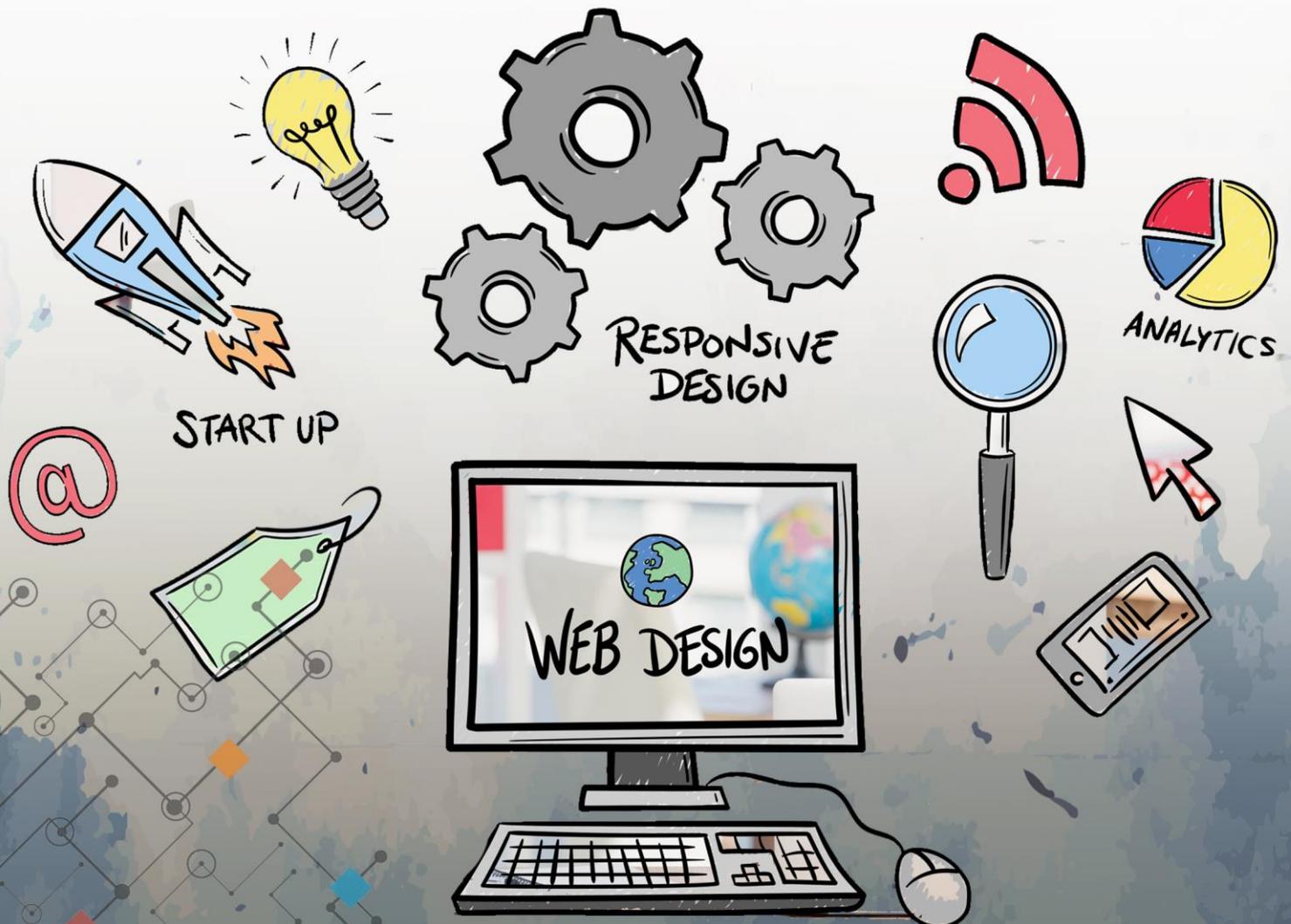

DIMMING OR BRIGHTENING:

CURRENT VIEWS ON THE EFFECTS OF AUTOMATION AND THE U.S. ANTI-OUTSOURCING BILL TO THE PHILIPPINE IT-BPM INDUSTRY

LABOR MARKET INTELLIGENCE REPORT



Technical Education and Skills Development Authority

June 2017

This paper will discuss the current views on the possible effects of the United States (US) Anti-Outsourcing Bill as well as artificial intelligence (AI)/automation to the Philippine IT-BPO industry, known as the country's Sunshine Industry. A discussion on the global and local industry situation is provided so to give a proper grounding on the topic. It also discusses TVET statistics in IT-BPM as well as the way forward.

I. Background

A. Global IT-BPO Industry

Projected to reach US\$ 249.4 billion by 2022¹, the global IT-BPM has remarkably grown since its inception. The US represents the largest market worldwide. Asia Pacific, the key hub for IT-BPM services, ranks as the fastest growing market, and India and the Philippines remain as one of the two most attractive destinations for IT-BPM services. India leads in IT outsourcing services and non-voice BPM outsourcing business while the Philippines leads in voice BPM outsourcing or contact centers. Other Asia Pacific countries like China, Malaysia, Thailand, and Indonesia are expanding their IT-BPM services. Aside from the known players, African and Latin America countries are entering the industry². Below is the profile of the countries considered as the industry's key players:

Table 1: Country Profiles

India			Philippines		
Primary Area	Contact Center	<input checked="" type="checkbox"/>	Primary Area	Contact Center	<input checked="" type="checkbox"/>
	IT Sourcing	<input checked="" type="checkbox"/>		IT Sourcing	<input checked="" type="checkbox"/>
	Non-Voice BPM	<input checked="" type="checkbox"/>		Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • A global leader in the IT-BPM sector in both ITO and BPM segments. • Comes in second for the global voice BPM market. • A connected, digital-ready economy. • Has the highest volume of diverse, employable talent. • Churned out nearly 5.8 million graduates and postgraduates in FY2015, out of which 1.5 million are industry-suitable, ready-to-hire talent. • Has a mature ecosystem. 			<ul style="list-style-type: none"> • The number one service provider in the global voice BPM market. Followed by India. • Traditionally serving the contact center market, particularly the US. However, the country is beginning to focus on growing IT and non-voice BPM services as part of its national strategy to be positioned as an IT-BPM hub rather than just a contact center destination. • Has a large pool of English-speaking IT and accounting graduates. • Filipinos are in demand due to their high service standards and affinity to the Western culture. 		
China			Mexico		

¹ http://www.strategyr.com/MarketResearch/Business_Process_Outsourcing_BPO_Market_Trends.asp

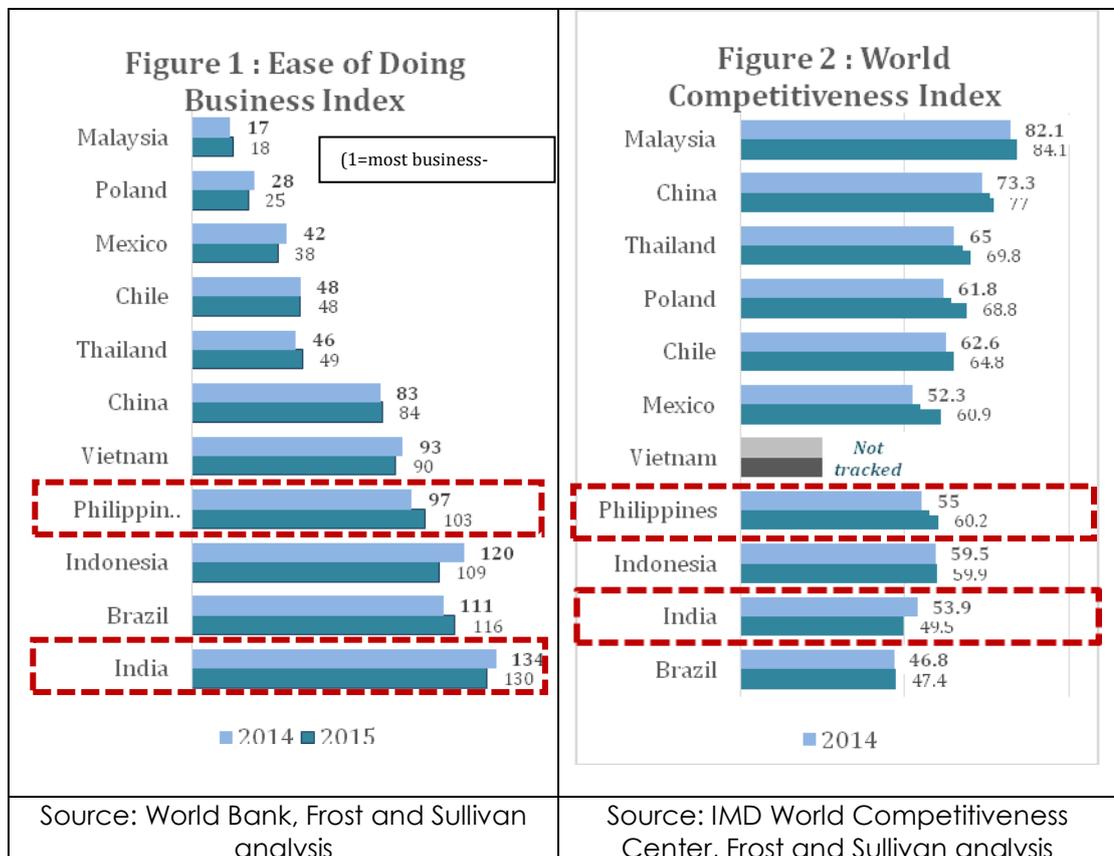
²Accelerate PH Roadmap 2022

Primary Area	Contact Center		Primary Area	Contact Center	<input checked="" type="checkbox"/>
	IT Sourcing	<input checked="" type="checkbox"/>		IT Sourcing	<input checked="" type="checkbox"/>
	Non-Voice BPM	<input checked="" type="checkbox"/>		Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Dalian and Hangzhou are emerging as major IT-BPM destinations for China. Export-driven, but also serves the growing local market. Global companies have concerns regarding the country's IP security and bureaucracy. Dalian is a major regional hub for IT services: <ul style="list-style-type: none"> Hi-tech zone, software park, and University of Technology Major international outsourcers with established delivery centers, e.g., Accenture, IBM, HP, Infosys, Dell, and Genpact. 			<ul style="list-style-type: none"> Offers Spanish language support US businesses, especially for retail and banking verticals. Its main IT-BPM businesses are voice and non-voice BPM services, with some in infrastructure management (lacking in KPO services). Equipped with a robust ICT infrastructure Seen as a complementary destination to other offshore centers rather than as a standalone option. 		
Chile			Brazil		
Primary Area	Contact Center	<input checked="" type="checkbox"/>	Primary Area	Contact Center	
	IT Sourcing			IT Sourcing	<input checked="" type="checkbox"/>
	Non-Voice BPM	<input checked="" type="checkbox"/>		Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Provides Spanish-language support to the US, Spain, and LATAM countries. Politically and economically stable, relative to other LATAM countries. Has established high-value BPO and KPO services. 			<ul style="list-style-type: none"> Curitiba is the Silicon Valley of South America, ensuring a strong IT talent pool. Most IT-BPM services are consumed domestically and from clients in adjacent countries. Tax and bureaucracy issues dissuade international outsourcing businesses. 		
Poland			Indonesia		
Primary Area	Contact Center	<input checked="" type="checkbox"/>	Primary Area	Contact Center	
	IT Sourcing	<input checked="" type="checkbox"/>		IT Sourcing	
	Non-Voice BPM	<input checked="" type="checkbox"/>		Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> The largest country in the Central and Eastern Europe region, with over 16 big cities where the outsourcing sector has been in operation since 1995. Has multilingual call and contact centers serving adjacent European countries. 			<ul style="list-style-type: none"> Large working-age population and comparatively low quality of education resulting in the lack of well-educated workforce. Limited language capabilities hamper growth as well. 		
Malaysia			Thailand		
Primary Area	Contact Center	<input checked="" type="checkbox"/>	Primary Area	Contact Center	
	IT Sourcing			IT Sourcing	
	Non-Voice BPM	<input checked="" type="checkbox"/>		Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Good macro-level factors (e.g., strong economy, political stability, and good connectivity). Multilingual competencies stem from its multi-cultural, multi-ethnic workforce. A small labor pool. 			<ul style="list-style-type: none"> Continues to face political uncertainties. Low labor cost, without the hyperinflation seen in other offshore locations. Has a healthy resource pool, though language barriers exist. Infosys' acquisition of Philips' 		

		operation center has established the first major BPM capability in Thailand.
Vietnam		
Primary Area	Contact Center	
	IT Sourcing	<input checked="" type="checkbox"/>
	Non-Voice BPM	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Politically stable with strong government backing to grow outsourcing sector. Growth potential due to competitive labor and business costs. Large talent pool with over 65% below 35 years old. 		

Source: Frost & Sullivan (2016)

Of the parameters investors evaluate when making business decisions, World Bank's Ease of Doing Business Index and the International Institute for Management Development's World Competitiveness Index emerge crucial. India and Philippines fall behind both indexes despite gaining foothold on the overall global IT-BPM market. This may serve as red flag to both countries given that Malaysia, Chile, China, Mexico and Poland register at the top of both indexes thus widening the investment options for businesses.



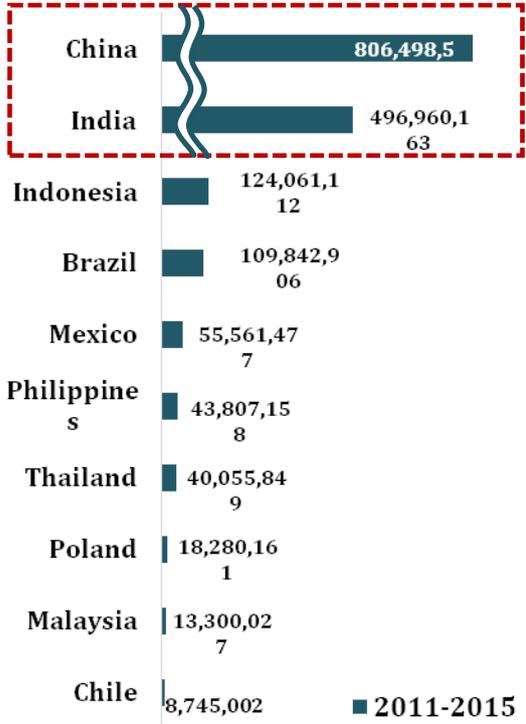
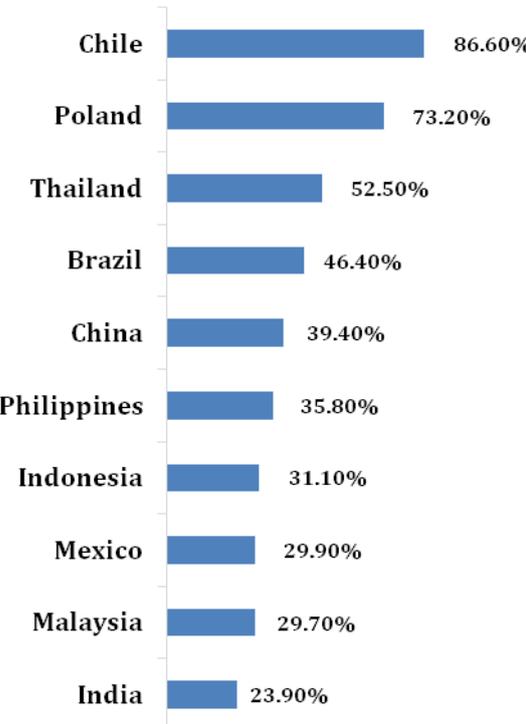
Since English-speaking competency is a prerequisite in the delivery of IT-BPM services, the industry players take careful look into such competency of the destination countries. In terms of English proficiency, the Philippines, India, Malaysia, and Poland have an advantage over other IT-BPM destinations based on various studies conducted³.



Another crucial characteristic of country destinations being looked into is the labor force population and tertiary enrolment. China and India have the biggest labor force with over 1 billion citizens each. Chile and Poland take the lead in having the highest percentage of tertiary enrolment⁴.

³Accelerate PH Roadmap 2022

⁴Accelerate PH Roadmap 2022

<p style="text-align: center;">Figure 4 : Global Labor Force Population</p>  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Country</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>China</td> <td>806,498,563</td> </tr> <tr> <td>India</td> <td>496,960,163</td> </tr> <tr> <td>Indonesia</td> <td>124,061,112</td> </tr> <tr> <td>Brazil</td> <td>109,842,906</td> </tr> <tr> <td>Mexico</td> <td>55,561,477</td> </tr> <tr> <td>Philippines</td> <td>43,807,158</td> </tr> <tr> <td>Thailand</td> <td>40,055,849</td> </tr> <tr> <td>Poland</td> <td>18,280,161</td> </tr> <tr> <td>Malaysia</td> <td>13,300,027</td> </tr> <tr> <td>Chile</td> <td>8,745,002</td> </tr> </tbody> </table> <p style="text-align: right;">■ 2011-2015</p>	Country	Population	China	806,498,563	India	496,960,163	Indonesia	124,061,112	Brazil	109,842,906	Mexico	55,561,477	Philippines	43,807,158	Thailand	40,055,849	Poland	18,280,161	Malaysia	13,300,027	Chile	8,745,002	<p style="text-align: center;">Figure 5 : Gross Rate of Tertiary Enrollment</p>  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Country</th> <th>Rate (%)</th> </tr> </thead> <tbody> <tr> <td>Chile</td> <td>86.60%</td> </tr> <tr> <td>Poland</td> <td>73.20%</td> </tr> <tr> <td>Thailand</td> <td>52.50%</td> </tr> <tr> <td>Brazil</td> <td>46.40%</td> </tr> <tr> <td>China</td> <td>39.40%</td> </tr> <tr> <td>Philippines</td> <td>35.80%</td> </tr> <tr> <td>Indonesia</td> <td>31.10%</td> </tr> <tr> <td>Mexico</td> <td>29.90%</td> </tr> <tr> <td>Malaysia</td> <td>29.70%</td> </tr> <tr> <td>India</td> <td>23.90%</td> </tr> </tbody> </table>	Country	Rate (%)	Chile	86.60%	Poland	73.20%	Thailand	52.50%	Brazil	46.40%	China	39.40%	Philippines	35.80%	Indonesia	31.10%	Mexico	29.90%	Malaysia	29.70%	India	23.90%
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<p>Note: 1) Total labor force comprises people aged 15 and older who meet the International Labor Organization definition of the economically active population</p>	<p>Note: 1) 2014 data used unless unavailable*, hence, 2013 data used instead</p>																																												
<p>Source: World Bank, Frost and Sullivan analysis</p>	<p>Source: UNESCO Institute of Statistics, Frost and Sullivan analysis</p>																																												

B. The Philippine IT-BPO Industry

1. History

SPI Global offered the first offshoring and third-party outsourcing services in the Philippines during the 1980s. Burbank Animation Inc. came after with animation outsourcing in 1983. This was followed by animation services during the late 1980s and early 1990s, where the Philippines was known as the animation capital of the world, holding 90% of all outsourced animation work.⁵ Andersen Consulting, now Accenture, followed with its establishment of the first captive center (global in-house center) in the Philippines in 1985. Call center services in the Philippines

⁵ <http://www.channelnewsasia.com/stories/marketnews/view/379666/1.html>.

flourished after the telecommunications industry was deregulated in 1995. Sykes entered the field in 1997 when it set up the first call center in the country. Another pioneer is America Online (AOL) which established an e-mail based helpdesk facility in the Clark Special Economic Zone in 1998⁶.

After 2000, government efforts geared towards positioning the country as the E-Services Hub of Asia intensified which led to the further flourishing of the industry. The outsourcing and offshoring⁷ industry experienced rapid growth after 2000. The four call centers in 2000 rose up to 108 call centers in 2005. In 2010, the Philippines was declared the world's BPO capital, with 525,000 employees in call centers and \$8.9 billion revenue generated. Come 2011, the industry was considered the biggest and fastest growing job providers in the private sector. The revenue it generated amounted to \$11B (4.9% of Philippines total GDP), with 638,000 Filipinos employed. In 2013, the revenue generated jumped up further to \$15.5B and 900,000 Filipinos are employed full time. In 2015, the industry generated 1.2 million direct jobs and US\$ 22 billion in revenues⁸. The success of the BPO sector in the Philippines has been attributed to qualities of its workforce, government support and strong industry associations⁹.

2. Present Situation

The Philippine IT-BPM industry is one of the best-performing and employment generating activities in the past for years¹⁰. It has grown so much through the years but it is set to further accelerate in the coming years having been a leader in voice-based services coupled by its continuous expansion of non-voice services. The industry has grown rapidly over the last Information Technology and Business Process Association Philippines (IBPAP) roadmap period (2010 to 2016), increasing revenue at a compound annual growth rate of ~17% (from US\$ 8.9 billion in 2010 to an estimated US\$ 22.9 billion in 2016)¹¹. In terms of employment, IBPAP findings indicate that the sector adds an average of >100,000 jobs annually.

⁶ G. Pierre Goad, "At your service," *Far Eastern Economic Review* 162 (September 2, 1999): 8-10.

⁷ Outsourcing refers to obtaining certain services or products from a third party company which could be located anywhere. Offshoring refers to obtaining services or products from another country. – businessdictionary.com

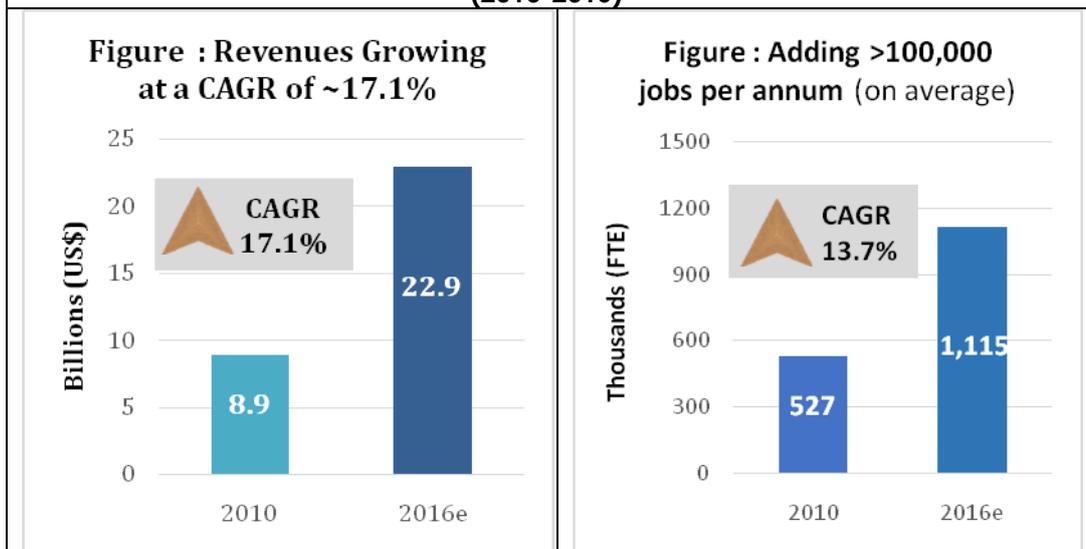
⁸ <http://business.inquirer.net/209531/bpo-industry-grows-second-largest-source-income-ph>

⁹ <https://lkyspp.nus.edu.sg/wp-content/uploads/2014/12/Business-Process-Outsourcing-in-the-Philippines.pdf>

¹⁰ <http://industry.gov.ph/industry/it-bpm/>

¹¹ Accelerate PH Roadmap 2022

Figure 6: Performance of the Philippine IT-BPM setor in previous Roadmap period (2010-2016)



Source: The Philippine IT-BPM Roadmap 2016, Frost and Sullivan analysis

While voice-based services are identified as the largest contributor in the local BPO industry, several non-voice and complex BPO services such as healthcare information management, knowledge process outsourcing, engineering, animation, and software development are gaining prominence in the global BPO sector and are in a higher growth pace vis-à-vis voice-based businesses¹².

For the Philippines, being in the prime spot is an outcome of various factors which generally include effective labor force and purposive government intervention.

Effective Labor Force

The Philippine population is conducive to employment having 62% of the population belonging in the ages 15 to 64. Moreover, the national literacy rate stands is 95.4% and 28% of the labor force has tertiary education¹³. 52.5% of more than 550,000 students who graduated from higher education institutions in 2013 have degrees in business administration, engineering and IT. Globally, the Philippines ranks 6th both in the Global Labor Force Population and Global Gross Rate of Tertiary Enrolment. (See *Exhibit 33 and 34 on page...*)

Aside from these, the Philippines' leading position in voice-based services is commonly attributed to three factors: English spoken with an American accent,

¹² Ibid.

¹³ World Development Indicators: 1960-2013

cultural affinity with the US and the hospitable nature of Filipino workers¹⁴.

Table 2 : SEA Countries in Tholons 2016 Ranking and English Proficiency Index (2015)

SEA countries on Tholons 2016 Rating			English Proficiency Index (2015)	
Ranking	Country	City		
2	Philippines	Manila (NCR)	Philippines	62.95
7	Philippines	Cebu City	India	52.91
17	Malaysia	Kuala Lumpur	Malaysia	51.88
18	Vietnam	Ho Chi Minh City	Poland	51.34
19	Vietnam	Hanoi	Indonesia	51.05
28	Singapore	Singapore	Chile	49.41
55	Indonesia	Jakarta	Mexico	49.41
66	Philippines	Davao City	Brazil	
69	Malaysia	Penang	China	
81	Philippines	Santa Rosa, Laguna	Thailand	
85	Philippines	Bacolod City		
86	Thailand	Bangkok		
90	Philippines	Iloilo City		
93	Philippines	Dumaguete City		
94	Philippines	Baguio City		
97	Philippines	Metro Clark		

Source: Education First (EF) English Proficiency Index, Frost & Sullivan analysis

However, the English proficiency of the Filipinos is said to be in decline for a decade. This is often attributed to the lack of good English skills among teachers and the poor quality of textbooks¹⁵. This is accompanied by the widespread use of *Taglish*.¹⁶ Average rejection rates in the BPO industry have been very high, with only five out of every 100 applicants considered suitable¹⁷.

Government support

According to the IT- BPO Investment Primer 2012, government support to encourage investment on the industry through financial incentives include VAT, import and customs duty waivers, exemptions on local taxes, 6-8 years long tax holidays, and post-tax holiday tax payment at 5% rate on gross income.

There are also training programs from the government which specialize on IT-BPM work. A discussion will be provided on the TVET Section of the paper.

¹⁴Accelerate PH Roadmap 2022

¹⁵ http://www.nytimes.com/2007/08/13/business/worldbusiness/13iht-english.1.7096773.html?_r=0.

¹⁶ http://www.nytimes.com/2006/11/24/business/worldbusiness/24english.html?_r=0.

¹⁷ <http://www.rappler.com/move-ph/ispeak/67182-praise-bpo-worker-philippines>.

II. Projections and Pertinent Issues

A. Projections

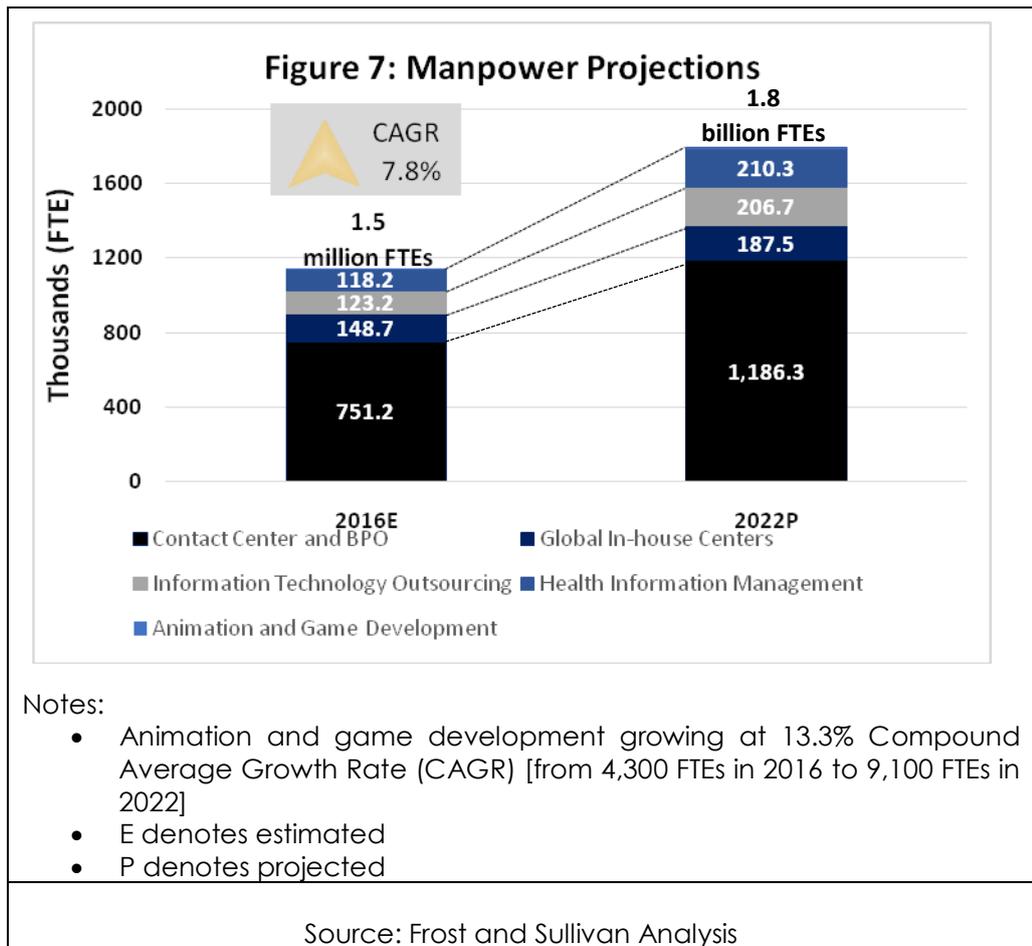
In 2016, ITBPAP released the 10 New Wave Cities (NWC) which are said to be hubs to best enable and support the continued growth of the IT-BPM sector. The list includes: Baguio City, Cagayan De Oro City, Dagupan City, Dasmariñas City, Dumaguete City, Lipa City, Malolos City, Naga City, Sta. Rosa City, Laguna, and Taytay, Rizal. The evaluation of which was based on the 2015 assessment guided by the NWC scorecard under the following criteria: talent, infrastructure, cost, and business environment.

For the CEO of the Leechiu Property Consultants, David Leechiu, "The economic turmoil in the Western countries and China has spelled greater need to move business operations here in the Philippines where there is a large pool of talent and where it's cost-efficient. The IT-BPM industry will see sustained growth in the coming years and that's why industry players now move to the provinces where there's great potential."

Moreover, in its recent roadmap, ITBAP expects the industry to generate \$40 billion in revenues, 7.6 million direct and indirect jobs, 500,000 jobs outside of the National Capital Region, and cover 15 percent of the total global outsourcing market by the end of 2022.¹⁸

Each IT-BPM subsector (Animation and Game Development, Information Technology Outsourcing, Contact Center and BPO, Health Information Management, and Global In-house Centers) is anticipated to expand at different rates. This is due to varying factors, ranging from the maturity of the subsector, global market demand, supply constraints, changing service portfolios, as well as indirect factors such as infrastructure, connectivity, real estate, and government incentives.

¹⁸ <http://www.manilatimes.net/bpo-revenues-outpace-ofw-remittances-2018-ing-bank/309043/>

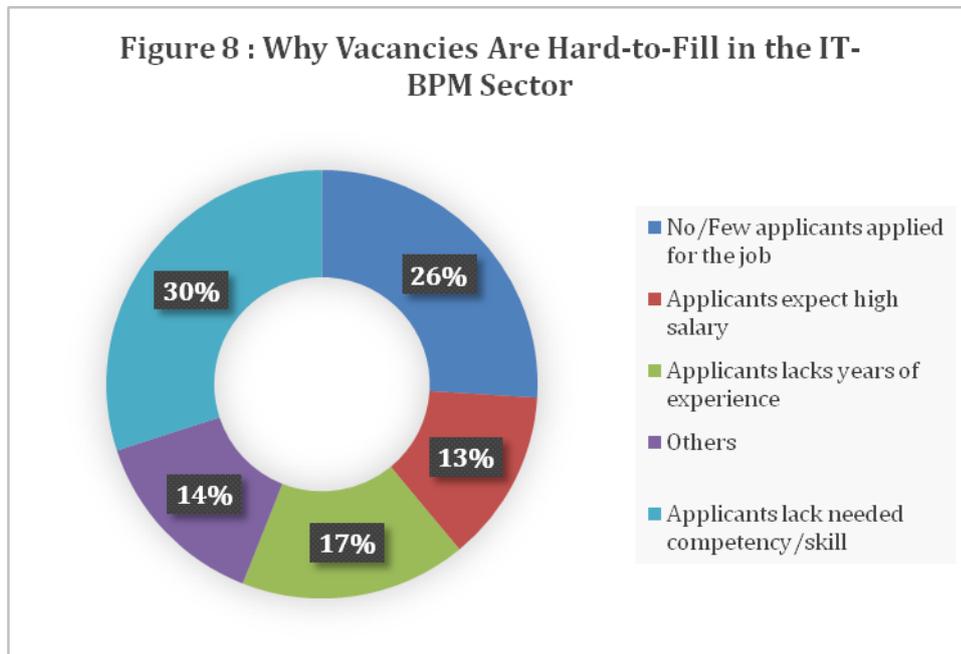


Also relevant in this discussion is the hard to fill in demand jobs and skills. Within the ITBPM sector, around 12.6% of vacancies is classified “hard-to-fill-occupations” – though quite significant, this is lower than the national average of 17.5%. Jobs under this classification heavily require technical skills and relevant work experience.

<i>Technical skills</i>	<i>General skills</i>	<i>Other skills</i>
Data analytics and statisticians	Experienced mid-level managers	Foreign language skills
Experienced digital artists	HR managers and recruiters	Workforce planners
Medical specialists with interest to join IT-BPM sector		Customer service representative (call center agents)
IT specialists (e.g. application and web developers, solutions architect, security and network engineers, system analysts and designers)		

Source: Frost & Sullivan, 2016

These vacancies are said to be hard to fill due to several reasons which the government could look into for possible intervention:



The following changes are critical for the human capital skills spectrum of the Philippine ITBPM sector to move towards a higher value-added scenario¹⁹:

- Specialized high-skilled entrants (e.g., PhD, MS, Industry laterals) coming in at the mid and high end of the skills pyramid
- Existing workforce upskilled from low to mid; and mid to high skill
- Mid-career entrants (e.g., laterals, managers) and specialized graduates coming in to bolster mid and high level skills requirements
- Existing manpower engaged in low-skills tasks to be reskilled to perform relatively high-value jobs

For more sustained development in the ITBPM sector beyond 2022, it is essential to strengthen the focus on the foundational capabilities in Science, Technology, Engineering and Mathematics (STEM).

Despite strong growth projection for the industry, external factors could challenge, retain, or advance this existing projection. Impending issues today include the Trump Administration's Anti-Outsourcing Bill as well the effects of technological advancements which some fear due to the possible skills substitution (human labor to robotics) it might bring. On both issues, no

¹⁹Accelerate PH Roadmap 2022

agreement, though there are some commonalities, on their legitimate effects to the IT-BPM industry has been made. This section discusses the current opinions on the matter.

B. US Anti-Outsourcing Bill

In March 2017, the US Call Center and Consumer Protection Act was reintroduced to the US Congress. It is intended to hinder companies from offshoring supposedly American jobs by incentivizing them to locate in the US through the creation a public list of “bad actors” of the companies that ship work opportunities overseas. These companies would be ineligible for Federal grants or guaranteed loans. It would also require agents to disclose their call center location to their U.S.-based clients and grant the latter with the right to request the call be transferred to a customer service agent who is physically located in the U.S.

A similar Anti-Outsourcing Bill has been already introduced to the US Congress in 2012. The Bill was intended to prohibit American companies from setting up call centers in foreign countries. Likewise, it is intended keep jobs in the US by rewarding companies who move its operations back to the U.S. If implemented, it would have eliminated tax breaks for American companies outsourcing core and non-core businesses and manufacturing jobs to other countries. It would also provide a 20-percent tax deduction on costs associated with closing outsourced operations and transferring jobs to the US.

The bill was junked in July 2012. The Philippine Department of Labor and Employment said that US business groups have adamantly opposed the bill, as it would negatively affect their competitiveness and overall standing in the global trade. ITBPAP added that outsourcing business services to the Philippines helps make American companies more competitive and profitable.

At the same time in 2012, DTI Secretary Domingo believed that: *“The declaration of President Barack Obama to withdraw support for businesses that ship jobs overseas will not make a dent in the booming business outsourcing process (BPO) industry in the Philippines. And even if this bill will be passed, its impact on the Philippine BPO industry will only be minima las the bill will cover companies that serve federal offices or those that receive federal funding.”* He maintained that outsourcing will be here to stay no matter what legislation will

be passed; noting that at the end of the day, competitiveness will play a huge role on the companies' decision to outsource jobs to lower operating costs.

During last year's bill reintroduction, economic analyst April Lynn Tan, said that there would not be a large number of BPO jobs leaving the Philippines because of the significant wage differential between Philippine and U.S. agents. Glassdoor, a recruiting site based in the US, added that the hourly wage for a call center agent in the Philippines is around \$2 while the hourly wage of a call center agent in the US is at \$10.50.

Bernardo Villegas, economist at the University of Asia and the Pacific economist, believes that while Trump can force some of the investors to try to redevelop manufacturing in the US, it is not possible to do that in services. The differences in wages in services are much more than wages in manufacturing. He referenced his position to the earlier desire of the then US President Barack Obama to bring back jobs to the US but nothing happened for "*these decisions are made by businessmen.*"

On the other hand, Dutch financial giant ING sees a slow down to mid-single digits in the growth in the Philippine IT-BPM due to Trump's inward-looking orientation. The group adds that the Philippines is the most exposed country in Asia, excluding Japan, to a Trump shock to US outsourcing²⁰.

Even amid this threat, ING Bank Manila maintains that revenue from the sector is projected to outpace remittances from overseas Filipino workers (OFW) because BPO revenues are seen to grow at an average of 9 percent yearly toward 2022.

C. Automation

Due to technological innovations, automation is fast emerging especially in a technological-based industry such as IT-BPM. The global automation spending is projected to see exponential growth in the coming years. Overall spending currently stands at roughly US\$50 billion in CY 2015 and anticipated to grow at a CAGR of over 26% to reach US\$160 billion by CY 2020.

²⁰<http://business.inquirer.net/223426/ph-outsourcing-revenue-growth-seen-slowing#ixzz4i3StdZSg>

While automation serves as an effective cost-cutting measure and productivity booster, its effects might limit outsourcing itself through human labor to robotics substitution. Prominent organizations, researchers, and personalities have differing opinions on the net impact of automation.

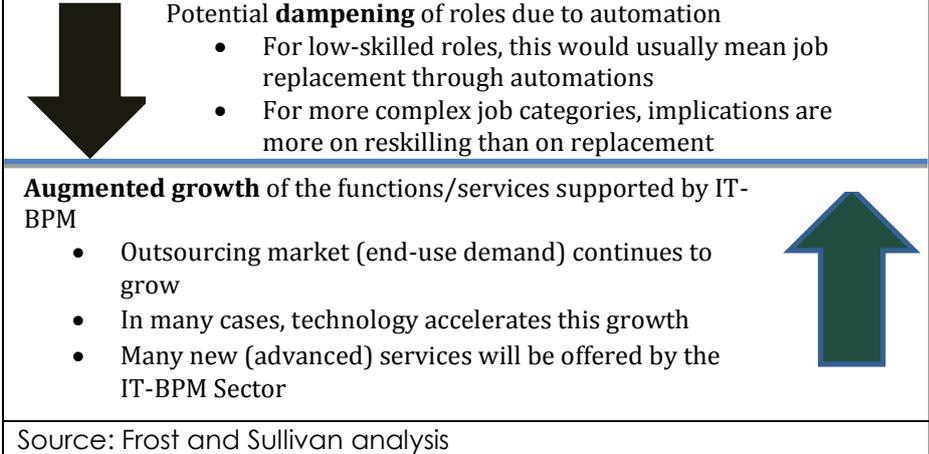
Table 4: Automation- Diverging Views on Impact	
New machines will take away jobs, benefitting a selected few and upending society	Automation will create more jobs than it destroys
<ul style="list-style-type: none"> • “47% of jobs in America were at high risk of being substituted by computer capital.”- Carl Benedikt Frey and Michael Osborne of Oxford University, 2013 • Foxconn replaces 60,000 factory workers with robots • Wipro expects its headcount to come down by 47000 in the next three years as it stresses on automation, AI. • By 2025, “an annual creative disruption impact” from AI could amount up to US\$33 trillion, including a US\$ 9 trillion reduction in employment costs- Bank of America Merrill Lynch 	<ul style="list-style-type: none"> • Argument #1: Advances in technology create new jobs and industries even as they displace some of the older ones <ul style="list-style-type: none"> - “Now more than ever, an army of talented coders is needed to help our technology advance.”- Amy Webb, CEO of strategy firm Webbmedia Group • Argument #2: There are certain jobs that only humans have the capacity to do <ul style="list-style-type: none"> ➤ “There will be many things that machines cannot do, such as services that require thinking, creativity, synthesizing, problem-solving, and innovating.”- Pamela Rutledge, PhD, and director of the Media Psychology Research Center

Source: Frost & Sullivan

Frost & Sullivan predicts that AI, its subfields, and automation will not significantly eliminate jobs; instead it will shift employment to creative, emotive, service-oriented and emerging fields. In particular, the group maintains that following trends:

1. AI and automation will increase personal and professional productivity, leaving repetitive tasks to technology and reducing the number of hours required to do a task.
2. Regulation and liability fears will limit AI and automation use, especially in careers that value judgment, such as in legal and financial advisory services.
3. Difficulty in widespread scalability will keep AI and automation in niche functions (such as data processing or logistics) for the foreseeable future.

Figure 9: Opposing Forces of Technology on IT-BPM



To elaborate on the matter, Frost & Sullivan distributed the current task/role of the IT-BPM services provided in the Philippines into these three categories:

- Low-skilled tasks/roles: simple entry-level, process-driven tasks that require little abstract thinking or autonomy
- Mid-skilled tasks/roles: complicated tasks that require experience, abstract thinking, and situational response
- High-skilled tasks/roles: complicated tasks that require specialized expertise, abstract thinking, and autonomy.

Figure10 presents the current status of the skills mix in the Philippine IT-BPM. It shows that about 45.8% of the IT-BPM workforce is under the low-skilled roles category, 39.4% are involved in mid-skilled, and 14.7% roles are high skilled. This is said to be similar with the global distribution of skills in the IT-BPM industry, but the mid-skilled are a bit higher in the Philippines. As Frost & Sullivan posits, there could be dampening of growth due to automation and augmented growth through new technology-enabled services. Dampening is likely to occur in the low skilled category and transactional services that are easier for automation to work into. Per Frost & Sullivan, 1 out of 3 low-skilled IT-BPM tasks has a 40% to 60% likelihood of getting substituted by 2020. If there would be further willingness to adopt technological advances, automation could go up to 70% to 80% by 2022.

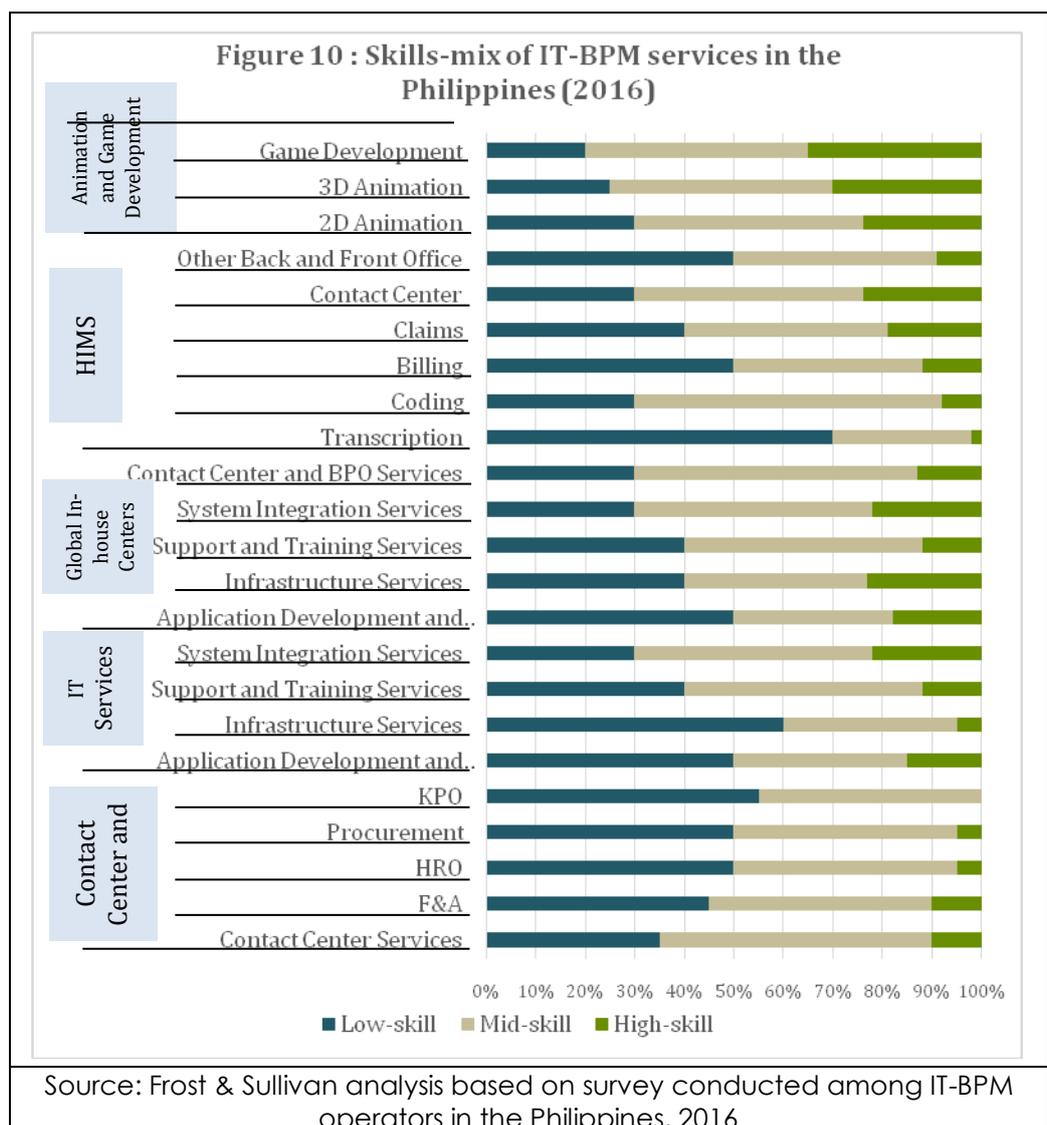
The following are the roles that have the highest propensity to be automated:

- Medical transcription
- Simple contact center services

- Basic 2D animation services
- Parts of IT technical support
- Transactional mid and back-office processes

On the other hand, augmented growth is likely to happen in high-end roles. The following are projected:

- Services with low-skill roles will grow between 3% and 6% with some function (e.g., transcription) likely to decline resulting in a weighted average mean growth of 4.3% CAGR (2016-2022)
- Services with mid-skill roles will grow at a weighted average mean growth of 12.2% CAGR (2016-2022) driven by growth in complex contact center services, back office functions, and expansion due to analytics and cloud services.



- Service with high-skill roles will grow, albeit from a much smaller base, at a weighted average mean growth of 19.1% CAGR (2016-2022), driven by growth in analytics, IT services for digitization, and potentially animation/game development services.

III. TVET in the IT-BPM Industry

TESDA has been long committed to delivering related programs under the Information and Communication Technology sector. The agency started offering ICT-related programs in 2006 with Medical Transcription NC II. The number of programs has grown through the years. To date, there are a total of 18 training regulations promulgated by the TESDA Board. Below is a list of all promulgated training regulations as of March 2016:

Table 5: Promulgated Training Regulations	
Qualification Title	Date Promulgated
Contact Center Services NC II	10/01/14
Medical Transcription NC II	10/26/06
2D Animation NC II	07/27/07
3D Animation NC III	
Animation NC II	
Cable TV Installation NC II	11/22/07
Cable TV Operation and Maintenance NC III	12/19/07
Visual Graphic Design NC III	12/19/07
Broadband Installation (Fixed Wireless Systems) NC II	08/29/08
Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) NC II	10/07/11
Telecom OSP Installation (Fiber Optic Cable) NC II	
2D Game Art Development NC III	05/09/12
3D Game Art Development NC III	09/17/12
Game Programming NC III	
Programming (.Net Technology) NC III	12/17/13
Programming (Java) NC III	
Programming (Oracle Database) NC III	
Medical Coding and Claims Processing NC III	06/16/15

Table 6: Number of Registered Programs, ICT Sector, by Region		
As of April 30, 2017		
Region	Old	New
NCR	384	13
CAR	18	0
I	37	1
II	1	
III	191	12
IV-A	103	2
IV-B	9	
V	105	
VI	18	1
VII	72	2
VIII	4	1
IX	118	
X	68	1
XI	48	
XII	45	
CARAGA	31	1
ARMM	11	1
Total	1298	

It is offered across the country by 1, 298 providers. Most of which are in NCR; Region II, on the other hand, has the least number with only 1 provider in the region.

Regions III, IV-A, V, and IX follow the lead of NCR. It is to be noted that these regions are where the New Wave Cities are located. TVET in the country positively responds to the increasing need of these cities through increasing the number of programs offered.

Table 7: Number of Enrolled and Graduated, ICT, 2013-2014				
Qualification	2013		2014	
	E	G	E	G
Contact Center Services NC II	5,013	3,786	NR	NR
Finishing Course for Call Center Agent NC II	7,181	7,330	28,502	26,393
Medical Transcription NC II	265	336	0	0
Finishing Course for Medical Transcriptionist NC II	40	73	1,058	1,034
Introduction to Animation NC II	18	18	NR	NR
Animation NC II	300	625	2,058	1,318
Animation NC III	631	486	678	206
2D Animation NC III	NR	NR	12	168
3D Animation NC III	NR	NR	30	0
1 Year Associate Degree in Web Animation	0	1	40	0
3-Year Web Graphics and 3D Animation	657	904	8	0
Visual Graphic Design NC III	4308	4571	66	212
Telecom OSP Installation (Fiber Optic Cable) NC II	0	61	NR	NR
Programming NC IV	56,430	48,645	99,503	76,722
Programming (Java) NC III (Programming Java NC III Superseded Programming NC IV)	-	-	346	0
Programming Net Technology NC III Superseded Programming NC IV	NR	NR	272	0
BSCOE-Programming NC IV	163	147	NR	NR
320 Hours Programming NC IV	NR	NR	0	226
330 Hours Programming NC IV	4	51	NR	NR
2-yr Computer Programming	0	2	26	340
Computer Hardware Servicing NC I	12,782	11,486	NR	NR
Computer Hardware Servicing NC II	79,080	66,758	169,254	148,44

				0
Computer Hardware Servicing NC III	1	15	NR	NR
Computer Systems Servicing NC II	NR	NR	1,782	746
460 Hours Computer Hardware Servicing NC II	10	26	NR	NR
BSIT-Computer Hardware Servicing (CHS) NC II	0	78	664	664
Computer-based Accounting NC II	19	56	NR	NR
Computer Secretarial NC II	75	59	NR	NR
2 yr. Computer Secretarial	85	82	0	12
Brgy. Secretarial NC II	19	16	NR	NR
Business Information Services NC II	57	30	NR	NR
Career Entry Course for Software Developers NC IV Using Microsoft.Net	265	435	NR	NR
Career entry Course for Software Developers NC IV Using Oracle	1,868	852	NR	NR
Cisco Networking I	140	74	NR	NR
Cisco Networking II	18	16	NR	NR
Computer Aided Design NC II	328	198	120	90
Computer Electronic Servicing NC II	0	1	162,944	141,606
Computer System and Network Technology NC II	NR	NR	224	322
Multimedia Technology NC II	47	0	NI	NI
PC Operation NC I	2,997	2,784	NR	NR
PC Operation NC II	1,491	2,312	178	188
PC Operations III	1,929	1,755	NR	NR
PC Operations IV	965	919	NR	NR
Two Year Computer Science (Information Technology)	0	120	38	38
Two Year Computer System And Network Technology	0	18	NR	NR
Two Year Diploma In Networking & Telecommunications Technology (DNNT)	36	0	48	48
Two Year Diploma In Office Information Systems (DOIS)	31	0	20	20
Two Year Diploma in Software Development (DSD)	27	0	38	38
Two Year Diploma in Web Applications Development (DWAD)	15	0	18	18
Two-Year Advance Diploma in Computer Studies	0	4	NR	NR
Two-Year Advance Diploma in Information Technology	0	2	NR	NR
Two-Year Associate in Computer Science	0	41	NR	NR
Two-Year Computer Engineering (In-Hardware Technology)	0	2	NR	NR
Total	177,295	106,530	339,922	372,456

E- enrolled G- graduated NR- no report

Aside from the programs with training regulations, the table above includes the training programs which are bundled together, containing a number of certain NCs in a single program. Programs which did not generate enrolment have been omitted from the table²¹. Looking at what is available, it can be observed that Computer Hardware Servicing NC II produces the greatest number of enrollees and graduates.

Table 8: Number of Persons Assessed and Certified, ICT, 2011-2014								
Qualification	2011		2012		2013		2014	
	A	C	A	C	A	C	A	C
2D Animation NC III	201	109	394	256	1,294	853	874	611
Animation NC II	5	5	462	326	343	166	427	278
Animation NC III	1	1	25	16	77	63	53	29
Cable TV Installation NC II	17	16	17	17	40	40	1	1
Computer Hardware Servicing NC II	43,532	32,203	57,492	43,225	73,107	58,727	91,420	77,054
Medical Transcription NC II	4,527	3,470	2,301	1,440	885	502	776	329
Programming NC IV	12,024	672	11,603	869	89	16	4	4
Visual Graphics Design NC III	579	298	1,208	630	3,164	1,742	1,870	1,001
3D Animation NC III	NI	NI	200	154	1005	746	352	325
Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) NC II	Year of promulgation		126	126	0	0	--	--
Telecom OSP Installation (Fiber Optic Cable) NC II	Year of promulgation		8	8	79	79	--	--
Contact Center Services NC II	Not yet promulgated		Not yet promulgated		Year of promulgation		114	66
Game Programming NC III	Not yet promulgated		Year of promulgation		2	2	--	--
Broadband Installation (Fixed Wireless Systems) NC II	--	--	--	--	--	--	109	68

A- Assessed C-certified

²¹Medical Coding and Claims Processing NC III, Cable TV Installation NC II, 3D Game Art Development NC III, 2D Game Art Development NC III, Game Programming NC III, Cable TV Operation and Maintenance NC III, Broadband Installation (Fixed Wireless Systems) NC II, Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) NC II, and Programming (.Net Technology) NC III

Likewise, Computer Hardware Servicing NC II generates the biggest number of assessed and certified persons consistently from 2011 to 2014. Other qualifications substantially lag behind.

Table 9: FYs 2010-2016 Training for Work Scholarship Program (TWSP), ICT Sector as of December 31, 2016				
Year	No. of Slots	Total Amount	Enrolled	Graduates
2010	24,470	165,599,500	21,006	20,198
2011	106,264	683,233,500	104,614	104,321
2012	25,151	158,287,500	24,804	24,333
2013	16,485	99,555,500	15,882	14,379
2014	35,530	254,341,000	35,212	33,840
2015	37,463	322,561,500	36,741	35,139
2016*	17,583	183,745,250	17,266	15,496
Total	262,946	1,867,323,750	255,525	247,706
<i>Note: * - Accomplishment Reports are partial and the monitoring of enrollment & graduates are still on-going. 2016 allotment is until end of December 2017.</i>				

TESDA has allocated a significant amount of scholarship for its IT-BPM programs. From 2010 to 2016, the agency has provided a total amount of 1,867,323,750 scholarships, with 262,946 slots. As can be seen in the table, the number of allocated slots are largely, though not totally, utilized.

When it comes to employment rate, TESDA's 2014 Study on the Employability of TVET Graduates survey found that TVET ICT graduates were employed at the rate of 62.7%. The overall employment rate for all sectors stand at 65.4%.

IV. Way Forward

A. Government intervention on the possible impact of the U.S. Anti-Sourcing Bill

While there are views that the Anti-Sourcing Bill will not directly affect the IT-BPM, still the Philippine government should be prepared on possible impact of this proposed legislative measure once the bill passed into Law. The government, through its concerned agency, should conduct a full-blown research on the effects of the Anti-Sourcing Bill be passed in the U.S. No united stand- hence, the lack of necessary interventions- is available today since the subject has just emerged. From there it should take a concerted, comprehensive step in addressing the issue.

With the strong growth projections posted for IT-BPM, it is imperative to implement thoughtful interventions to the sector to propel it towards further progress engendering national development.

Broadly, should the current high demand of the industry be retained, it is ideal for the country to continue highlighting and maintaining its comparative advantage in offering IT-BPM services, even against the home countries of the companies. On the other end, should the issue lead to decrease in demand, the Philippine education system must start equipping the people with knowledge and skills asked for by the labor market.

Prioritization should be anchored on the key areas indicated in the Human Resource Development Roadmaps 2016-2022, Industry Roadmaps, and the Philippine Development Plan(PDP) 2017-2022.

The key areas of the two roadmaps are presented below:

<i>Human Resource Development Roadmaps 2016-2022</i>	<i>Industry Roadmaps</i>
1. Aerospace	1. Aerospace
2. Automotive	2. Automotive
3. Automotive parts	3. Auto Parts
4. Biodiesel	4. Biodiesel
5. Cement	5. Ceramic Tiles
6. Ceramic tiles	6. Chemicals
7. Chemicals	7. Copper
8. Copper and copper products	8. E-Vehicles
9. Electric vehicles	9. Electronics
10. Electronics	10. Furniture
11. Furniture	11. Iron and Steel
12. Iron and steel	12. Metalcasting
13. Metal casting	13. Motorcycle
14. Motorcycles	14. Natural Health Products
15. Natural health products	15. Petrochemicals
16. Petrochemicals	16. Plastics
17. Plastic	17. Paper
18. Manufacturing	18. Rubber
19. IT-BPM	19. Tool and Die
20. Rubber products	20. Cacao / Tablea
21. Jewelry	21. Carrageenan
22. Tool and die	22. Condiments
	23. Processed Fruit
	24. Processed Meat
	25. Processed Shrimp
	26. IT-BPM
	27. Housing

Though almost the same, the Industry Roadmap has other sectors under agribusiness. Aside from these, the PDP provides region-specific priority sectors:

REGION	PRIORITY SECTOR ¹¹
I	coffee, cacao, processed fruits, processed meat, tourism
II	processed fruits, processed meat, coffee, furniture, cacao, agribusiness
III	bamboo, furniture, aerospace, processed meat, shipbuilding, aerospace
CALABARZON	auto, electronics, petrochemical, Information Technology and Business Process Management (IT-BPM), chemicals, aerospace
MIMAROPA	seaweed, cacao, rubber, coco coir, tourism
V	metal casting, coco coir, health care, agribusiness
VI	processed meat, processed shrimp, tourism
VII	seaweed/carrageenan, dried mangoes, furniture, IT-BPM, shipbuilding, tourism
VIII	processed meat, copper, processed marine, processed fruits, natural health products, agribusiness
IX	rubber, cacao, processed fruits (mango), coconut, agribusiness
X	rubber, bamboo, cacao, coco coir, coffee, agribusiness, tourism
XI	processed meat, seaweed/carrageenan, cacao, agribusiness, tourism
XII	rubber, palm oil, processed fish/aquamarine, tourism, agribusiness
Caraga	processed marine, palm oil, rubber, agribusiness
CAR	coffee, processed vegetables, aerospace, electronics, tourism
ARMM	coffee, rubber, cacao, palm oil, agribusiness

B. Anticipating possible skills substitution from IT-BPM to automation services

Job displacements in IT-BPM due to artificial intelligence (AI) and other technology-related disruptors must also be looked upon, such as: 1) low-skilled tasks/roles: simple entry-level, process-driven tasks that require little abstract thinking or autonomy; 2) mid-skilled tasks/roles: complicated tasks that require experience, abstract thinking, and situational response; and 3) high-skilled tasks/roles: complicated tasks that require specialized expertise, abstract thinking, and autonomy. Related qualifications that can address the future requirements of the AI should be reviewed and aligned accordingly to needs of the industry. Advocating for adaptation and flexibility to the future changes with partner institutions and organizations is of significant importance today. This is to ensure that concerned entities will be informed and be engaged in the future trends in employment.

C. Addressing the skills gaps in the IT-BPM

Currently, as a key employment-generating industry, the government must ensure skills matching between the labor pool and the IT-BPM industry job opportunities. The ratio of 5 out of 100 applicants who meet the required level of English proficiency, as indicated in a study, implies that an immense work need be done in filling up the available jobs. While the IT-BPM companies contribute its share of providing skills

trainings, the education agencies should do its critical part in institutionalizing measures to strengthen the English proficiency of Filipinos and maintain competitive advantage in the IT-BPM industry.

TESDA for its part offers English Proficiency for Customer Service Workers (100 hours) through its Language Skills Institute (LSI). Undergoing this training could be a leverage for applicants and as such could be capitalized on by TESDA to boost employment. Aside from the usual means, further promotion to the public of this program through government-industry linkage could be a viable way to facilitate employment. Unqualified applicants on the grounds of the preceding, could be referred by the industry to TESDA LSI for training.

As for the provision of education/training for the middle and high skilled jobs, one of the critical engagements with the IT-BPM industry is the update of TESDA's existing training regulations as well as the development of new training regulations for the IT-BPM sector to ensure its quality and relevance in the changing time. The training regulations that the agency has created years ago might need revisions, especially with the adoption of new technologies which may have altered how tasks are done. There is a recommendation to fast track the update and/or development of training regulations to meet the immediate requirements of the industry.

As it already is, TESDA should remain responsive to the requirements of the Philippines Qualifications Framework (PQF)²². From the creation of its technical working group tasked to come up with the framework for packaging technical education programs in PQF level 5, to its implementation of workshops to develop a uniform understanding of the PQF Level 5 programs, to the current drafting of diploma level qualifications- which includes a qualification under ICT- the Agency must continue its efforts in delivering the specifications of the Framework.

The agency should also engage with the industry for the training of trainers with the aim of improving training delivery. It must be ensured that the actual training is grounded on the industry-government created training regulations.

Moreover, TESDA should also continue to allot scholarship for the IT-BPM skills trainings as another strategy to boosting the supply of qualified applicants.

²² The PQF is a quality assured national system for the development, recognition and award of qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers.

In recognition of the importance of flexibility in this rapidly changing time, TESDA has adapted and incorporated the 21st Century Skills Framework in its Basic Competency Standards of TVET qualifications from Levels I to V of the Philippine Qualification Framework. The expanded Basic Competencies now include the main themes of the 21st century skills: Learning and Innovation, Critical Thinking and Problem, Information and Technology, Entrepreneurship, Life and Career Skills, Environment Literacy, Occupational Health and Safety, Communication, and Teamwork and Collaboration.

The outlook in the Philippine IT-BPM industry could still be positive despite the discussed challenges but this will only happen if the industry, together with the government, will able to find the right talent, secure employment, and sustain investment in the IT-BPM sector.

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