With an 80% internet penetration rate, 64% of adults owning a computer and 91% owning a mobile phone, California has been regarded as a highly-concentrated tech savvy, innovative, and prosperous region (Ramos, 2014).

As a result of the trends mentioned above, the United States and other countries leading in startup development have prioritized education, infrastructure, investment-friendly capital and financial regulations, and strong intellectual property policy, in order to develop talent and raise capital investment in research and development.

**Growth Bubbles in Internet-based Industries**

Technology startup companies are valued based on its ability to produce long term earnings. The technology space is different from traditional tangible investments because of its high dependence on cash to burn to develop product, and further validate the market and generate revenue. This makes the industry highly speculative in nature since many will fail and only one in a hundred firms will sustain. This is a trend investors with years of experience in technology know and have devised a diversification strategy in their investments.

Looking at super-unicorns (over $100B valuation) with the likes of Google, Facebook, Yahoo, revenue streams and even profits are realized after 7 to10 years in operations. Their burning rates have exceeded returns during the first few years in operations. This is deemed normal in the tech space, harvesting fruits of years of labor in the long-run.

The Internet bubble that burst in the year 2000 was due to a number of circumstances. First, due to the rate of globalization and failure of all other markets at that time (i.e. 911 attacks in the US, 1997 Asian crisis, 1998 Russian recession, LTCM's Collapse) it enticed investors and participants to invest resources heavily in the internet space that seemed revolutionary at that time, making it look like a lucrative industry to be in for everyone (Thiel, 2014). Like every bubble in history, there was too much optimism, speculation, and leverage with no real revenues being generated. Once herding in behavioral economics takes place and real value is realized, a bubble bursts.

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Comparing today's internet scene form the year 2000, it is seems similar because of a growth in excitement in the space world-wide. With an influx of participants jumping into the bandwagon, there is also an increase in money invested in the space. The growth is seen with an increase of a number of unicorns (US$1B companies) over the years. There are 32 new unicorns as of June 2015, 47 new unicorns in 2014 as against 7 and 8 in 2012 and 2013 (Mahmood, 2015). This is also supported by Lee's (2015) report highlighting 86 unicorns in the club founded from 2005 but is still a rare 0.14% of venture-backed startups. Uber is valued at $42B, which is still not yet a super unicorn.

Graph 7. Unicorn Companies By Valuation
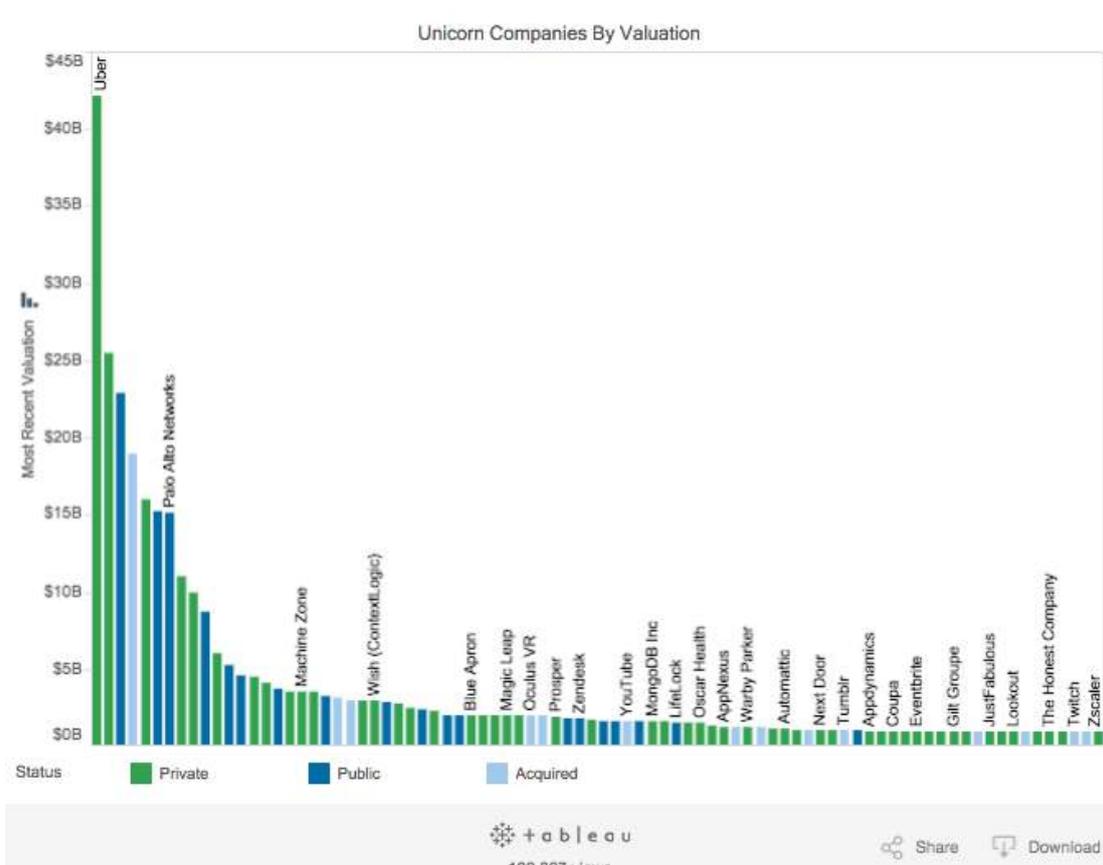
(Source: Tech Crunch, Lee, 2015)

On the other hand, what makes it different this time around is the advancement of internet infrastructure and growth in metrics in mobile, smartphone, internet penetration rates (Merrymaker report, 2015). People's information are easily accessible online now than ever before. Advanced search engines, online market places and social media have made it possible for startups to easily reach its target customers through ads online and even raise funds through angel list. Dave McClure's presentation on Slide Share (2015) also revealed that there is less capital needed to build product and access more customers at lesser amounts of time as

compared to pre-2000 because of such advancements (i.e. 3B people online now versus 100m people online in year 2000, 3 to 90 days development cycle versus 12 to 24 months to develop product in year 2000). Because of the developments, there are more innovative products in the internet space for customers to adapt today (i.e. mobile phone to get onto Uber or laptop and internet connectivity to connect to Evernote).

Is the tech scene today a bubble? Some experts say it is a bubble in Silicon Valley, but it is seen as more conservative in Asia. Others, however, say it is not a bubble yet, but the activities at this rate are reasonable. It is difficult to define the increase in activities today without data noting how many of these startups are highly leveraged (data to find out if investors/founders have sold personal assets such as homes and expenditures above threshold/savings to jump into bandwagon). There is a need to keep in mind that as more investors and entrepreneurs come into play with the ongoing positive atmosphere, they are more inclined to protect their company and investments by inflating numbers. Valuations may also have deviated from conventional methods as investors may have also failed to discount the rising competition in the scene. Given the poor investment climate in China, failing economies such as Greece and the EU and other failed markets, there is a need to be extra careful and vigilant with the funds cycling into startup investments.

If the said bubble exists, grows, implodes, or bursts, the Philippines need to take measures today to protect its investors, founders, and its employees. To mitigate the effects of a bubble, we need to educate investors today on the risks involved in startup investing so they do not invest from leverage (i.e. sell personal assets such as homes and get involved in startups by having more expenditures than threshold) and teach them diversification strategy. We also need to educate the importance of "smart money" so that startups only accept funds from those that can add real value to a startup's operations. Startups should also focus on adding value to potential users through their product. The Philippines as a whole should focus on key industries we have competitive advantage on to reduce costs when operating. We also need to focus on areas that can give more opportunities (i.e. e-commerce for certain regions that produce native products, financial technology to reduce unnecessary costs, social enterprises like crowdfunding to back projects and extend micro funds to those who deserve it).

III. The Philippine Startup Scene

Technology startups have a long history with some local exits. Prior to the first Startup Weekend in 2011, there were existing mentorship and incubator support from Ayala Foundation (2000), UP Enterprise (2009), and Ayala Tech Incubator. However, the Startup Community became mainstream in 2012 when Kickstart, Wireless Wings, and Ideaspace started funding a number of potential startups and entrepreneurs. The excitement and growth of their portfolio companies led to the participation of more entrepreneurs (e.g. Sulit, Chikka, Level Up, Airborne Access, etc.).

From the survey conducted by the Philippine Startup Report team in 2013, about 70% of total startups are surprisingly bootstrapped. These startup founders relied on their personal resources, turning to family and friends as Angel Investors. In 2014, there were 15 Venture Capital companies in inventory which had an average of $100,000 in funding for Philippine startups (World Startup Report, 2014).

There were a number of support networks activities in the form of local competitions such as the Philippine Startup Challenge, meet–ups and hackathons such as Startup Weekend, and developer conferences such as DevCon and SoftCon. The 3rd Geeks On A Beach is another remarkable event that brings together international startups and investors. (*See* Appendix 1: Inventory List for the Philippine Startup Scene for a list of startups, investors, and community supporters.)

Demographics and Important Metrics for Startups

The table below shows that the Philippines is a highly populated country that are relatively poor based on the GDP per capita. Uneven distribution of wealth is significant, with only 1% of the population classified as A–class families and the bottom 90% are classified as C– to E–class families. This fact can have implications on the success of internet or mobile strategies. Depending on its target audience, a startup may need to decide choosing between iOS or Android as a development platform. Adoption can also be impacted, as internet penetration is significantly smaller in the Philippines compared to other developed nations.

Table 3. Demographics of the Philippines and Other Countries as of 2014

	Philippines	US	Malaysia	Thailand
Population	105 million	314 million	30 million	67.2 million
GDP per capita	$2,500	$50,000	$10,000	$5,816
Internet Users	38 million	277.4 million	20 million	26.1 million
Fixed Broadband Users	2.1 million	87.92 million	24 million	5.4 million

Source: World Startup Wiki

Infrastructure and ease in doing business also plays an essential role in attracting internet-based startup firms. Considering immigration policies, tax incentives, and other legal and compliance requirements, founders choose to run and set up their companies in more business-friendly environments such as Singapore and Hong Kong. As can be seen in table 4, while the Philippines may take longer to launch a business as compared to Singapore and US, World Bank data reveals that it is the Philippines has an advantage than Brazil. Other markets may also have more mature financial markets (which is beneficial in the event of an IPO), more efficient and reliable systems for legal recourse, or a more favorable geographic location.

Table 4. Period of Registration of Businesses

	Philippines	US	Singapore	Brazil
Number of days to register a business	35 days	5 days	2.5 days	107.5 days

Source: World Bank

E-Commerce Platforms

Options for delivery and payments may also affect which internet-based businesses will thrive. Countries with low credit card penetration rates rely on alternatives, such as Cash on Delivery (COD) for e-commerce transactions. Also, approximately 97% of sales from e-commerce sites (airline ticket sales and other goods and services such as promotional coupons) do not require delivery of physical goods. In the case of the Philippines, it still lags behind US, Thailand, and Malaysia in terms of its infrastructure in this regard.

Table 5. Infrastructure Rating as of 2014

	Philippines	US	Thailand	Malaysia
Delivery	1	5	3	–
Legal	3	5	3	4
Online Payment	1	5	3	2
Internet	2	5	3	4

Source: World Startup Report 2014

Rating:
1 – Developing 2 – Below Average 3 – Average 4 – Above Average 5 – World Class

Table 6. Efficiency to Run a Business

	Philippines	US	Malaysia	Thailand
Credit Card Penetration	3%	67%	12%	5%
Smart Phone Penetration	38.7%	56.4%	34.5%	31%
Mobile Phone Penetration	107%	103%	143.8%	125%
Minimum Salary	$2,700	$16,000	$3,200	$3,012
Average Salary: Entry Level Engineer	$12,000	$50,000	$10,000	$5,439
Senior Level Engineer	$24,000	$120,000	$21,000	$21,759

Sources: World Bank 2011, http://think.withgoogle.com/mobileplanet/en/

Running an internet-based startup also requires fast and reliable network connections to facilitate its operations. Table 7 below shows the business rankings, as well as the internet infrastructure ratings, of Asian countries. It can be noted that the Philippines belong to the lower level among its Asian neighbors.

Table7. Top 10 Business Environments

Rank	Country	Total Score
1	Singapore	8.65
2	Switzerland	8.52
3	Hong Kong	8.39
4	Canada	8.3
5	Australia	8.29
6	Sweden	8.26
7	US	8.25
8	New Zealand	8.18
9	Finland	8.18
10	Denmark	8.16
14	Taiwan	7.85
19	Malaysia	7.56
26	South Korea	7.35
27	Japan	7.33
34	Thailand	6.78
50	China	6.39
53	Philippines	6.28
56	Indonesia	6.09
59	Vietnam	5.87

Sources: The Economist Intelligence Unit, in its Business Environment Ranking (2014-2018)

Table 8. Ease of Doing Business in the World

Rank	2008	2009	2010	2011	2012	2013	2014
1	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore
2	New Zealand	New Zealand	Hong Kong, China	Hong Kong, China	Hong Kong, China	Hong Kong, China	Hong Kong, China
3	US	Hong Kong, China	New Zealand	New Zealand	New Zealand	New Zealand	New Zealand
4	Hong Kong, China	US	UK	US	US	US	US
5	Denmark	Denmark	US	Denmark	Denmark	Denmark	Denmark
6	UK	UK	Denmark	UK	Norway	Norway	Malaysia
7	Ireland	Ireland	Norway	Norway	UK	UK	Republic of Korea
8	Canada	Canada	Ireland	Ireland	Republic of Korea	Republic of Korea	Georgia
9	Norway	Australia	Canada	Sweden	Iceland	Georgia	Norway
10	Australia	Norway	Australia	Saudi Arabia	Ireland	Australia	UK

Source: Doing Business 2014, by The World Bank and the International Finance

Table 9. Ease of Doing Business in the World

Rank	2008	Rank	2009	Rank	2010	Rank	2011	Rank	2012	Rank	2013	Rank	2014
12	Japan	12	Japan	12	Thailand	16	Republic of Korea	17	Thailand	16	Taiwan, China	16	Taiwan, China
15	Thailand	13	Thailand	15	Japan	18	Japan	20	Japan	18	Thailand	18	Thailand
30	Republic of Korea	23	Republic of Korea	19	Republic of Korea	19	Thailand	25	Taiwan, China	24	Japan	27	Japan
50	Tawian, China	61	Tawian, China	46	Taiwan, China	33	Taiwan, China	91	China	91	China	96	China
83	China	83	China	89	China	87	China	98	Vietnam	99	Vietnam	99	Vietnam
91	Vietnam	92	Vietnam	93	Vietnam	90	Vietnam	129	Indonesia	128	Indonesia	108	Philippines
123	Indonesia	129	Indonesia	122	Indonesia	126	Indonesia	136	Philippines	138	Philippines	120	Indonesia
133	Philippines	140	Philippines	144	Philippines	134	Philippines						

Source: Doing Business 2014, by The World Bank and the International Finance Corporation

Internet

According to Akamai's report on internet broadband connection, the Philippines has an average of 2.5 Mbit/s compared to the world's top 3 — Korea, Hong Kong, and Japan that have 25.3, 16.3, and 15 Mbit/s respectively. The United States, meanwhile has only 11.5 Mbits/s. Aside from slow internet connection, it can be

noted that the Philippines offers a more expensive service compared to Singapore and Thailand.

Table 10. Comparison of Price and Speed of Philippine Internet

Country	Speed (Mbits/s)	Price (USD)
Philippines	2–5	$22.00–$44.00
Singapore	15	$29.00
Thailand	12	$25.00
Malaysia	10	$62.40

Source: rappler.com and kinibiz.com

Participants

Author's Note: It has been a challenge collating information on the Philippine Startup Ecosystem because of a lack of a system established to classify a Philippine startup prior to DOST–ICTO's inventory efforts in early 2015. The inventory list as of March 2015 can be found in Appendix 1: Inventory List for the Philippine Startup Scene.

Below is a brief introduction of existing Startups, Investors, and Community Supporters:

Startups

- *Level Up,* a gaming company acquired by Philippine Long Distance Telephone Company (PLDT)
- *OLX Philippines*, an online classified ads company combining Netbooster, Morphlabs and Sulit
- *Chikka*, an internet–based instant messenger pioneered Dennis Mendiola. This was later acquired by Smart Communications in 2009.
- *Airborne Access*, the first and largest WiFi hotspot company founded by Jay Fajardo in 2002; this was also acquired by PLDT.
- *iRemit,* a remittance company with a market capitalization of US$35 million and was incorporated in 2001.

Appendix 1.1 reflects a number of startups that have exited; however, the list is incomplete because of unavailable public data.

Investors

Funding beyond pre–series A is notably lacking in the Philippines, leading most founders to join competitions and raise funds in other countries such as Singapore,

Hong Kong, and the United States. Developing continuous support networks for a startup's various stages can benefit the development and growth of the local ecosystem. Appendix 1.2 list summary of active investors and their commitments in the Philippines as of January 2015.

Community Supporters and Events

The Philippines has a healthy support network in terms of events and meet-ups that highly encourage entrepreneurship. One example is Go Negosyo which has been focusing on Small Medium Enterprises, although the tech support network is fairly new. There's a need for experienced and successful individuals who can mentor young talents particularly for each stage of a startups development. For a complete list of Community Supporters and Events, please refer to Appendix 1.3.

For a list of current market leaders in different internet business models, please refer to Appendix 1.4 –– the Philippines's Opportunity Map.

Part 2

Patterns of Technology Startup Ecosystems

The Philippines has a young ecosystem with attractive demographics and unique resources for particular opportunities. Hence, if the ecosystem is patterned after those of the other countries, there is a need for the local startup ecosystem to localize and factor the country's unique need,

I. Leading Ecosystems

Silicon Valley

Successful founders were once employed. Silicon Valley has a long history of military funding from the government to develop technologies for its armed forces. Significant advancement in electronics and internet technologies were developed there, from companies like Shockley Semiconductor Laboratory, Fairchild Semiconductor, PayPal, Google, etc. (STAC Silicon Valley, 2012). The region benefited from Stanford and Berkeley Universities, which took active roles in promoting its technical programs and the development of support infrastructure for small enterprises, such as the Small Business Investment Company (SBIC).

Deal flow (good startup investments) is a magnet that attracts investors. In 1970, the continued growth of the industry in the area saw the emergence of venture capitalism, with companies like Kleiner Perkins. These financial institutions benefited from the availability of investment opportunities, while at the same time assisting in the funding, acquisition, and sale of the region's most successful companies.

Israel

Training. Israel's need for defense development drove early demand for engineering talent to develop a means of defense from hostile neighboring countries and other external threats. With strong government support for military training and engineering, and a strong entrepreneurial appetite, Israel has over 70 companies listed on the NASDAQ with 75% of those supported by Binational Industrial Research and Development Foundation (government led) and more than 1,200 startups to date (Nguyen, 2013).

Collaboration. The startup scene in Israel is fueled by strong research and development programs such as BIRD Foundations' $110 million funding for US–Israel projects. There is also an infusion of funding such as Yozma Venture Fund's $170 million to start venture capitals to match private sector investments and The State

of Israel's Technological Incubators Program of infusing $30 million angel funding for high-risk early stage companies.

One of its most famous companies is Waze, a mapping mobile application acquired by Google in 2013 for over $1 billion. It had more than 50 million users in more than 100 countries (MacMillan & Womack, 2013).

China

Intellectual property is as important as education. Greater China's Quest for Innovation (2008) pointed out the importance of Intellectual Property (IP) and Education. Taiwan's labor market attracted multinationals to invest in semiconductor and hardware technologies, research, and manufacturing. As wages increased in Taiwan, manufacturing moved to mainland China. The transition was lopsided with poor IP protection, with high-tech high-skilled manufacturing –– being a manufacturing sector that did not mature in China until patent laws were better enforced and an environment attracting skilled labor was developed.

The right market for its products. China has a population of 1.5 billion, a 45% internet penetration rate in 2013, and an increasing number of affordable smartphone manufacturers (Huawei, ZTE, Xiaomi). These trends saw a corresponding growth of internet-related technology startups in the country. The Chinese government has made an effort to support these businesses by developing science parks in various cities (World Startup Wiki China, 2014).

Create an environment that fosters creativity. China's booming startups began as companies resembling some Silicon Valley startups, which were developed specifically for the local market. An example is Tencent that owns messaging application WeChat (Communications). They also own TenPay, which operates similarly to PayPal. The most recent IPO hit is Alibaba (E-commerce) which, according to the World Startup Report, has a valuation greater than all top 1-startup companies from the next top 48 countries out of 50 combined. There is also Sina Weibo, which is considered as China's own version of Twitter, as well as Baidu, China's Google (Toom, 2013). Given the country's own language (Mandarin), its government's stand in information control, entrepreneurs saw a need to localize startup ideas that are successful elsewhere. Given the potential market share of 1.5 billion people in the country, this proves to be an advantage.

Hong Kong

Hong Kong's market is different from China since the government does not control information there. Hong Kong has faster internet speed of 63.3mbps and has a 96% smartphone penetration rate (startmeup.hk, 2014). Although its startups are not as valuable as China's Alibaba, Baidu, and Weibo, this has to do with its corporate

culture and expensive standard of living. According to a 2014 study by the Center for Entrepreneurship of Chinese University of Hong Kong, 88% of entrepreneurs who owns a startup said that the major source of their capital is from their own money.

Taiwan

The Taiwan government provides $400 million of funding for startups; while for local venture capitalists, they invest an average of $100 million every year to fund 30 to 50 startups (Pasquier, 2014). One of its popular companies is Kkbox, a music streaming service provider. It currently has over 10 million registered users and two (2) million paying subscribers (Wee, 2014).

South America

In 2010, Chile government launched Startup Chile to entice foreign talent to run their startup in Chile and influence local entrepreneurs. The program grants $40,000 to startup founders from around the world to operate in Chile for three (3) months without taking equity. Founders are given a 1-year visa and full support for their startups (Geromel, 2012). The startup is required to earn 4,000 social capital points by conducting workshops and mentoring local entrepreneurs who also want to start their own companies (Edwards, 2013). The program has driven entrepreneurship and knowledge exchange. It has also attracted Venture Capitalists and private funds to search for investments in Chile. At present, it has created 700 jobs with 50% of participants still operating in Chile (Geromel, 2012). Since then, there is a growing number of stronger candidates applying to the program every year.

> *"We never talk about Chile as a final market, because it's not big enough"*, says Vidal, Startup Chile Director. *"What we sell is that Chile is a great platform to start, to test, and to grow from. The political sphere is stable, the economy is stable, all of the legal things actually work, the regulations are friendly... so if you can set operations in Chile and grow from Chile, it will be easy for you to grow in the rest of Latin America or abroad,"* he added.

This is a model that a number of countries have sought to replicate. Start-Up Chile's directors have worked with the organizers of Start-Up Brasil, Start-Up Perú, and Malaysia's MaGIC, sharing a playbook they've created with any countries that are interested" (Magee TechCrunch, 2015).

Since its launch in 2010, there are a number of successful startups that originated in Chile. An example is Safer Taxi, which operates similar to GrabTaxi. The mobile application currently operates in three cities, namely Santiago, Buenos Aires, and Sao Paolo (Geromel, 2012).

The government of Brazil also started its own Startup Brazil. It also has developed a technology ecosystem. It set up a Google campus designed to incubate startups. The government matches the investment of around $87,000 (Moules, 2014). Other South American countries are also driving their own technology ecosystem such as Colombia and Valenzuela. Angel List has listed in their website *(http://angel.co/south-america)* 1,832 angel investors and 3,308 startups operating in South America as of March 2015.

Singapore

Singapore is considered to be the startup capital of Asia because of the number of startups it attracts for both starting (registering) company, running company and raising funds in the Southeast Asian region. Alongside its "Smart City" platform for encouraging technology infrastructure, it has built incubation facilities (Block 71) and has increased exposure to funding access. The government also has attractive incentives and legislation for startups.

Government develops infrastructure. In 1999, it established Infocomm Development Authority of Singapore (IDA) that seeks to transform Singapore into the World's first Smart Nation through its Intelligent Nation 2015 (iN2015) masterplan. Its achievements include ultra-high speed, pervasive, intelligent, and trusted ICT infrastructure, as well as a vibrant ICT ecosystem with a ready pool of tech talent.

It aims to provide 80,000 additional jobs, 90% home broadband usage, and 100% computer ownership (Infocomm Development Authority of Singapore). It was able to establish a highly-skilled IT workforce that has 144,300 employed Infocomm manpower (2012). Deepening skills for high-end, high-value jobs with over 13,000 professionals benefiting from Critical Infocomm Technology Resource Programme (CITREP) has expanded, which endorses over 400 certifications and training program offered by 70 course providers.

With the IDA program, the following have been established (www.iDa.gov.sg, 2015):

- Education – Eight Future Schools have been established which focused on creating diverse learning environments
- Healthcare – Telehealth enables medical caregivers to remotely monitor chronic disease patients at NUHS
- SMEs – iSPRINT has helped over 5,000 SMEs that used infocomm solutions in their business and over 3,000 enterprises to be supported in the adoption of SaaS solutions
- eGov – eCitizen portal provides first-stop access to cross-agency content and over 400 government e-services
- Mobile Government – More than 100 unique mobile services from government agencies, non-government entities such as restructured hospitals and

universities, as well as apps co-created with the private sectors that utilize government data are available on mGov@SG

- Finance – Launch of nationwide NFC payment, accepted at over 30,000 payment points
- Logistics and Supply Chain – e-Freight@Singapore is established to enhance competitiveness and to increase productivity in the air cargo logistics sector through infocomm
- Hospitality, Tourism, and Retail – these sectors were transformed via the Digital Concierge programme, catalyzing the adoption of mobile commerce and services

The Infocomm industry revenue reached $102 billion in 2012 — an increase of 23% year-on-year with its exports growing 33% year-on-year to reach $78 billion.

Block 71 – **"Beehive" for startups.** Block 71, an industrial building, is subsidized by the government for startups operating less than five (5) years. Although their lease contract is renewed every two years, startups can stay up to six (6) years in operations (Lee, 2014).

Today, Singapore has about 800 technology startups (The Economist, 2014). One of its popular startups is the video streaming website, Viki, which was acquired by a Japanese e-commerce company, Rakuten, for $200 million (Swisher, 2013).

Malaysia

Government provides signaling of investments. The Malaysian government launched Cradle Fund, a funding program for startup companies, in 2003. In 2006 another funding program, Malaysia Pre-Seed Fund was created. These funding programs supported more than 800 startups in the country (World Startup Wiki Malaysia, 2014). Nazrin, CEO of Cradle, in a 2013 interview mentioned that they "...have 9 [Venture Ccapital] companies; five of them are government-owned and the other four take money from the government in one way or another." (2014, World Startup Wiki Malaysia)

Centralized Body or Portal of Activities. Malaysia's online portal, StartupMalaysia.org (http://www.startupmalaysia.org) has compiled the various programs to train and support talent and startups. It contains all the startup weekend events, camps, and coding classes with a strong advisory board like Marc Nager, CEO and President of UP Global.

Various countries have also made it easier to integrate all activities into one portal for visibility and transparency such as Russia's Rusbase (http://rusbase.com/#news).

Graph 8. Funding is Relevant to Success

Biggest Exits in Malaysia

Startup Companies

- SAYS
- IbuyAsia
- ICarAsia
- My EG Services Bhd
- iProperty Group Ltd

■ Exit Amount ($USD)

$0 $200 $400 $600

Millions (US Dollars)
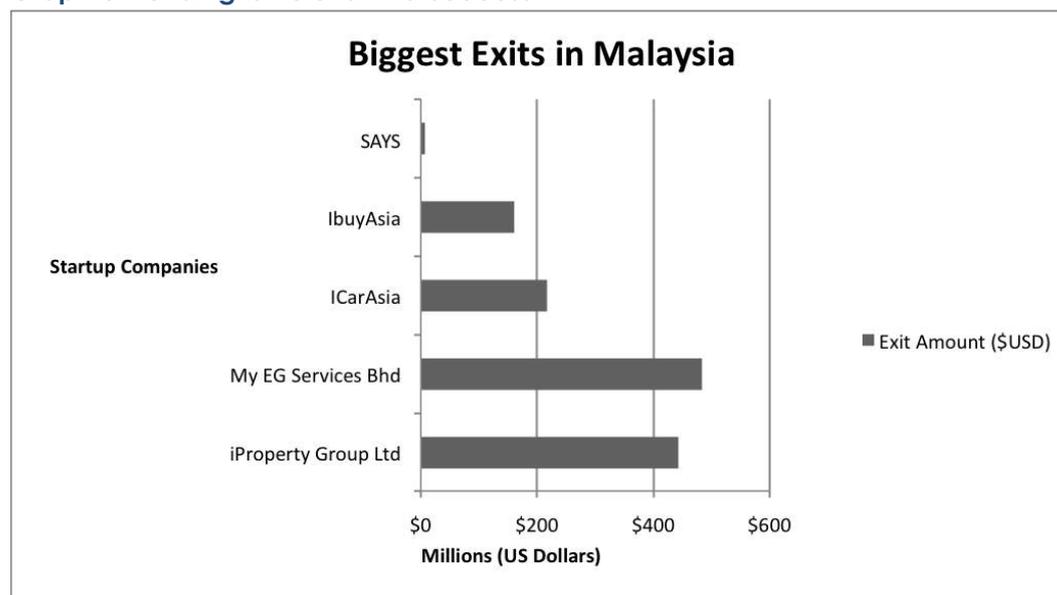
Source: World Startup Wiki Malaysia

Thailand

Technology education is highly valued although job vacancies in the field of engineering are not that many. Despite this, tech entrepreneurs in Thailand have been mentoring a number of startup entrepreneurs (Shelters, 2013). Presently, there are 400 startups in Bangkok alone, which comprise more than half of the Thai startup community (Horn, 2014).

Agoda, a hotel reservation online booking, and Ensogo, an e-commerce platform which was later acquired by Living Social, are popular startups from Thailand (Wee, 2013).

Indonesia

Indonesia, just like the Philippines, is active in social media. They are considered the Twitter capital of the world having 2.4% of the total tweets worldwide coming from Indonesia (Cosseboom, 2014). It is also the 4th most active Facebook users with 69 million active users.

Online shopping startups are the most popular and successful startups in the country. Online shopping has attracted 5.9 million online shoppers as of 2014 (Pasquier, 2014). Majority of the online transactions are made through messaging applications like Line and Blackberry Messenger. Tokopedia, for example, is the leading online marketplace in Indonesia where entrepreneurs can open and operate their own online stores. It also received $100 million funding from Softbank

Internet and Media, Inc., and Sequoia Capital (businesswire.com, 2014). Likewise, Zalora and Lazada (Rocket Internet) expanded its operations in Indonesia.

Korea

South Korea has 97% internet broadband penetration rate with a remarkable internet speed of 50 Mbits/s (McGlade, 2014). With its government funding of $3.2 billion for startups in the next three years and Community funding support from VCs and Accelerators (Millard, 2014), it is not, therefore, be a surprise to see a number of valuable companies.

KakaoTalk, a mobile messenger service, is one of its well-known companies. It has over 150 million users worldwide with a 95% penetration rate on Korean smartphones (Millard, 2014) and a total valuation of $2 billion (Wee, 2014). In addition, Korea's e-commerce company, Coupang has received a lot of acclaim globally as the largest online retailer available on smartphone (Koo, 2014) valued more than $1 billion after raising $100 million of funding (Frier and Khariff, 2014).

II. Localizing Development in the Philippines

While still in its nascent stages, the Philippines should factor in its unique characteristics, available resources, and future needs to remain competitive with other startup ecosystems. Available resources can be allocated to sectors and industries where the Philippines have a distinct advantage to service the local market or to outsource to other countries.

The Philippines, by all means, should strive to develop itself as an innovative hub by aligning its resources and core strengths with an approach that is carefully planned and studied. Technology innovation plays a critical role towards economic growth, therefore, the Philippines should aim to reach its highest potential by becoming more innovative in internet-related technology.

Following the above premise, the government must, therefore, focus on the unique factors that the country has that should be considered. These are cultural (long-term), and economic (short-term) such as the BPO Industry and OFW Remittances.. Some of the unique factors that need to be considered are cultural (long-term), and economic (short-term) such as the BPO Industry and OFW Remittances. We need to meet the demands of the future in improving healthcare and education.

Figure 5. SWOT Analysis of the Philippines
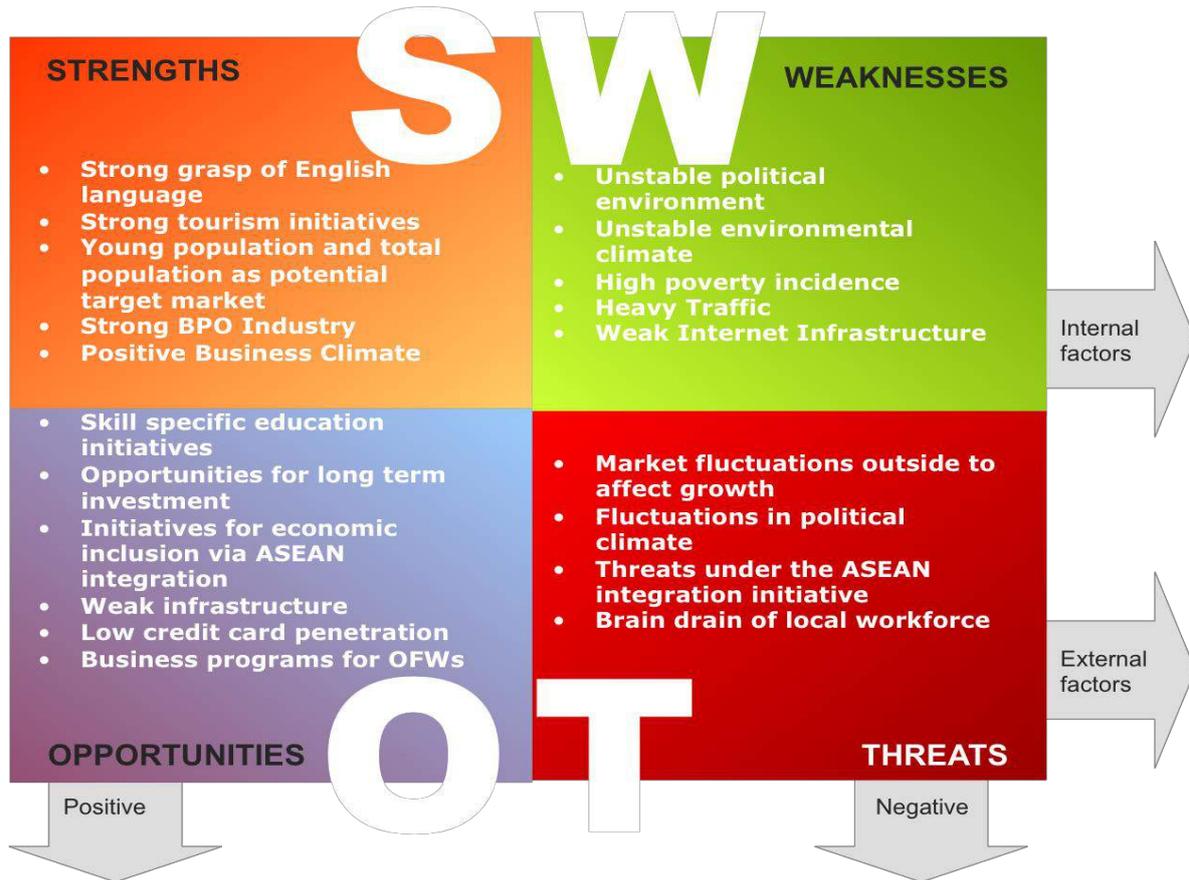
Strengths

Strong Tourism Initiatives. The Philippines launched the tourism campaign "It's More Fun in the Philippines" back in 2012, which highlights the immersion of tourists in the Philippine culture in the form of destinations, people, and experiences. This initiative by the Department of Tourism brought total earnings of US$4.84 billion, with a growth of 10% against the previous year's earnings of US$4.40 billion. Tourism contributes to at least 11.1% of GDP in 2014, according to the World Travel and Tourism Council.

Graph 9. Visitor Receipts in the Philippines from 2010–2014
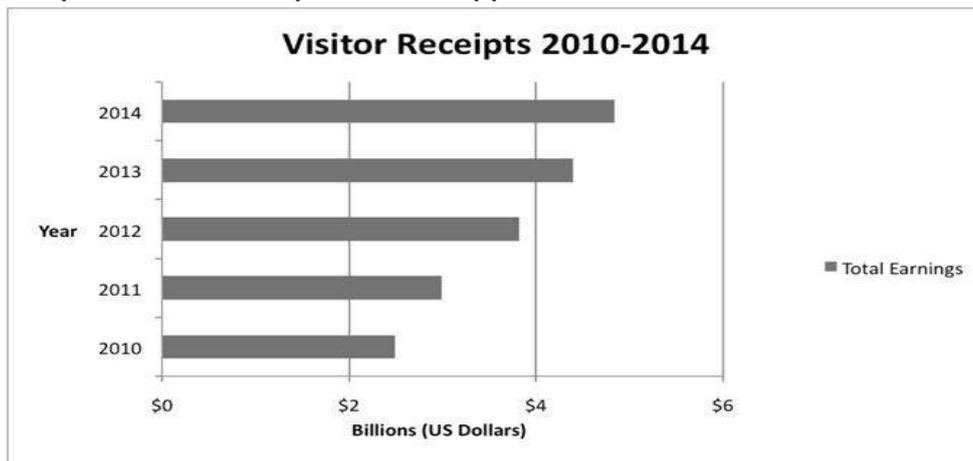
Source: Tourism.gov.ph (Feb 2015)

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Graph 10. Total Contribution of Travel and Tourism to GDP
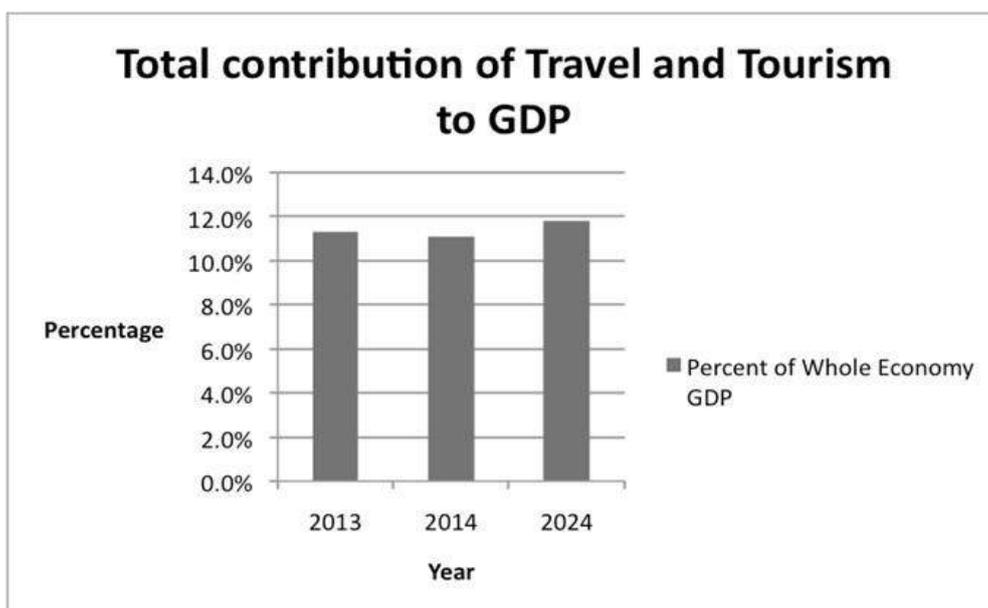
Source: World Travel & Tourism Council

Table 11. Total Contribution of Travel and Tourism to GDP

INTERNATIONAL ARRIVALS	
2014	4,833,368
2013	4,681,307
2012	4,272,811
2011	3,917,454
2010	3,520,471

Source: Tourism.gov.ph (Feb 2015)

Table 12. Top 10 Visitor Markets in the Philippines for 2014

TOP 10 VISITOR MARKET	
South Korea	1,175,472
United States of America	722,750
Japan	463,744
China	394,951
Australia	224,784
Singapore	179,099
Canada	143,899
Taiwan	142,973
Malaysia	139,245
United Kingdom	133,665

Source: Tourism.gov.ph (Feb 2015)

Strong Grasp of the English Language. According to the Educational Testing Services Report, Filipinos have a strong grasp of the English language, with the Philippines ranked as 35th out of 163 countries worldwide on TOEFL scores in 2010. The other countries with higher TOEFL scores in Asia are Singapore and India. Such language proficiency enables Filipinos to attain jobs that require a strong proficiency in English especially in the BPO industry and jobs abroad. Also, the Philippines ranked number one in Business English Proficiency, according to a study by the Global English Corporation.

Table 13. TOEFL Scores in Asia

GEOGRAPHIC REGION AND NATIVE COUNTRY	READING	LISTENING	SPEAKING	WRITING	TOTAL
ASIA					
Afghanistan	15	17	21	19	73
Azerbaijan	18	18	20	20	76
Bangladesh	20	20	21	22	83
Bhutan	19	19	22	22	82
Brunei Darussalam	*	*	*	*	*
Cambodia	13	14	18	18	63
China	20	18	18	21	77
Hong Kong	19	20	21	22	81
India	23	23	23	23	92
Indonesia	19	19	20	21	78
Japan	18	17	17	18	70
Kazakhstan	18	19	21	20	78
Korea, Democratic Republic of	19	19	19	20	78
Korea, Republic of	21	20	20	21	81
Kyrgyzstan	18	19	21	20	79
Lao, People's Democratic Republic	15	16	18	18	67
Macao	18	18	18	20	74
Malaysia	22	22	21	24	88
Maldives	*	*	*	*	*
Mongolia	17	18	19	19	73
Myanmar	17	17	19	20	74
Nepal	19	19	21	21	79
Pakistan	21	22	23	23	88
Philippines	21	22	23	22	88
Singapore	24	25	24	26	98
Sri Lanka	20	21	22	21	83
Taiwan (Republic of China)	19	18	19	20	76
Tajikistan	14	15	20	17	66
Thailand	18	19	18	20	75
Timor-Leste	*	*	*	*	*
Turkmenistan	17	19	21	19	76
Uzbekistan	18	19	21	20	77
Vietnam	18	17	18	20	73

Source: Educational Testing Services TOEFL Report, 2010

Table 14. Business English Proficiency

BUSINESS ENGLISH INDEX (2012)	
COUNTRY	SCORE
Philippines	7.11
Norway	6.54
Estonia	6.45
Serbia	6.38
Slovenia	6.19

Source: Yahoo! News

Young Population and Total Population as Potential Target Market. The Philippines has one of the youngest populations in Southeast Asia, with at least 60% of the population are 15–64 years old, as of 2014, and with the 3rd youngest in median age, next to Laos and Cambodia. Having a young working population and fewer dependents, household income devoted for consumer spending and investments can increase.

Strong BPO Industry. The Business Process Outsourcing (BPO) industry experienced sustainable growth in terms of industry size with growth of at least 17% every year and at least 4% contribution to GDP from 2006–2011. Growth in the industry is evident due to the quality of talent the Philippines, while being cost competitive compared to other countries, having ranked 2nd next to India in terms of competitiveness.

Figure 7. Competitiveness of Countries in the BPO Industry
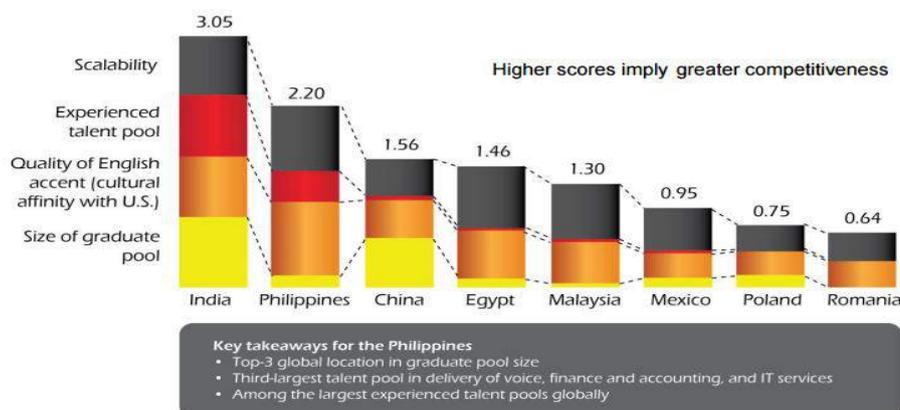
Source: Business Process Association Philippines Roadmap Report

The Philippines now has a total of eight (8) Next Wave Cities location in the latest Tholons' Top 100 Outsourcing Destinations for 2015. Two cities, Manila and Cebu, remained in the top 10. Among the Next Wave Cities included are Davao, Santa Rosa (Laguna), Bacolod, Iloilo, Baguio, and Metro Clark.

Table 15. Top 10 Outsourcing Destinations

COUNTRY	CITY
India	Bangalore
Philippines	Manila
India	Mumbai
India	Delhi
India	Chennai
India	Hyderabad
India	Pune
Philippines	Cebu
Poland	Krakow
China	Shanghai

Source: 2015 Tholons Top 100 Outsourcing Destinations:

Positive Business Climate. The business climate in the Philippines greatly improved for the past five (5) years as stated in the ASEAN Business Outlook Survey of 2015. The 588 American firms that were surveyed showed great satisfaction in 9 out of 16 factors in doing business in the country. Among the factors they were satisfied are the low cost of labor, laws and regulations, personal security, and tax structure.

Weaknesses

Unstable Political Environment. The Philippines is considered one of the politically corrupt countries in the world, ranking 85th out of 175 countries, according to Transparency International's Corruption Perceptions Index. While it has improved from last year's rank of 93, the Philippines' complex and slow judicial system hinders timely resolution of business disputes.

Unpredictable Climate. The country is most exposed to typhoons due to climate change with at least eight (8) storms to make landfall each year, according to Time magazine in 2013. The Philippines also ranks 3rd in the climate change

vulnerability list, next to Vanuatu and Tonga, as stated in the United Nations University's Institute for Environment and Human Security report in 2011. These occurrences, such as several typhoons, have huge economic impact caused by the damage it can bring.

Table 16. Natural Disasters in the Philippines

NUMBER OF NATURAL DISASTERS IN THE PHILIPPINES (2000–2012)									
Year	Drought	Earthquake	Epidemic	Flood	Mass movement dry	Mass movement wet	Storm	Volcano	Total
2000	0	0	1	3	1	1	6	1	13
2001	0	0	0	3	0	0	6	2	11
2002	1	1	0	4	0	0	6	0	12
2003	0	0	1	1	0	1	8	0	11
2004	0	0	1	3	0	1	8	0	13
2005	0	0	0	2	0	0	2	0	4
2006	0	0	0	6	0	3	10	1	20
2007	1	0	0	5	0	0	9	1	16
2008	0	0	0	8	0	0	11	0	19
2009	0	1	0	8	0	0	14	1	24
2010	0	0	1	9	0	0	3	1	14
2011	0	1	3	15	0	0	12	2	33
2012	0	3	1	5	0	1	7	0	17
Total	2	6	8	72	1	7	102	9	207

Source: Natural Disasters at a Glance 2013

High Poverty Incidence. Poverty is widespread in the Philippines with 26.5% of the population living below the poverty line as of 2009 (Central Intelligence Agency World Factbook). This is evident due to the graft and corruption existing in the country that prevented a number of people in seeking out opportunities for personal and economic growth, which can directly and indirectly contribute to macroeconomic growth of the country.

Heavy Traffic

The vehicular traffic in the Philippines, particularly in Metro Manila, is considered as the 9th (out of 88) worst traffic in the world, according to the 2015 Traffic Index released by numbeo.com. Because of this, the country loses around Php2.4 billion a day in potential income, or approximately Php576 billion a year (Francisco, 2014).

Weak Internet Infrastructure

With an average speed of 2.5 bits/s, the Philippines has one of the slowest internet connection in Asia. The internet connection in the country is also considered expensive compared to other neighboring countries, as presented in part 1 of the Philippine Startup Scene.

Opportunities

Skill Specific Educational Initiatives

Many corporations have invested in education through partnerships with technical schools and universities so that students will have the technical skills to prepare them in the future. The government, through TESDA, has also offers programs for those who are have not finished (or did not enter) college. This presents opportunities for more organizations to think further on other initiatives to strengthen the curriculum of schools to match the industry requirements.

Long-term Investment Potentials

With an average of at least 6% GDP every year, the Philippines has experienced strong growth in the last three (3) years. The GDP growth, which increased current Philippine stock index to above 7,500 points, has attracted several investors to take advantage in Philippine talent and resources. While there are current investors in the pipeline, there are still available opportunities that can attract more investors for long-term investment to boost economic growth.

Initiatives for Economic Inclusion Through ASEAN Integration

The ASEAN Integration initiative, where its goal is to create a single market and production base within the Southeast Asian region, will create free movement of goods, services, investment, skilled labor, and flow of capital. This development has presented many opportunities for organizations to strengthen their production base and marketability in order to be competitive in the regional market.

Weak Infrastructure

The Philippines ranks 98th out of 144 countries on the quality of overall infrastructure, according to the Global Competitiveness Report 2012–2013 of the World Economic Forum. With the surging demand for investment, investors are guarded that the Philippines may not catch up to the rising infrastructure needs of various international investors. However, for entrepreneurs, this is seen as an opportunity for them to create their business models that will help improve the weak infrastructures in the country.

Low Credit Card Penetration

According to World Startup Wiki (2014), the Philippines' 7% credit card penetration is quite low, compared to other countries. However, this low penetration can be an opportunity for entrepreneurs to create other modes of payment aside from Cash on Delivery (COD).

Business Programs for OFWs

The Philippine government has created a program to help returning OFWs to start their own businesses. Through the BALinkBayan (Business Advisory Link para sa Bayan), OFWs who want to start a business will be guided on what kind of business

they can set up (Torres, 2013). This can be an opportunity for OFWs to also venture tech startups.

Threats

Market Fluctuations Outside Affect Growth
Like any other country, the growth of the Philippines is affected by market fluctuations in and out of the country. Any further developments such as the rise of interest rates in the United States or the slow of production in China will affect the competitiveness of Philippine business organizations, which then affect overall economic growth of the country.

Instabilities in Political Climate
The election season in the country is very near, and as the election season opens, business organizations must be aware of the threats of the changes in policies and business environment for them to survive and thrive.

Threats under the ASEAN Integration Initiative
With the ASEAN Integration initiative coming to a start, several regional players are preparing their expansion plans to the Philippines and vice versa. There are, however, some organizations that are not prepared for the initiative; hence, regional players will be a threat to their survival.

Brain Drain in the Local Workforce
As business becomes more global and since poverty is very much present in the country, many skilled Filipinos opt to work abroad to find opportunities for higher pay and better quality of life. This leaves a skill gap with the domestic workforce to cope with the demands of work, at the same time innovate in their workplaces without the presence of those who have left the country.

Table 17. Total Number of Overseas Filipino Workers Deployed from 2009–2013

TOTAL NUMBER OF OFWS DEPLOYED (2009–2013)					
	2009	2010	2011	2012	2013
Land-based Workers	1,092,162	1,123,676	1,318,727	1,435,166	1,469,179
Sea-based Workers	330,424	347,150	369,104	366,865	367,166
Total	1,422,586	1,470,826	1,687,831	1,802,031	1,836,345

Source: Philippine Overseas Employment Administration

Philippines' Status in 6 Key Areas

To determine the right balance of short-term and long-term programs under each key area highlighted below, the current status of the Philippines in six (6) key areas will establish the country's unique factors that need to be considered. Since industries could be broad and resources are limited, the country would need to plan strategically.

Intellectual Property

Application for patent on a hardware component takes an average of 2 to 3 years to be registered, with 18 months of publication after its filing (Bulilan, 2012). Currently, a code is usually not copyrighted unless software code has hardware component in it to be patented. As of 2013, there are a total of 3,217 patents registered in the Philippine patent office, 15% of which are owned by Filipinos. Ten percent (10%) of Filipino inventions are patented on behalf of Ideaspace (Valencia, 2015).

Table 18. Intellectual Property Registrations in the Philippines (2013)

	Patent Grants (2013)	Trademarks Registration (2013)	Industrial Design Registration (2013)
Resident	30	6,626	841
Non-Resident	2,177	8,849	505
Abroad	52	901	72

Source: World Intellectual Property Organization

Table 19. Top 5 Patent Grants in the World (2013)

PATENT GRANTS (2013)			
Country	Resident	Non-resident	Total
United States of America	133,593	144,242	277,835
Japan	225,571	51,508	277,079
China	143,535	64,153	207,688
South Korea	95,667	31,663	127,330
European Patent Office	33,600	33,096	66,696

Source: World Intellectual Property Indicators

Table 20. Top 5 Trademark Registrations in the World (2013)

TRADEMARK REGISTRATION (2013)			
Country	Resident	Non-resident	Total
China	909,582	105,542	1,015,124
European Union	211,744	68,879	280,623
United States of America	193,410	82,020	275,430
Turkey	140,274	32,314	172,588
Germany	126,054	14,874	140,928

Source: World Intellectual Property Indicators

Table 21. Top 5 Industrial Design Registrations in the World (2013)

INDUSTRIAL DESIGN REGISTRATION (2013)			
Country	Resident	Non-resident	Total
China	398,670	13,797	412,467
European Union	66,101	27,977	94,078
Germany	43,384	10,657	54,041
South Korea	44,889	4,150	49,039
Turkey	40,368	7,353	47,721

Source: World Intellectual Property Indicators

Science Parks (Culture, Infrastructure and Facilities, and Incubation)

With the increase in demand for BPO services in the country, a number of Science Parks were built. As of 2015, there are a total of 89 operational IT parks all over the country, majority of which are located in Metro Manila. The Science Parks consists of BPO buildings, business center, sports and recreational facilities, and even residential areas. None are targeted for internet-related technology, although there are incubators located in BPO facilities such as that of Ayala TechnoHub which houses 7 startups as of 2013.

Some of the known areas for BPOs in the country are the UP Science & Technology Park, Lakeside EvoZone (Nuvali Technohub) and Eastwood City Cyberpark. Technology startup offices are usually spread around Metro Manila with concentration in Ortigas business district, Makati City, and Quezon City-Katipunan. Furthermore, startups are incubated in facilities in Makati via Kickstart and Ideaspace offices.

There is definitely a need to provide a nucleus for talent in one geographical location because the concentration of the right entrepreneurial mindset and know how will circulate among these firms, resulting to a better exchange of ideas.

Policy (Tax, Immigration, Incorporation, and Other Startup Bills)

Tax

Companies registered under the Securities and Exchange Commission (SEC) and Bureau of Internal Revenue (BIR) are required to pay 30% corporate tax based on their net taxable income. Non-resident companies, on the other hand, are required to pay 30% corporate tax based on their gross income. Foreign companies operating in the country are considered resident companies if they are also registered under SEC and BIR and have either a branch or office in the country (KPMG, 2013).

Presently, Senator Bam Aquino passed Senate Bill 2217 known as the Startup Business Bill which seeks to exempts startup companies from paying taxes for the first two years of their operation. However, not all startup companies are eligible as there are limitations. Under SB 2217, startups with affiliations on existing companies as well as individuals who have registered more than one company are not exempted from paying the required taxes. For it to be eligible, a startup company should also have at least 5% shares without nominal stockholders. Further, if there are five or more individuals that owns the company, a Venture Capital that invested in the company should have no more than 15% of total outstanding shares (Remo, 2014). Senator Aquino mentioned that this bill would provide opportunity for startup companies to organize and establish their operations and market.

Immigration

According to Commonwealth Act No. 613, tourists are considered non-immigrants in the Philippines if they are only temporarily visiting the country for business, pleasure, or health reasons. It is also stated in Section 9 (d) of the Act that a foreign national who is coming to the Philippines for the purpose of developing and directing the operations of an enterprise in which he/she invests or will invest a substantial amount of capital, shall be identified as an alien businessman and can also stay up to a maximum of 30 days. Non-visa tourists or businessmen who wish to stay beyond 30 days may apply for a visa waiver. A visa waiver extends a tourist for up to a maximum of 29 days. However, if tourists or businessmen wish to extend beyond the 59 days given by the Bureau of Immigration, they should secure extension permit from the Bureau of Immigration.

Incorporation

Under the Philippine Foreign Investments Act Negative List, foreign investors are not allowed to own more than 40% share of any firm in the country. Additionally,

companies that are founded by foreign nationals are limited only to 40% ownership of the firm.

However, while there are the above laws on incorporation, there are no existing laws yet for crowdfunding in the Philippines. There are some countries that have laws about crowdfunding. The United States, for example, has implemented the Jumpstart Our Business Startups Act (JOBS ACT) as soon as President Obama signed it into law. The law contains provisions on crowdfunding, as well as the limits on the amount an investor may invest in through this scheme. Other countries that have laws about crowdfunding are Australia, Israel, Japan, Singapore, and Malaysia (Lim, 2014).

Research and Development (Grants, Education, Institutions, Collaboration, and Experience)

There is a strong need to provide opportunities for further training and development to students and even leaders. Tables 22, 23 and 24 shows the number of students both from public and private schools and the number of Engineering Licensure Exam Passers respectively, that may be tapped for this purpose.

Table 22. Total Number of Students in Public Schools

Public Schools (SY 2012–2013)			
Elementary		High School	
Total number of schools	38,662	Total number of schools	7,754
Total number of students (Grades 1–6)	12,737,460	Total number of students (Years 1–4)	5,098,627
Non-graded SPED	98,081	Non-graded SPED	65,030

Source: Department of Education

Table 23. Total Number of Students in Private Schools

Private Schools (SY 2012–2013)			
Elementary		High School	
Total number of schools	10,148	Total number of schools	5,256
Total number of students (Grades 1–6)	1,167,313	Total number of students (Years 1–4)	1,328,372
Non-graded SPED	14,797	Non-graded SPED	16,092

Source: Department of Education

Table 24. Total Number of Passers in Engineering Board Exams 2013

ENGINEERING LICENSURE EXAM PASSERS 2013	
Courses:	Total number of passers
Aeronautical Engineering	113
Agricultural Engineering	237
Chemical Engineering	633
Chief Marine Engineering	833
Civil Engineering	4,776
Electronics Engineering	2,884
Geodetic Engineering	144
Mechanical Engineering	2,953
Metallurgical Engineering	25
Mining Engineering	117
Registered Electrical Engineering	2,370
Sanitary Engineering	86

Source: Professional Regulation Commission

Multinationals (Training and Exchange of Knowledge to Harness and Keep Talent)

When a foreign talent and opportunities are brought within the country, jobs and learning opportunities are created too. A good example is the "Smart City" campaign of Singapore which was explained in Part 2 Section 1 of this Roadmap. Its vision for innovation and programs has attracted talent from all over the world into Singapore, instead of their local talents leaving the country for opportunities or regressing to an available role. Opportunities for high skilled talent within the country must, therefore, be created. This can be possible by introducing or strengthening internet–related entrepreneurship.

Funding (Venture capitalists, Angel Groups, Local and International Investors, Industry–specific Investors, Government and Private Investors)

This area is important for startups as it creates a signaling impact to international investors for more funding. More funding provides the opportunity for startups to grow and remain competitive. It is, therefore, essential to harness the growth and to encourage Angel Groups, and Venture Capital to fund local startups. The government should provide a more aggressive role in providing and improving confidence among investors.

"We can easily entice the best talent from around the world with the quality of life, beautiful beaches and potential market. And because Filipinos are knowledgeable in the English language, it's easy to communicate"

"Innovation can improve the lives of those who need it most. Let's inspire and challenge those who dare solve inherent problems." – Earl Valencia

"People want a stable and bright future. If we create stronger opportunities for talent to thrive, they will want to stay." – Beryl Li

Part 3
Action Plan

After careful study and consultation with academic, private, and public sectors, the Philippine stakeholders have collaboratively come up with action items not to replicate the Silicon Valley experience but to come up with strategies that can spark the key drivers of organic growth in digital innovation in the Philippines – a unique ecosystem that produces the worlds most innovative solutions to issues in social inequity (affordable healthcare and quality education), gaps of financial inclusion (access to basic financial products like loans and lower remittance fees), realities of a fragmented geography (enabling commerce in harder to reach regions), damage from theft or climate change (effective security, communication tools during natural calamities), and other issues (brain drain, etc.).

This part (Action Plan) provides a list of strategies that focuses on necessary areas of the ecosystem for it to flourish.

The key for a healthy ecosystem in the long–term is **balance** in areas like grassroots events, infrastructure such as science parks and quality internet, legislation, IP protection, funding in all stages of startup's lifetime, education, training and exposure, and support networks from both private and public sectors. In addition, the ecosystem should provide support in all stages in a startups life for entrepreneurs with different backgrounds.

Why is there a need for a *balance* in the ecosystem?
If the focus is only on grassroots events and startup activities, for example, resources are wasted on events with repetitive content, and there is failure to distribute resources to various startups, instead the needed infrastructure or funding are given to potential multimillion dollar startups. Imbalance can also drive away founders to countries with better IP protection, investor–friendly legislation, and better tax schemes. If there is also failure to educate and collaborate with influential individuals/authority/multinationals/organizations, it will not only increase operational expenses for startups, but it can also limit the potential growth of the whole ecosystem.

Why is there a need to strategize?
Implementing a strategy can provide a systematic approach for the whole community to work together on different aspects of the ecosystem to achieve balance. Strategies are designed to reach the community's ambitious metrics and constant growth with the hope to produce multimillion–dollar startups and a few unicorns in the coming years. Each member of the community can focus on his interest and expertise while confidently knowing that another is focused on other

important areas of the ecosystem. When each area of the ecosystem is being built together, the whole ecosystem moves forward.

How can execution of the strategies be ensured?

The plan starts with formalizing an umbrella organization composed of individuals who are the leaders and experts in their respective areas of the ecosystem (currently, the roundtable participants). The organization will conduct constant checks and balances of the entire ecosystem and measure performance against the metrics provided in 2020 and ensure long term growth. It will frequently meet to address imbalances, provide detailed action items and new strategies to meet metrics, update everyone on advancements on the area of interest/expertise and discuss appropriate measures for implementation if adjustments need to be made. This is important to make sure that everyone is in line with the same goal, and guided through the strategies into one direction – building a multibillion-dollar ecosystem in the Philippines.

Who regulates the umbrella organization?

The umbrella organization will be structured in a way that it is self-regulatory. Each member is a representative of the startup ecosystem and brings in expertise in their respective area. There are sets of policies and guidelines (constitutions) within the organization, as it is democratic in nature. More details on the organization can be found below.

The action items cover a list of topics under the areas discussed in Part 2 (science parks, legislation, IP, funding, multinationals, and research and development):

1. Intellectual Property Rights
2. Internet Infrastructure
3. Science Parks and Innovation Hubs
4. Legislation/Policy
5. Grassroots Activities
6. Funding and Investment
7. Umbrella Organization
8. Research and Development
9. Education
10. Open-sourced Information
11. Collaboration
12. Government Role

Disclaimer: The Action Items below are listed as a general overview and direction of our current ecosystem. Each item has ongoing discussions with roundtable participants/authority. Some details may have been omitted on this version of the roadmap including budget and timeline.

1. Intellectual Property Rights

While it is imperative for the Philippines to provide protection for local scientists, it is also necessary to encourage fair competition. Rigid IP protection has a way of limiting competition and slowing innovation. Hence, a good balance is indeed necessary. The 2015 status on IP in the Philippines may be seen in Part 1.

Patents

- There is a need for Patents that cover code instead of the current copyright process for code. IP should develop or include software patents even without the hardware component.
- The goal is to cut or streamline the processing time from application date to awarding of patent.
- Seek legal guidance for structuring patent law, to include the reevaluation of the consequences for any breach on the law.
- The IP office should include or involve in the planning sessions the members of the umbrella organization, representatives of the tech startup community; and the office should collaborate with introductions/innovations provided by the umbrella organization

2. Internet infrastructure

Several activities may be held including inviting potential *technopreneurs* to operate in the Philippines, however, if the basic infrastructure to innovate in the digital space is sometime absent or not progressive at all, digital innovation will not thrive. This fact should be addressed as soon as possible since it is deemed to be a hindrance to growth or progress.

The government's lack of control may be seen at fault because it is seen as its responsibility to co-invest with the private sector. For example, the issue surrounding the internet has been highly sensitive since there are only a few internet providers (monopolistic competition) operating. The public has repetitively questioned the efficiency of these providers but it should be noted too that in a developing country like the Philippines where a big percentage of Filipinos are still living in poverty, basic needs such as food, access to clean water, education and healthcare are the government priorities for the distribution of our taxes. Infrastructure, however, is also a priority as it is also a source for taxes, but it will only be considered as such if the demand for infrastructure can leads to economic development.

The current state of the country is not an attractive site for internet investment. The following data seems discouraging: fiber optics are more expensive because of the geographical feature of the country, GDP per capita less than US $3,000, lopsided income with only 1% of families in the A bracket, 70% of Filipinos with no savings accounts, average household income not sufficient to pay for expensive fiber optics in x amount of years, as a majorly private run industry. Any investor will agree

that there is hardly any solid evidence of return for internet investment for both the private sector and for tax payer's tax returns.

Following the above scenario, the following are therefore the **proposed solutions:**
- Review the antitrust bill. The bill should allow other aggressive internet providers who can provide affordable and quality internet service, if existing providers cannot possibly improve their service. This will then force competition, drive prices lower, and extend better services.
- Formulate strategies to increase income generation in the rural areas so that they can also afford internet services, aside from meeting their basic needs.
- Prioritize denser geographical areas with above average income households/businesses in the provision of quality internet service (ongoing).
- Establish Science parks/innovation hubs that will guarantee reliable internet service for entrepreneurs (short term solution).

3. Science Parks and Innovation Hubs
Some of the benefits of operating in a science park include easy access to information, strong support networks, visibility, and affordable and accessible internet infrastructure and incubation facilities, such as mentorship, funding, and training.

With the archipelagic feature of the country, these innovation hubs/ science parks should be located initially in a centralized, denser and accessible areas. Later on, when these parks and hubs are settled, they can be relocated in various areas.

"Beehive"
- Tap PPP projects to develop innovation hubs (ongoing).
- Choose dense areas for development like Ortigas, Makati, Quezon City, Intramuros, Cebu, Davao, Cagayan de Oro (Ongoing).
- Ensure Partners provide good infrastructure and other facilities allowing teams to work uninterruptedly.
- Facilitate engineer training/ training classes, such as UI design, in innovation hubs (Ongoing).

  - **Development for Entrepreneurship Acceleration (IDEA)** –– With CHED assistance, this program will institutionalize entrepreneurship teaching in most undergraduate and graduate engineering schools. On its second year, PhilDev provides entrepreneurship workshops on Startup Success Factors with lecturers from Silicon Valley, selected Philippine and U.S. Universities, who are partnering on Innovation and Entrepreneurship Programs, and training Philippine professors on entrepreneurship pedagogy (PhilDev and USAID).
- Encourage design thinking.

4. Legislation/Policy-making

A re-evaluation of Philippine legislation is necessary to remain competitive in the global market. There is a need to streamline processes by cutting down time when incorporating/registering or closing/dissolving a company. It would also be beneficial for startups to enjoy tax incentives that is reasonable for a startup which are still operating at a loss; or more importantly, provide incentives at par with other competitive markets like Singapore and Hong Kong. It is also important to be updated with disruptive new trends, which require government regulation. Policymakers should aim for the industry to be competitively progressive. Significantly, the government should encourage fair treatment between founders and its employees by allowing a good flow of knowledge.

Further, there is a need to find the middle ground to lessen the burden for entrepreneurs to start and run a company, while protecting them from unforeseen circumstances.

Drafts on the pipeline:
- Immigration
- Tax incentives/holidays
- Incorporation
- 60/40 constitution
- Closing down company
- Startup-related policy
   (Cryptocurrency, E-commerce, E-money, crowdfunding)
- Exit and employment incentives

5. Grassroots Activities

Currently, there are a number of grassroots activities undertaken. For the Roadmap, the focus is on the few quality events that will efficiently manage monetary resources. By selecting one of each kind of activity, funds and other resources can be distributed in other areas in the ecosystem that are equally important. This will encourage the players to focus on the quality of one value-generating event.

Two most important notes to be considered are providing support networks and activities at any point during the life cycle of a startup and providing opportunities to entrepreneurs of all backgrounds, such as students, professionals, recent graduates, or first-time entrepreneurs.

Geeks on a Beach

Since 2013, *Geeks on a Beach* (GOAB) has been a window for international players to learn more about the Philippine Digital Startup Scene. It is an event that highlights the achievements of local players and provides opportunities for them to interact with potential investors, potential partners, and experienced entrepreneurs. GOAB will be running its third event in August 2015. Specific requests in future events are the following:

- Sponsorships on flights and accommodation for speakers and other participants
- University/school subsidy for technopreneurs and participating students
- Renowned international resource speakers (e.g. Elon Musk, Sherly Sandberg, Marc Andreessen)
- Engineer panel for engineers/designers – Startup vs. Corporate

Competitions

- In-campus High School competitions on creation and presentation of prototypes and business plans
- Philippine Startup Challenge for college students (PSIA/DOST-ICT Office Program) (ongoing)
- On 3 Competition where winners can raise funding in Silicon Valley (ongoing)
- Support organizations promoting competitions in search for deal flow (e.g. Kickstart, Ideaspace, Wavemaker Labs)
- Recommend private competitions/programs to expose teams (e.g. Maybank, e27, Global Impact Competition with Singularity University, Magic, Angel Hack, Barclays Fin Tech, Startup Chile)
- Engineering Code Jam National Competition (web and mobile)
- Startup weekends for 2nd-tier cities

Campaign/Promotions

There is a need for effective marketing tools to entice foreign talents to operate in the Philippines, to employ local talent, train talent and incentivize them properly, to expose the activities and opportunities present in the Philippines, and eventually or consequently to call for Filipino professionals working abroad to explore opportunities back home.

Events and media activities to include:

- Showcase success stories and highlight learnings from past successes
- Recognize Filipino talent
- Highlight the business opportunities and strengths of the country
- Work closely with media to relate developments to stakeholders

Startup Weekend and Follow Through Sessions

There is a need to expand startup weekends to 2nd-tier cities to disseminate information about technopreneurship. By gaining momentum in different parts of the Philippines, it is possible to levy for further development or support for infrastructure.

We need to cultivate a culture of risk taking:
- Provide extra curriculum on top of startup weekends such as speakers (past success stories), short lectures on team building and recognizing business value proposition
- Encourage more leaders/investors of various backgrounds to take roles in organizing, mentoring, and taking active positions in follow through sessions
- Successful teams should be encouraged to join other national competitions and continue building their prototype
- Encourage engineers to join (those in school and those in corporations)

Engineering Conference/Bootcamp
- Invite engineers to attend bootcamp
- Cultivate entrepreneurship and the right attitude among engineers
- Speaker series among engineers in startups and in corporations
- Instill the importance of "no bugs on staging" before release

6. Funding and investments

Venture capitalists, angel groups, local and international investors, industry specific investors, government and private funds are important in balancing the ecosystem. Investors do not just provide mere funding, but quality investors provide essential networks, operational advice and industry specific expertise that can lead to growth for a startup (Appendix has an inventory of investors as of 2014).

Local validation is important to entice quality international investors. The latter is helpful when one wants to operate in the international markets leading to wider adoption in those markets.

As of the Philippines, we cannot discount the presence of traditional businesses, which is still majorly run by families. They can provide as much value to startups in their industry and they can provide insights from their years of experience operating in the industry. Building angel groups is essential at developing responsible investors. This is as important as government funds/government supported investments. Given the frequent changes in policies for every new government in place, political instability affecting some industries, a government-supported fund reflects assurance for its portfolio companies. This signals more international investors to invest in Filipino companies.

Although a sovereign fund for digital startups is controversial given the priorities of our government and lack of expertise in investing in technology within government, we wont discount this idea on the roadmap to **open healthy discussions**. We will include potential ideas for private sector to work with government.

Educate investors
- Digital startups as an investment option (validation and equity stake)
- How to diversify investment portfolio

- Angel groups should solicit educational materials
- Groups should tap into professionals/traditional businesses
- Exposing locally invested startups to international investors
- Positioning strength of Philippine market for digital innovation

Sovereign fund (discussion)
- Accredit local investment groups/VCs as investment partners
- Piggy-back on private sector expertise
- Match investments done by partners
- Consult Singapore and Malaysia on sovereign investments and conduct own due diligence

7. Umbrella Organization
Information on the roadmap is evaluated with further research and due diligence. Most of the ecosystem insights are taken from the most respected experts in the field– the roundtable members. The members of the roundtable meet regularly to give feedback and insights from their years of experience. Members are composed of startup founders, investors, policy makers, government agencies, analysts, academe and movers of grassroots events.

Formalizing the roundtable would provide a body that conducts regular checks and balances in the ecosystem. Aside from being in line with the agenda, the members are good sources of advice and a body to push initiatives. Overall, their contribution in their area of expertise should balance out to push for a thriving ecosystem.

- Schedule meetings to discuss issues and new trends
- Measure performance and evaluate ecosystem by end of 2018
- Recommend projects and other support networks
- Sign an MOU between roundtable members

8. Research and Development

Conferences
To remain competitive, the country's leaders and decision makers should constantly be updated with new trends and policies in innovation. They need to learn independent thinking to position our country's own abilities forefront in innovation.

We need conferences that engage our potential leaders, private and public figures with Entrepreneurs, academe and government around the world. In addition, Campus visits ands workshops inspire creative thinking.

The core mission is to push innovation in the Philippines. Leaders need to fully understand the country's strengths and shortcomings. With this in mind, traveling to meet local offices and understanding neighboring innovation will be valuable.

Some recommended educational conferences and topics:
- Stanford University and Silicon valley (conversations)
- Innovation tour in Asia (Example: Huawei campus, Hong Kong science park) (ongoing)
- Design thinking
- Investment workshops for VCs and Angel Investors
- Visits to other startup ecosystems (Example: Israel, Silicon Fen, Chile)
- Latest technology trends in different countries (ongoing)
- Policy in innovation

Technical Industry Studies
- Aim to find solutions to low quality and low level of R&D Activity in the Philippines and shortage of engineering talent.
- Conduct technical R&D studies and recommendations on Philippine industries (Example: Mobile wallets in Developing countries, cryptocurrency in the Philippines, Digital innovation in agriculture, Digital Equipments for Global Warming)
- The studies made should be used by existing innovators in the field
- Funding for proposed projects (ongoing)
- R&D specifically on new trends on coding language (i.e. PHP, Python, Ruby)

Partnerships with Institutions for R&D
- Philippines California Advanced Research Institutes (PCARI): Two research institutes – one for Infrastructure for ICT, and the other is Infrastructure for Health Science and Translational Medicine (HSTM). Funding has been approved by the Senate and Congress for US$41M per year for five years. Partner universities from California are University of California at Berkeley (UCB) for ICT, and University of California at San Francisco (UCSF) for HSTM. This development is unprecedented in Philippine history.

9. Education
Education should be an amalgamation of practical learning, observation, analysis, theory, application, and constant practice. The first suggested step is bringing in teachers both with extensive experience and diversified skills and knowledge. Students should take roles of observing and learning first hand from the right teachers. Students should have the chance to take independent thought and apply lessons in his environment with proper mentorship until independent.

Our role is making sure we inspire that environment of learning and control controllable factors. We need to harness the right values among teachers. While teachers, should cultivate the right culture among their students.

Teachers don't have to be in the classroom. As an example, an internship in the industry is a good way to get first hand experience. Supervisors should inscribe good habits among employees. They stipulate a particular expectation which quality is defined by the company culture.

Our aim is to help find solutions to inadequacies in the Higher Educational Level, particularly shortage in engineering talent.

Schools in all levels
- Establish incubators inside Universities/High schools (conversations)
- Push for internships and practical experience (Ongoing)
- Push for more exposure trips (optional but ongoing)
- Establish entrepreneurship classes in schools as electives
- Recommend content created by industry expert (conversations)
    - DepEd Computerization Program (CLOUDTOP): Utilizing engineers in the Philippines and Silicon Valley, PhilDev proposed, architected the design, and managed the R&D for a computing and communication infrastructure for all elementary and high schools in the country. The design is functional and has been tested in elementary schools for at least six months. The complete system includes solar power for schools without grid power and all schools will be connected with long distance Wifi (PhilDev).

Internships
- Government subsidizes student participation at the national level
- A list of pre-vetted startups/companies open to internships
- Collaboration with responsible government agency (CHED/DepEd) to push for internships

Startup Philippines
Inspired by the Startup Chile and Energy Exelerator of Hawaii programs, Startup Philippines aims to bring in the world's most talented technopreneurs to operate in the Philippines encouraging them to employ and intern Locals. We aim to escalate the flow of knowledge, and develop our industries like healthcare, finance and global warming, etc.

- Sponsorships (Discussions)
- Set up an organization to ensure safety, collaboration, marketing and a great experience for all participants (Ongoing)
- Set up criteria, policy and system that ensures learning (ongoing)
- Partner with innovation hubs/VCs/ Accelerators and open to all

Engineering (Front end, back end, and UI Designer)
- An inventory of engineers on their skills, experience, portfolio

- Encourage students to join bootcamps or code jam competitions at a national level, or even international level
- Re-evaluate curriculum in engineering in partnership with CHED/DepEd
- Educate engineers on new trends on coding language
- Encourage engineers to read R&D reports on tech conducted on various industries to learn new trends
- Encourage internships and projects in course/degrees
- Partner with Innovation Hubs that provide training for engineering talent (ongoing)
- Add entrepreneurship classes in engineering degrees
- Scholarships to encourage more engineers to join (Ongoing)
  - Engineering Research and Development for Technology (ERDT): This program, which has been going on for the last seven years, provides scholarships for engineers pursuing Masters and PhD programs. Funding amount is approximately US$25M per year (PhilDev)
  - Engineering Scholarships: Working with Shell Philippines funding, PhilDev runs a scholarship program for top undergraduate students in the top engineering universities. Currently, there are 80 scholars in studying engineering (PhilDev)
- Sponsorships for engineers to buy coding gadgets (i.e. laptop, keyboards, etc.)

10. Open-sourced Information

Help Desk
- Regulatory information
- Assistance on advice, information, and contacts for entrepreneurs

Website (Ongoing)
- Contain all available programs, scholarships, and grants
- Information on incorporating, setting up, taxes, etc.
- Inventory on startups, investors, events, competitions, news and updates, and available funding
- Inventory of engineering talent, their skill sets, and experience
- R&D reports on tech on various industries to learn new trends
- Collaboration with help desk

11. Collaboration
There's a gap in understanding between agencies and even individuals in the ecosystem. In order for us to be in line, all participants need to understand each other's concerns. We need to educate each other and work together towards one agenda. We will try to fill in the gap by adding communication channels. The priority is to create a collaborative environment to push for the national agenda to build digital innovation in the Philippines for inclusive growth.

Government Agencies/ Departments
- Conduct roundtable Discussions
- Educate Public Sector on new trends in tech
- Find solutions to issues and concerns (Example: Policy, disruptions)

Traditional Businesses/Corporations
- Educate Family Run businesses/conglomerates about tech
- Encourage collaboration between businesses and technopreneurs

Foreign public and private institutions
- Learn about other organizations and find synergies (Ongoing)
- Collaborate on potential co-investment opportunities and programs (Ongoing)
- Learn about other ASEAN markets for potential expansion
- Conduct an exchange of learning (Example: Trends, policy changes, debates, introductions with responsible agency)

12.   Government's role
- Recommended Articles: Tech in Asia, e27, Tech Crunch, Business Insider
- Understand how technology is disrupting the industry. Keep up with new trends
- Attend Startup activities and participate in conferences
- Study the roadmap thoroughly (all Parts)
- Conduct own due diligence and plan agency's role
- Open conversations with private sector and collaborate with different government agencies/departments
- Plan the department's budget/role and allocate resources (with emphasis on the areas of the ecosystem that need to be balance out)

Conclusion

The Philippine Roadmap for Digital Startups: 2015 and Beyond provides a framework for the government and the private sector to take a coordinated and systematic approach towards developing internet-related innovation against ambitious targets as a means for inclusive growth. The focus is to produce innovative businesses that find solutions to our country's most inherent challenges. The roadmap is a collective effort for the community by the community, which includes the government, tech startup participants, and the academe, to come up with appropriate programs for the Philippines, focusing on the country's unique factors/features. The purpose is to provide support on all stages of development for tech startups and entrepreneurs of different backgrounds to flourish.

The roadmap contains studies of other tech startup ecosystems, which includes South America, China, Silicon Valley, Singapore and Israel. These ecosystems have attracted talent that fostered local innovation because they have the right mechanism in place for them to grow and reach their highest potential. Their environment (Intellectual Property, facilities such as Science Parks, Research and Development, Multinationals that have served as an exchange platform of know-how, and Funding) allowed individuals to create and work collaboratively and strategically.

The Philippines, by all means, should strive to develop itself not by aiming to be a replica of Silicon Valley, but by aligning its unique resources and core strengths with strategic planning. The country has an attractive demographic (a growing young population, growing middle class, etc.), rich in natural resources, a pleasant culture (e.g. polite, English speaking). These are areas that should be highlighted on top of appropriate measures to development. The technology startup participants today alongside the government should aim to implement the best practices in promoting Internet-technology innovation through a step-by-step process and analysis on the roadmap.

Appendices

Appendix 1: Inventory List for the Philippine Startup Scene

1.1: List of Startups that have Exited

Startup	Year founded	Year exited	Exit	Market Valuation at time of exit (in US Dollars)	Founder/s
Chikka	1999	2009	PLDT	$15 million cash & stock	Dennis Mendiola
Level Up	2002	2006	PLDT	–	Ben Colayco, Syam de Vneni, Phil Cahiwat
Airborne Access	2002	2008	PLDT	–	Jay Fajardo
Wolfpac Mobile Inc.	1999	2003	PLDT	–	Myla Villanueva
Egg	2001	2008	Globe Telecom	$8 million	Mellissa Limcaoco
Information Gateway	2000	2008	–	–	Nono Coliangco, Eliza Coliangco
Sulit	–	2013	OLX	–	RJ David, Arianne David
Xurpas	2001	2014	IPO	$32 million	Raymond Gerard Racaza, Fernando Jude Garcia & Nico Jose Nolledo
iRemit	2001	2007	IPO	$35.5 million	–
Netbooster	1998	2012	Group M	$31.5 million	Frederic Levy, Sebastian Caudron
Morphlabs	2007	–	IPO	$40 million	Winston Damarillo

1.2: List of Active Investors

Investors	Investments	Investors	Investments	Investors	Investments
Ideaspace Foundation	22	Learn Capital	1	Omidyar Network	2
Kickstart Ventures	19	WaveMaker Labs	6	iNovia Capital	1
UP Enterprise Center	12	Accel Partners	1	Y Combinator	1
Ayala TBI Network	7	Blumberg Capital	1	Lumia Capital	1
Cebu InIT	24	Narra Venture Capitals	4	IMJ Investment Partners	3
500 Startups	3	Golden Gate Ventures	2	Hatchd Digital	7
ICCP Venture Partners	2	Benjamin Joffe	2	Chris Evdemon	1

1.3: List of Community Supporters and Events

EVENT/COMMUNITY SUPPORTERS	COMMUNITY ROLE	EVENT/COMMUNITY SUPPORTERS	COMMUNITY ROLE
Startup weekend (Manila, Cebu, Davap, other provinces)	Hackathon	Echelon Philippines (e27)	Local Media/ Pitch competition
AngelHack	Hackathon	Tech In Asia Philippines	Local Media
WebGeek Conference	Conference	The Bobbery	Local Media
PyCon Philippines	Conference	Startups.ph	Local Media
DevCon	Conference	Science.ph	Local Media
RubyConf Philippines	Conference	ON3 Pitching Competition	Pitch Competition
SoftCon	Conference	Philippine Startup Challenge	Business Plan Competition
Geeks on a Beach	Conference	OpenTBI	Startup Education Program
TechTalks.ph (Manila, Cebu, Cagayan, Bohol, Davao)	Meetup	Startup PH	Group
Smart Dev Net	Group	Game Developers Association of the Philippines	Group
Digital Commerce	E-commerce Group		

1.4: Opportunity Map

DEALS	COMMUNICATION	SEARCH	LISTING
MetroDeal	Facebook	Google	AyosDito
CashCashPinoy	Viber	Yahoo	OLX Philippines
Ensogo Philippines	Whatsapp		
Beeconomic	WeChat		
(Groupon)	Twitter		

BLOGGING	JOBS	SOCIAL NEWS	COMMUNITY
Blogspot	Sulit	Rappler	Pinoy Exchange
Wordpress	Jobstreet	Reddit	iStorya.net
Tumblr	Odesk	iStorya	Pinoyako.info
Blogger	Workabroadph	Mashable	Female Network
Live Journal	JobsDB	Pinoyakoinfo	Tristan Café

Spot.ph	MUSIC	GAMING	ONLINE RETAIL
Click the City	Videokeman	Y8	eBay Philippines
Looloo	Mp3 Skull	R2 Games	Zalora
When in Manila	iMesh	Game 321	Lazada
Trip Advisor LOCAL	Soundcloud	IGN	CashCashPinoy
DISCOVERY	Twitmusic	Garena.ph	

DATING	SOCIAL DISCOVERY	PAYMENT	REAL ESTATE
Skout	Pinterest	Paypal	OLX
DateInAsia	Instagram	Asiapay	AyosDito
Filipino Cupid	Facebook	Dragonpay	Zipmatch
Tinder		Smart Money	
Pikawoo		GCash	

TICKETING	EVENTS	FINTECH	NETWORKING
Ticketnet	EventBrite	Lenddo	LinkedIn
Ticketworld	Meetup.com	Coins.ph	Meetup.com
SM Tickets		VMoney	Webgeek.ph
Sureseats			

RENTAL	DINING	TRAVEL	AUTO
OLX	MunchPunch	Trip Advisor	OLX
AyosDito	Looloo	Agoda	AyosDito
	Zomato	Hotel Quickly	Pinoy Autotrader
	FoodPanda	Airbnb	

TRANSPORTATION	EDUCATION	MICROWORK	SUBSCRIPTION RETAIL
GrabTaxi	Coursera.org	Sparkproject	BDJbox
Tripid.ph	Udemy.org	Artisteconnect	
Uber	Code.org	Muni.ph	
	Stanford Online		

Saturated   Mature   Semi–mature   Infancy   Non–existent

Source: Updated version of World Startup Report

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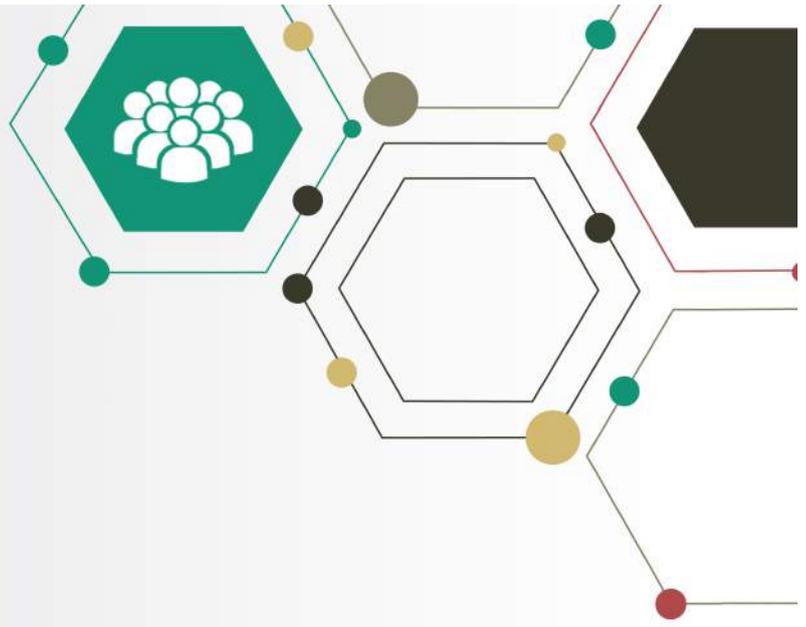
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