

INDUSTRY CAREER GUIDE: IT-BPO¹

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EXECUTIVE SUMMARY

Off-shoring describes the relocation by a company of its business processes like manufacturing, operations, and support processes to other countries, particularly in global production networks. Outsourcing involves the contracting of a third party to perform the necessary processes within the company. The recent development of the ability of companies to outsource suppliers outside the nation gave rise to the concept of off-shoring which not only implies foreign inputs to work domestically, but involves cross-country collaborations as well. The Off-shoring and Outsourcing (O&O) Industry is known widely as the IT-BPO (Information Technology – Business Process Outsourcing) industry. The industry is relatively new, but the dynamism it exhibits is great. Global O&O has grown to 15% in 2008, which is the third largest around the world. In 2008, the industry contributes 3.6% of Philippine GDP and 12.36% of exports which is particular in the export of services.

The industry is made up of 8 sub-sectors: contact centers, knowledge process outsourcing and back offices, software development, animation, game development, medical transcription, and engineering design, wherein the bulk of employment is in contact centers. The specialization, conditions and requirements of the work force of the industry vary in the specific sub-sectors but one common denominator is that they are all required to be technologically savvy, not only with basic computer applications, but advanced ones as well. Employment has increased significantly in recent years particularly that of call center agents, but the industry is still contributing only 0.74% of total employment in 2006, growing at an average rate of 0.22% per year.

Contact Centers are comprised mainly of call center agents who are responsible for technical support, customer care and customer service, as well as sales and promotional processes of companies. KPOs and Back Offices are comprised mainly of consultants that provide research and

specialized services as well as accounts positions (accountants and bookkeepers) that manage the financial records of companies. Software Development is comprised of software developers, web developers, network managers and systems analysts which provide for the IT and software needs of companies. Animation and Game Development is comprised generally of creative occupations such as concept artists, story board artists, modelers, animators, composers, editors and visual effects artists that focus in producing movies, commercials and games for commercial trade. Medical Transcription is made up of medical transcriptionists and medical secretaries which cater to the less-medical, administrative processes needed in medical institutions: tending to records, following up on patient medication and prescriptions. Engineering Design is primarily comprised of just one occupation: engineers, but varies in function depending on the needs of the company: civil engineering design, architectural drafting and CAD operators.

The IT-BPO industry will be one of the most dynamic industries in the future because of the increasing share of the services sector in the economy of many countries. In fact, the Global Outsourcing Industry is seen to grow by 9 percent to \$464B in 2011 which is a 9.2% increase from 2010's \$235B. Despite this, the Philippine IT-BPO industry will still need to compete against BPO giants such as China and India and other rising BPO-oriented countries in order to hold or even surpass its third place in the IT-BPO race. In addition, developments in ICT such as reduction in cost of bandwidth and the development of the Philippine Cyber Corridor, and enhanced competition will enhance trade in services across the globe including BPO. Schools are also offering new courses that cater to the specific needs of businesses like network management, game development courses, animation courses as well as programming courses. These kinds of courses are now being offered though in limited schools to cater to the growing demand in the IT-BPO industry. The Philippines is aiming to saturate

the markets of non-English-speaking countries and the government is acting upon it, particularly the Board of Investments, with the Medium-Term Philippine Development Plan 2004-2010.

To improve the industry further, there is a need to address the mismatch in skills, but that is why courses that caters to BPO and business needs are being offered now by some universities. The Philippines strongest points is that of its level of compensation costs, level of education, experience, language capabilities, size and availability of the labor force. Unfortunately, to truly excel in the industry, the Philippines needs to improve on infrastructure investments and tax and regulatory costs, as well as cultural exposure and protection of intellectual property. There is a need for stronger government support as well as technology-centered education, as well as improvement in legal frameworks in order to strengthen the monitoring, facilitation and development of the information communication technology orientation of the industry. There is a growing gap between the requirements of the academe and the industry, so there is a need to bridge that gap so as to meet the growing labor demand of the industry, not to mention to avoid the mismatch mentioned above.

In general, the IT-BPO industry is growing to be one of the most dynamic industries in the country, there is a need to eliminate cultural barriers such as negative mentalities against the occupations that are essential to the industry. There is a need to accept that this industry is actually something the Filipino people is good at, and this should be strong driver, not only for the industry, but for the country.

I. Nature of the Industry

A. Service-oriented Industry

Off-shoring, as what may be inferred from the term, describes the relocation by a company of its business processes to other countries. These business processes usually involve manufacturing, operations, and support processes such as accounting and customer service. An example of this is a global production network wherein the various production processes come from different countries: in computers, microchips are generally assembled in the US, other parts are manufactured in Asian countries, but the assembly of the actual computers takes place in the country of which they are sold. This includes provision of professional labor and substitution of a service from any foreign source for a service initially produced by members in the company.

Outsourcing has a broader scope than Off-shoring but they are both borne from the same concept as that of contracting out of a usually in-house business function to external providers. It basically involves the contracting of a third party to perform the necessary processes within the company. The recent development of the ability of companies to outsource suppliers outside the nation gave rise to the concept of off-shoring. Off-shoring in this sense does not require, however, that inputs employed from other countries to work domestically for the company, meaning they can have cross-country collaborations without having to physically relocate to the client's country. In the Philippines, the **Off-shoring and Outsourcing (O&O) Industry** is more widely known as the **IT-BPO (Information Technology-Business Process Outsourcing) Industry**.

B. Industry Sub-Sectors

i. Type of Establishments

The O&O or IT-BPO industry branches out into three main divisions: (1) the BPO division, (2) the IT and Cyberservices division, and (3) the Engineering Services division. Contrary to conventional expectations that the IT-BPO industry is comprised only of contact centers (call centers), the industry includes various sub-sectors such as back-office services and knowledge process outsourcing along with the contact centers under BPO, engineering development (e.g. provision of equipment and development of engineering products) under Engineering Services, data transcription (legal and medical), animation, software development, and game development under the IT and Cyberservices division.

More specifically, the eight industry sub-sectors are defined by the DTI (as cited by the ADB and IDEA) as:

1. Contact Center or “Call Centers”

The contact center consists of in-bound and outbound voice operation services for the purposes of sales, customer service, technical support, and others.

2. Back Office/Knowledge Process Outsourcing (KPO)

Back offices provide services related to finance and accounting (e.g. bookkeeping, accounts, maintenance, claims processing, and asset management) and human resource administration (e.g. payroll processing, benefits administration, human resources data management). Knowledge Process Outsourcing (KPO) involves the delegation of knowledge-intensive business processes that require significant domain expertise, analytic skills, and judgments and decision-making capabilities to a third-service provider. The goal of KPO is to deliver value by providing

superior enterprise decision-making as opposed to cost savings alone.

3. Data Transcription

This includes transcription services for interpreting oral dictation of health professionals, dictations during legal proceedings, and other data encoding services.

4. Animation

Animation is the process of giving the illusion of movement to cinematographic drawings, models or inanimate objects through 2D, 3D, and others.

5. Digital Content/Game Development

It is the creation of products that are available in digital form, such as music, information, and images that are available for download or distribution on electronic media.

6. Software Development

Software Development includes the analysis and design, prototyping, programming and testing, customization, reengineering and conversion, installation and maintenance, education and training systems, software, middleware and application software.

7. Engineering Development

It includes engineering design for civil works, building and building components, ship building, and electronics.

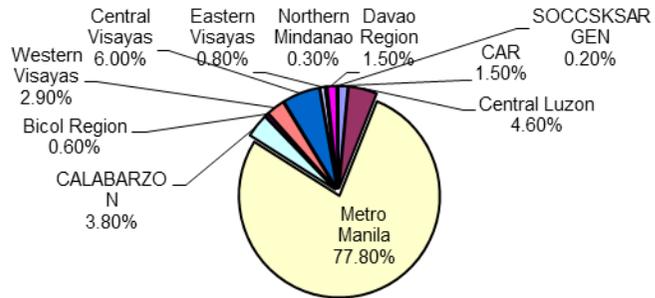
ii. Regional Distribution/Concentration of Industry Activity

Regions that are deemed as centers of the industry include Metro Manila and Cebu which are both regional economic centers of the Philippines. As indicated in Graph 1, both have the topmost population density as well as the highest concentration of IT-BPO activity in the country. As of 2010,

Metro Manila controls 77.8% of IT-BPO activity while Cebu trails behind with 6% control of total IT-BPO activity (Sanez, 2010). Eastern Visayas (0.80%), Northern Mindanao (0.30%), and SOCCSKSARGEN (0.20%) are the regions with the lowest IT-BPO population industry. Aside from these national centers, there are upcoming Next Wave Cities identified by the Business Processing Association of the Philippines (BPAP). The next wave cities are Baguio, Batangas, Cabanatuan, Cainta, Camarines Sur, Dagupan, Dumaguete, General Santos, La Union, Metro Laguna, Metro Cavite, Iloilo, Davao, Bacolod, Angeles/Clark/Mabalacat/Dau, Baliuag/Marilao/Meycauayan, Cagayan de Oro, Malolos/Calumpit, Lipa, Legazpi, Leyte, Pampanga South, San Fernando, Subic/Olongapo, Tagbilaran, Tarlac, Tuguegarao, and Urdaneta.

As of 2008, there are 618 BPO companies in the Philippines. The largest, as comprised by 191 companies (31%), belong to Contact Centers. Transcription has 135 companies (22%), Information Technology or Software Development has 119 companies (19%), Back-Office services (KPOs) have 81 companies (18%), Animation has 49 companies (8%), and Engineering has 43 companies (7%).(Senate of the Philippines, 2010).

Graph 1. Regional Distribution of IT-BPO Activity (2010)



In the 2009/2010 Bureau of Labor and Employment Statistics (BLES) Integrated Survey (BITS) and even in any past records of the BLES, the IT-BPO Industry does not have its own classification yet, but its sub-sectors are classified under main industries. Particularly, the two major industries wherein IT-BPO have activities are classified are the Real Estate, Renting and Business Activities which has a total of 2,749 establishments, 1,445 with vacancies and 1,304 without vacancies; and the Other Community, Social and Personal Service Activities which has a total of 784 establishment, 289 with vacancies and 295 without (BLES, 2010). Given the classification of BLES, Call Centers (representing contact centers), Accounting, Bookkeeping and Auditing Activities, Tax Consultancy, Research and Development, Miscellaneous Business Activities (representing Back Offices and KPOs), Computer and Related Activities (representing Software and Game Development), Architectural, Engineering and Related Technical Consultancy (representing Engineering Design), and Medical Transcription and Related Outsourcing Activities (which represents Data Transcription) fall under Real Estate, Renting and Business Activities. Further, Animated Films and Cartoon Production (representing Animation) as well as Other Service Activities fall under the classification of Other Community, Social and Personal Service Activities. The ratio of easy-to-fill industry vacancies to hard-to-fill vacancies is larger as can be seen in Table 1;

implying that there are better employment prospects for easy-to-fill jobs relative to the hard-to-fill jobs.

Table 1. Number of Establishments with Vacancies for Hard-to-fill and Easy-to-fill Occupations in the IT-BPO Industry

Sub-sectors	Total	Hard-to-fill	Easy-to-fill	Both
Call Center Activities	150	20	83	47
Accounting, Bookkeeping, and Auditing Activities; Tax Consultancy	18	7	9	3
Miscellaneous Business Activities	760	214	374	171
Research and Development	23	4	11	9
Computer Related Activities	204	20	87	97
Animated Films and Cartoons Production	2	0	0	2
Medical Transcription and Related Outsourcing Activities	26	3	15	9
Architectural, Engineering and Related Technical Consultancy	104	20	41	43

Other Service Activities	120	28	70	22
Total	1407	316	690	403

iii. Industry Organizations Relative to Sub-sectors

For the whole industry, there is one umbrella association, and that is the BPAP which governs all activities for all sub-sectors in the Philippines. The organization is responsible for gathering information and data about the different sub-sectors as well as providing training programs to improve on skills and competencies for those who intend to enter or are already in the industry. It also facilitates research and development for the sub-sectors.

Under BPAP, there are several other associations specific to the various sub-sectors of the industry. For Contact Centers there is the Contact Center Association of the Philippines (CCAP); for Transcription, which recently shifted its focus on medical transcription, has the Medical Transcription Industry Association of the Philippines, Inc. (MTIAPI) which was recently renamed the Healthcare Information Management Outsourcing Association of the Philippines (HIMOAP); Animation has the Animation Council of the Philippines, Inc. (ACPI); Software Development has the Philippine Software Industry Association (PSIA); and Game Development has the Game Development Association of the Philippines (GDAP). As for KPO and Engineering Services, there has been no known association that governs the sub-sectors, but very small elite groups have been meeting for the development of such.

C. Economic Profile

The Philippine climate with regard to the IT-BPO industry has been well-receptive of the industry's growth and potentials. Though the industry is relatively new, Philippine market share for Global O&O has grown to 9.0 billion USD in 2010. Though the industry has grown significantly, its worldwide ranking dropped to number 9 based on the 2010 A.T. Kearney List. The Philippines' offshore market has grown by 46% annually since 2004 especially in trying to become the global leader in non-voice BPO work. In terms of the competitiveness of the IT industry, according to the *Investment for the future: Benchmarking IT Industry Competitiveness 2011* report, the country ranked 52nd out of 66 countries using the competitiveness index which was derived from six indicators: overall business environment, IT infrastructure, human capital, legal environment, R&D environment, and support to the development of the IT industry. This was primarily due to significant improvements in the country's IT infrastructure and human capital

i. Contribution to Philippine GDP

The entire IT-BPO Industry has contributed a share of 5% in Philippine GDP in 2010 (ABS-CBN News, 2011). In 2011, the industry grew by more than 24% compared to 2010 industry growth. Benedict Hernandez, BPAP president and chief executive, stated that if the industry continuously grows at 20% each year, the industry would be worth 25 billion USD in 2016.

ii. Distribution of Employment (Employment Size) in the Identified Sub-sectors

According to the report written by DOST – ICTO, the BPO industry has provided 640, 000 direct jobs and an estimated of 1.5 million indirect jobs ranging from construction to other service jobs.

Despite this phenomenal increase in employees, the IT-BPO industry is still contributing very little relative to the entire Philippine labor force. According to *Asian Development Outlook 2012* (as cited by Dennis & Ordinario, 2012), as of 2011, the industry only contributed 1 percent to total employment.

The bulk of BPO jobs are in the contact center sub-sector, which employed around 227,000 people, which comprises 61.03% of the total employment in 2008. The rest of the sub-sectors also grew for 2008 even the Game Development sub-sector which suffered a massive drop in 2007. The Back Office sub-sector employed 68,927 people (18.53%), Transcription employed 20,224 people (5.41%), Animation employed 8,000 people (2.15%), Software Development employed 35,314 (9.49%), Engineering services employed 12,000 people (3.24%), and Digital Content or Game Development employed 500 people (0.13%). Total employment in the country grew by only 1.6 percent during 2007-2008.

In 2009, the contact center sub-sector grew by 23.3 percent to 280,000 people, which contributed 63.3 percent in industry employment. Back-Offices and KPOs grew by 24.5 percent to 86,000 people, which contributed 19.4 percent of industry employment. Game Development grew by 28

percent to 640 people but still only contributed around 0.1% of industry employment. Software Development, Animation, Transcription and Engineering Design experienced no significant growth in 2009 and remained constant at their corresponding contributions to industry employment.

iii. Recent Development for the Past 3 to 5 years

The most recent development is the implementation of the Roadmap 2010 set by BPAP to capture 10% of the global off-shoring and outsourcing market share by 2010 which the industry has already successfully done. Service Science, Management and Engineering (SSME) were also integrated in the curriculum in colleges and universities nationwide to develop a critical mass of skilled labor in order to sustain the growth of the industry.

In terms of laws and regulations, there has been the Medium Term Philippine Development Plan 2004-2010 which aimed to reduce connectivity costs and to develop Information Communication Technology (ICT) human resources. Executive Order No. 561 dated 19 August 2006 created the Philippine Cyber Corridor, an ICT belt that stretches from Baguio City to Zamboanga to provide a variety of high-quality Cyberservices supported by \$10 billion high bandwidth fiber backbone digital network which resulted in a reduction in the cost of bandwidth by 85% in the last 5 years. The 2009 Investment Priorities Plan provided both fiscal and non-fiscal incentives to Business Process outsourcing or voice and non-voice IT-enable processes. There has also been an allocation of nearly PhP350 Million to fund scholars and trainees for the industry. And lastly, the Data Privacy Bill

has been filed in Congress to ensure the protection of personal information in ICT.

Further reinforcing the IT-BPO Industry, as part of President Noynoy Aquino’s Philippine Development Plan Strategy for 2011-2016, BPO centers will not only be concentrated in Manila but its presence will also be strengthened in the cities such as Cebu, Davao and Cagayan de Oro. The theme *Inclusive Growth*, will utilize the BPO industry as a means to eradicate poverty by increasing employment opportunities for both skilled and unskilled individuals. Likewise, the BPO industry does not only concentrates on call centers but also focuses on other service oriented businesses such as healthcare and animation.

II. General Employment

A. Occupations in the sub-sectors

Table 2. List of Occupations in the Sub-Sectors of the Industry

Contact Centers	Back Offices
Call Center Agents Team Leaders/Supervisors Middle Managers	Investment research services (equity, fixed income and credit, and quantitative research) Business research services Data Analytics Market research services Valuation and fairness opinions Legal process outsourcing Patent research services Business operations support, analytics & management Editorial process outsourcing Accountants/Accounts Bookkeepers

Animation	Software Development
<p>Pre-Production (2D & 3D)</p> <ul style="list-style-type: none"> - Concept Artists - Story Board Artists - Script Writers <p>Production (2D)</p> <ul style="list-style-type: none"> - 2D Animators - 2D Compositors <p>Production (3D)</p> <ul style="list-style-type: none"> - Modelers - Texturer - Rigger - Lighting - Animator - 3D Compositor <p>Post-Production</p> <ul style="list-style-type: none"> - Video Editor - Visual Effects Artist 	<p>Software Engineers</p> <p>Web Designers/Developers</p> <p>Network Manager</p> <p>Systems Analysts</p>
Game Development	Engineering Development
<p>Design</p> <ul style="list-style-type: none"> - Game Designers - Writers - Content Developers <p>Artistic</p> <ul style="list-style-type: none"> - 2D Animators - 3D Artists - Character Artists and Animators - Background Modelers - Texture Artists <p>Sound Designers</p> <p>Programming</p> <ul style="list-style-type: none"> - Engine 	<p>Outsourcing for Architectural and Engineering Services</p> <ul style="list-style-type: none"> - Consultancy - Civil Engineering Design - Architectural Drawings - Engineering Drafting - Printed Circuit Design - Wireless Devices - Display Technology - Electronic Components - Printers - CAD/CAM - Geographic Information System - Digital Mapping

Programmers - AI Programmers - Graphics Programmers - Tool Programmers Testing Others - Producers - Intellectual Property Lawyers - Market Analysts - Game Counselors - Computer Support - Language Translators	
Medical Transcription	
Medical Transcriptionists Medical Secretaries	

B. Core Occupations

Core occupations differ per sub-sector. The core occupations for call centers are their agents that supply inbound and outbound voice operation services for sales, customer service, and technical support to companies. Back offices rely more on industry experts and researchers particularly consultants who provide business and market research, and data analysis. Animation is a more intact sub-sector since there is no one or two occupations that are considered to be the “core” of the sub-sector. All occupations mentioned above are essential for the whole animation process, be it 2D or 3D animation. The same goes for the

Game Development sub-sector. In the course of the whole game development process, all occupations are quite essential. Software Development relies more on its software engineers to design software, websites and systems specific for companies. Analysts in the Software Development sub-sector come only secondary since this occupation is needed only by companies for their operations. In the Transcription sub-sector, the transcriptionists are the core occupations since transcribing both medical and legal documents is the most essential operation in the sub-sector. The Engineering Development sub-sector is rather different. There is only one major occupation: Engineers. However, the items listed above are the different services that they render. These types of services vary and there is no single core occupation that the operation of the sub-sectors revolves around.

C. In-demand and the Hard-to-Fill Occupations in the Sub-sectors

According to the definitions of the BLES (2010), in-demand occupations are determined by the number of vacancies existent in a certain occupation for a certain period, whereas hard-to-fill occupations are determined by the median duration of filling-up a certain vacancy in terms of months. As inferred from the BITS survey of the BLES (2010), the greatest demand is that for Professionals with 18,040 vacancies and 245, 279 applicants, followed by Technicians and Associate Professionals with 10,215 vacancies and 91,642 applicants, Craft and Related Trades Workers with 6,699 vacancies and 13,235 applicants, Clerks with 6,304 vacancies and 51,863 applicants, Corporate Executives, Managers, Managing Proprietors and Supervisors with 4,538 vacancies and 33,921 applicants, Service Workers and Shop Market sales Workers with 2,886 vacancies and 29,782

applicants, Elementary Occupations (Laborers and Unskilled workers) with 2,599 vacancies and 3,259 applicants, and Plant and Machine Operators and Assemblers with 1,185 vacancies and 5,152 applicants (BLES, 2010).

For the contact center sub-sector, the in-demand job would be that of the agents that drive the operations of the sub-sector, and there is no hard-to-fill jobs since the sub-sector does not discriminate entrants by their course nor does the sub-sector specify educational degree that is needed to be a contact center agent. The largest demand and hardest-to-fill in this sub-sector is the Technical and Commercial Sales Representative which has around 4,684 vacancies and 27,304 applicants, followed by Customer Service Representatives/Associates which has around 1,929 vacancies and 22,232 applicants (BLES, 2010).

For the back office sub-sector, there is no in-demand job either. Demand is always high for consultants, accountants, bookkeepers and such professional occupations since private companies always require for such professional services in their research and development as well as in identifying target markets. The hardest-to-fill in the back office sub-sector are Accountants as this occupation requires a degree in accountancy and Certified Public Accountant (CPA) eligibility. For this sub-sector, the largest demand is for Accountants and Auditors which has around 2,421 hard-to-fill vacancies and 26,976 applicants, Accounting and Bookkeeping Clerks with 1,518 vacancies and 11,112 applicants (BLES, 2010).

In the Software Development sub-sector, the in-demand occupations are those of software engineers and systems analysts since these occupations are urgently needed by

companies to design software and systems for their operations: inventory, communication and synchronization with a company's subsidiaries, accounting etc. Web designers are relatively not as in-demand as the two occupations since company websites have less priority than company systems. The two in-demand occupations also serve as the most hard-to-fill occupations due to heavy educational requirements. In this sub-sector, the greatest demand is for Systems Analysts and Designers with 1,513 vacancies and 48,040 applicants, followed by Computer Programmers which is not only essential to this sub-sector but also to the Animation and Game Development sub-sectors will 995 vacancies and 7,896 applicants (BLES, 2010).

In the Animation sub-sector, there is no in-demand occupation too since all occupations mentioned above are essential to the whole process of animation. In animating, for example, a 3D film, writing a (good) story has equal importance to designing the characters, programming their movements, and adding the effects to make the film lush and engrossing for the audience. Almost all occupations in the sub-sector are hard-to-fill since all these occupations require extensive technical training in various software and either hand-drawn or computer-generated graphic design. Relative to all other occupations, script writers have less need for technical skills (in terms of skill with computers and specialized software) but have just as much need for professional skills than occupations for other parts of the process.

The Game Development sub-sector shares the same characteristics as that of the Animation sub-sector. Almost all occupations are in-demand since they are all essential to

the game development process. Designing the story and developing the content have equal importance to the design of the characters and the programming of the AI (artificial intelligence) although writing the story or the script requires less technical skills compared to that of designing the characters and the AI. These set of occupations are also the hardest-to-fill especially since 3D designs and AI programming are rather more complex than regular graphic design and programming. Since the industry is relatively new, there are only a few colleges or universities that offer courses that specialize in the processes used for game development.

Medical Transcription's in-demand occupation is the transcriptionists since this occupation is the center of the sub-sector. Relative to other sub-sectors, the occupations in the sub-sector are not really hard to fill since there is no specific education requirement. At the same time, training is readily accessible and is not as technical or complex relative to the Animation and Game Development sub-sectors. The largest demand for this sub-sector lies in the Medical Transcriptionist occupation, the heart of this sub-sector, which has 233 vacancies and 3,205 applicants, as well as the Medical Assistant which has around 3 establishments with vacancies and 17 applicants (BLES, 2010).

D. Basic Educational, Training, and Skill Requirements

The educational requirement is nearly similar across sub-sectors. In general, a bachelor's degree is required and usually the degree is on a computer-oriented course such as Computer Science and Information and Communications Technology Management. However, for contact centers the

minimum educational requirement for a call center agent is only a high school diploma.

Training in the sub-sector is relatively uniform as well. Employees are given technical training mostly for their proficiency with computer applications; ranging from the most basic skills (like typing) to more advanced applications (programming, graphic design). Some occupations require interacting with clients, troubleshooting, and problem-solving. Up to some extent, training on communication skills, both written and verbal English proficiency is provided for employees.

As a computer-oriented industry, one skill that is needed by all occupations in the IT-BPO Industry is proficiency (mastery) of the use of computers and all relevant computer applications (which may differ per occupation). This skill is what does the job in this industry since all operations are technology-dependent.

E. Professional Licensure Requirements

In general, there are no specific professional licensure requirements for most of the IT-BPO sub-sectors. There is no license needed to be a call center agent, a script writer, a programmer, a graphic designer and a transcriptionist. The occupations that require professional licenses are the accounting profession needed in back offices and consultancy firms as well as the engineering professions in engineering development.

F. Personal Qualities

In general, employees in the IT-BPO industry need a great deal of resilience in order to adjust to the variety of working

conditions. They need to be flexible especially with regard to their working times. Since the IT-BPO industry is very diverse, people wanting jobs in the various sub-sectors have to prepare for the kind of working environment that the sub-sector offers. These working environments range from the usual 8 to 10 hour working day to late night shifts at call centers, to the flexible but irregularly-timed endeavors in studios.

Generally, but more particular to contact centers, software development, back offices, animation and game development, employees should be prepared to work in teams. Most of the time, these are teams comprised of members in different countries, more specifically, members in different time zones. This condition is quite evident in the contact center and software development sub-sectors since most of their projects are coordinated with foreign companies or have foreign bases of operation. From time to time, the animation and game development sub-sectors participate in international projects wherein which they have to be flexible.

This now implies that there is a sense of internationalization in the IT-BPO workplace. Employees in the IT-BPO industry should not only be able to relate to people from their own country but more specifically with those from other countries. Employees in the contact center sub-sector need to be skilled in communicating with people since this is the focus of their craft. This requires good people skills and mastery of foreign languages. Though English may suffice in general, sometimes learning other language helps in customer relations and in establishing rapport with foreign teams. From a very diverse repertoire of qualities, the other end of the spectrum is found in the transcription sub-sector.

Transcriptionists do not need to be people-centered but generally should have good listening skills since they will constantly listen to medical or legal tapes for them to transcribe messages and prescriptions efficiently.

G. Terms of Employment

The terms of employment vary from one sub-sector to another. Most occupations particularly in the contact center sub-sector are contractual. Back offices and KPOs offer either contractual types of work or full-time employment depending on the nature of the company and its nature of work. Software development, animation, and game development offer a variety of employment terms. From contractual, to full time, to more specific project-based terms of employment where their contract ends not in a specific period of time, but rather according to the progression of the project. Medical transcription is more often than not offered as a part-time job.

III. Industry Occupations

A. Working Conditions

i. Nature of employment in the sub-sectors

The nature of employment varies across sub-sectors. Most occupations are outsourced but there are some occupations that render full-time and part-time service in companies, and some are hired only according to the requirements and needs of company projects. As a whole, the Philippine economy, the number of non-regular (part-time) vacancies is larger than that of regular (full-time) vacancies, but this is not

the case for Corporate Executives, Managers, Managing Proprietors and Supervisors, Professionals, and Technicians and Associate Professionals, and Clerks (BLES, 2010).

In the Contact Center sub-sector, most call center agents have contractual terms of employment but some companies offer full-time employment especially to team leaders and supervisors. Despite the expected part-time to full-time ratio to be larger, Technical and Commercial Sales Representatives have 19,618 full-time vacancies and 9,680 part-time vacancies, and Customer Service Representatives/Associates has a significantly large 39,416 full-time vacancies and only 1,147 part-time vacancies.

In Back Offices and KPOs, most accounting and bookkeeping jobs are full-time in nature since they are needed all year round for company operations. Most consultants that provide business and market research services and data analytics are project-based, which are only employed during the life of a certain project. For Accountants and Auditors, there were nearly 3,965 full-time vacancies and 109 part-time vacancies, and Accounting and Bookkeeping Clerks had 6,360 full-time vacancies and 853 part-time vacancies.

In the Animation sub-sector, there is no single term for the employment of occupations. Relative to the first two sub-sectors, there is more variation in the terms of employment that employees may wish to engage in. Animators may work full-time in relatively big animation companies as in-house animators. For example Pixar in the United States, most animation graduates choose to become freelancers rendering their services independently or may sometimes

work with companies but are not necessarily under their jurisdiction. Some other animators may be employed by companies only through the life of certain projects, wherein their contracts are project-based.

Game Development occupations follow Animators much closely. There are in-house game developers (particularly game designers, animators and artists and programmers) that work for relatively bigger companies which serve as full-time developers. There are also freelancers (mostly writers and animators) who may join in bigger projects on a contractual basis. Usually, the different occupations of the game development processes are hired according to the project that companies engage in.

Software Development usually has full-time working software engineers, network managers, and systems analysts. These occupations are needed full-time by companies since software engineers are the core occupations in the sub-sector and they are needed to write programs and design the software that companies are using. Systems analysts and network managers are employed by companies not necessarily in the industry for their day-to-day operations. Part-time web designers are usually hired to design and update company websites and are outsourced by companies.

Medical Transcriptionists are generally full-time employees but some people transcribe medical records part-time. Hospitals and other medical institutions often hire permanent transcriptionists as these occupations are relatively important to hospital operations because medical records are always needed urgently.

Engineering Development occupations may either be part-time or full-time in nature. Services that render consultancy are usually done full-time but employment varies depending on the companies that hire them, making employees either contractual (with regards to the relation to the company) or project-based. Designers, architects, and providers of technological services (wireless devices, electronic components, etc.) are outsourced and project-based in nature.

Despite the outsourced property of majority of the IT-BPO industry's labor force, the number of full-time workers largely outnumbered that of part-time workers. What is evident is the diversity in working hours (as most occupations work in shifts) as well as the work environment.

ii. Working Hours

Most occupations in the industry, particularly those in the Back Office, KPO, Medical Transcription and Engineering Development sub-sectors follow the regular 8-hour work day that starts around 9 in the morning up to 5 in the afternoon. Occupations such as consultants, accountants and bookkeepers, and transcriptionists follow this time period too.

The Animation, Game Development, and Software Development sub-sectors have a more rigorous work schedule. They follow the usual 9 a.m. to 5 p.m. work hours but most often when they enter the crucial portions of the animation/game development/software development process, they usually go beyond the 8-hour work day and do overtime work. Most of the time, designers and programmers

have longer work hours due to the difficulty and complexity of their work. Also, programmers and designers work well into the night to finish their projects which prove that the IT-oriented occupations of the industry have very flexible work hours.

Among all the sub-sectors, the Contact Center sub-sector has the greatest flexibility with regard to work hours. Call center agents are subject to the harshest working hours depending on the shifts they get. Some work on the morning shift (9am to 5pm), while some work irregular hours such as 4pm to 12mn, while some have the graveyard shift which starts from 10 o'clock in the evening up to 7 o'clock in the morning.

iii. Working Environment

All IT-BPO occupations for all sub-sectors normally work in clean, comfortable offices. Employees in the Animation, Game Development and Software Development occupations work in either laboratories or studios that have computer and drawing equipment that facilitates the significant activities in the sub-sectors. Most of the time, there are no field activities and employees work at home or in their official work stations.

iv. Benefits

Social Security. The Social Security System (SSS) was created to provide private sector employees and their families with protection against the hazards of disability, sickness, old age, and death. All private employees, including resident foreign employees are compulsorily covered from the date of employment. Standard social security benefits include disability pension, retirement

pension, funeral benefit, sickness allowance, maternity and paternity leave, and miscellaneous loans.

Retirement. An employee may retire upon reaching the retirement age established in the collective bargaining agreement or other applicable employment contract. In the absence of such retirement plan or agreement, an employee may retire upon reaching the age of 60. Retirement pay is equivalent to at least one-half month's salary for every year of service.

Fringe Benefits. Holiday, vacation and sick pay are included in the salary. There are eleven (11) regular and three (3) special non-working holidays. Employees are entitled to their regular daily wage on these days. Under the law, every employee who has rendered at least one year of service is entitled to a yearly service incentive leave of five days with pay. Most companies give two weeks of paid vacation for each year of service. Although it is not required by law, most companies also give two weeks of paid sick leave.

13th Month Pay. Annual payment of a 13th-month salary is mandatory. Employees who resign or are separated from the company before the time of payment of the 13th-month salary are entitled to this benefit in proportion to the length of time they worked with the company during the year.

v. Occupational Hazards

With regard to the safety of employees, there is no significant occupational hazard that is related to the various occupations of the industry. The greatest occupational hazard that is present is the different shifts in employees' work schedules. Contact center agents that are in the

graveyard shift are exposed to higher physical safety and security risk in going to and from their offices and are also vulnerable to a great deal of risk of being ill due to sleepless nights. Animators, game developers, and software engineers may not have graveyard shifts but the greatest occupational hazard would be sleepless nights as they work rigorously through their projects. Also, there is constant exposure to computer radiation as these office occupations require sitting in front of the computer for several hours and which may also lead to migraines, body aches, eye strain, mental fatigue, and possible serious health conditions such as epilepsy or heart disorders. This may be multiplied further especially when combined with immobility, lack of exercise, and inappropriate nutrition.

B. Earnings

i. Average Revenue per Sub-Sector

Table 3. Revenue, Contribution and Growth in the Sub-sectors 2007-2008 (in million PHP)

	2007	2008	2008 Percent Share (%)	Growth from 2007(%)
Contact Centers	151,200	172,200	67.65	13.89
Back Office/KPO	16,716	34,734	13.64	107.79
Software Dev't	17,766	25,242	9.9	42.08
Animation	4,410	5,040	1.98	14.29
Game Development	42	126	0.05	200.00
Transcription	5,754	7,644	3.01	32.85
Engineering Dev't	6,384	9,576	3.76	50.00
Total	204,750	254,562	100.00	24.33

As of 2008, as expected from the largest sub-sector of the industry, a significant portion of industry revenue was contributed by the contact center sub-sector. It grew by

13.89% from 2007 to sum up to around US\$ 4,100 million and contributed 67.65% of industry revenue in 2008. The Back Office and KPO sub-sector grew immensely by 107.79% from 2007 to generate US\$ 827 million and contributed 13.64% of industry revenue. The Software Development sub-sector grew by 42.08% from 2007 and generated 601 million US\$ and contributed 9.91% of industry revenue. The Animation, Transcription and Engineering Development sub-sectors all grew from 2007 (14.29%, 32.85%, and 50%, respectively), However, the sub-sectors contribute relatively smaller parts to the industry's revenue (1.98%, 3.01% and 3.76% respectively). Noticeably, the smallest contributor to industry revenue is the Game Development sub-sector, generating only US\$ 3 million and contributing only 0.05% to industry revenue in 2008.

Table 4. Revenue, Contribution and Growth in the Sub-Sectors 2009 (in million PHP)

	2009	2009 Percent Share (%)	Growth from 2008 (%)
Contact Centers	210,000	69.2	22
Back Office/KPO	46,956	15.5	35
Software Dev't	23,856	7.9	-5.5
Animation	5,040	1.7	0.0
Game Development	210	0.1	50.0
Transcription	7,854	2.6	3.0
Engineering Dev't	9,576	3.2	0.0
Total	303,450	100.00	19.0

The year 2009 turned out to be more progressive for the Contact Center, Back Office Sub-sectors, and the Game Development Sub-sector. But for most of the other sub-sectors, there has been negative growth particularly in the Software Development sub-sector. This reflects the effects of the 2008 financial meltdown of the US economy on the industry.

ii. Average Salary per occupation

Table 5. Average Monthly Salary (in PHP)

IT Job Function	NCR	Regional/ Provincial
Data Encoder/ Transcriptionist	11,280.5	10,416
Call Center Agent/ Customer Service Representative	14,766.5	11,844
Team Leader/Technician	16,940	13,776
Analyst/Software Developer	20,342	16,800
MIS/Systems Administrator	209,54.5	17,346
Manager/Department Head	466,58.5	40,194

Salaries in the industry vary greatly and the figures listed on Table 4 only illustrate averages. Other than this, there are not many available data on wages in the Animation and Game Development industries since they are relatively small sub-sectors still growing.

C. Training and Advancement

Most IT-BPO companies provide training for their employees particularly that of computer proficiency training since all occupations are heavily dependent on all kinds of computer equipment, applications and processes. Almost all business, artistic and operational processes are facilitated by software (programming, graphic design, composition, communication and networking). Companies may also provide for training on communication and interpersonal skills as well as proficiency in both written and verbal English as almost all (except in transcription and programming) occupations of the IT-BPO industry involve working in teams; relating to customers and coordinating with several other stages in the operations of the sub-sectors.

Most experience and knowledge are derived by taking short courses often not provided by companies. These short courses may involve proficiency in specific computer software, filming, video editing, fine arts, and advertising.

Most advancement in the industry involves going up in terms of rank, nature or responsibilities of the various occupations. An entry-level animator may advance to a junior animator, senior animator, and after years of experience may progress to become assistance editors or graphic directors. A game designer, for example, after acquiring relevant experience working on big games could eventually hire their own crew and construct their own game as a subsidiary of the previous big company. Other than this, specializing and understanding the business aspects of their sub-sectors, there are large prospects for entrepreneurship where they may engage in creating their own brand in the sector.

D. Specific Occupations

Contact Centers

Occupations in the contact center sub-sector include call center agents and team leaders or supervisors. Call centers hire employees whose primary job is to take calls and assist the customers. Call center agents render support to customers one after the other.

Call center employees are structured in a multi-tier support system to efficiently manage the customers' needs. The first tier is composed of telephone operators who will answer a customer's call and give general information. Should the customer need further assistance, the second tier from a

specific department required by the nature of the assistance will handle the phone call. The third tier is composed of highly skilled technical support staff who are either product engineers or product developers.

Technical support, also referred to as tech support of the call centers provides assistance to users of technology products (e.g. cellular phones, computers, software products, or other electronic or mechanical products). Tech support helps the customers to resolve specific problems about the product which maybe through telephone, email, or website. Technical support is also structured into tiers. The tiers depend on the business' need to support the clients, but commonly there are three tiers. Tier 1 or Level 1 technical support provides basic customer concerns. It is also known as the first-line support, support line 1, or front-end support. Tier 2 or Level 2 technical staff are more experienced staff on a particular product. It is also known as administrative level support or support line 2. These staff can solve basic technical problems and validate the concern of complex issues. Tier 3 or Level 3 is the highest support in a three-tiered technical support model. These staff are addressing the most difficult or advanced concerns of the clients. Tier 4 or Level 4 (not commonly used) personnel resolve the intensification point beyond the organization.

Occupation: Call Center Agents: Technical Support Representative/Customer Representative	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - <i>Customer Service Representative:</i> provide excellent customer service - <i>Customer Care Representative:</i> Maintain the goodwill between the business organization and its customers by answering questions,

	<p>solving problems, and providing advice or assistance in utilizing the goods or services of the organization</p> <ul style="list-style-type: none"> - <i>Technical Support Representative:</i> Maintain the goodwill between the business organization and its customers by answering questions, solving problems, and providing advice or assistance in utilizing the goods or services of the organization, as well as assist in incoming calls and troubleshooting. - Answer inbound calls as well as assist customers who have specific inquiries, complaints, or service problems either through face-to-face, electronic, or telephone contact. - Advertising of products and services offered by the organization - Updating databases on existing and prospective customer status for company records - Providing feedback on the effectiveness and soundness of policies and procedures of the customer service department - Facilitating the collected competitive information to monitor business opportunities and trends
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Minimal educational requirement: High School (Secondary Education) Diploma - Preferred educational requirement: 2-4 years of college education (any course, preferably IT-related courses) - English proficiency; good social, verbal and communication skills, fast

	<p>and correct typing, good grammar and sentence construction</p> <ul style="list-style-type: none"> - Pleasant and friendly mannerism. Respectful, sound judgmental capabilities (especially in managing difficult customer situations), ability to respond promptly, good telephone etiquette - Basic computer knowledge/technological skills: MS Office, search tools, browsers and email features - Quick recognition of customer temperament (particularly disgruntled customers) - Team player, open-minded
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Contractual - Project-based
<i>Working Environment</i>	<ul style="list-style-type: none"> - Often in clean, comfortable offices - Each agent is given his own workspace which includes: a computer, telephone set, headset connected to a telecom switch - Hazards: dangers associated with nighttime activities
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day - Shifts vary: morning shift (8am-5pm), afternoon shift (4pm-1am), graveyard shift (10pm-7am)
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - English Proficiency training - People Management Development - Quality Assurance Training - Business Development
<i>Salary Range</i>	<ul style="list-style-type: none"> - Basic: 15,000 to 25,000 PHP or 300 to 500 USD - Performance attendance bonuses, commission, comprehensive medical benefits, extensive career growth

	<ul style="list-style-type: none"> - Customer Service Rep: 14000-17000+2000+20%+great benefits and incentives - Easy Technical Support: 13000-14500basic + 2500 allowance+20% + great benefits and incentives - Customer Care Agents: 18000-21000 + 3000 + 20% - *Percentages pertain to commission
<i>Prospects</i>	<ul style="list-style-type: none"> - Demand for this occupation will increase in the future especially since the services provided by contact centers are essential to the operations of companies.

Occupation: Outbound Sales Specialist	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Calls prospective customers to explain type of service or product offered - Responsible for initiating, documenting and handling product/service knowledge and the ability to effectively demonstrate/motivate and educate customers - Ability to identify, qualify and create sales/upgrade sales opportunities, match product features and benefits to customers needs and effectively close a sale
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Candidates must possess at least Vocational Diploma/short course certificate or bachelor's/college degree in any field - Above average English communication skills - Excellent negotiating, customer

	<p>service and interpersonal skills</p> <ul style="list-style-type: none"> - At least 6 months' outbound sales experience is required ; experience in handling international telecommunications is a plus - Amenable to work on a graveyard, holidays, weekends, shifting schedule
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Contractual - Project-based
<i>Working Environment</i>	<ul style="list-style-type: none"> - Often in clean, comfortable offices - Each agent is given his own workspace which includes: a computer, telephone set, headset connected to a telecom switch - Hazards: dangers associated with nighttime activities
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day - Shifts vary: morning shift (8am-5pm), afternoon shift (4pm-1am), graveyard shift (10pm-7am)
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - English Proficiency training - People Management Development - Quality Assurance Training - Business Development
<i>Salary Range</i>	<ul style="list-style-type: none"> - Basic: 15,000 to 25,000 PHP or 300 to 500 USD - Performance attendance bonuses, commission, comprehensive medical benefits, extensive career growth - Customer Service Rep: 14000-17000+2000+20%+great benefits and incentives - Easy Technical Support: 13000-14500basic + 2500 allowance+20% + great benefits and incentives - Customer Care Agents: 18000-21000 + 3000 + 20% - *Percentages pertain to commission

<i>Prospects</i>	<ul style="list-style-type: none"> - Demand for this occupation will increase in the future especially since the services provided by contact centers are essential to the operations of companies.
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Occupation: Call Center Team Leader/Supervisor	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Basically same as call center agents - Organizing, planning, directing and monitoring the daily activities concerned with the call center's operation - Managing and directing the daily activities of call center agents and telephone operators - Attending, following up and resolving customer complaints and queries - Ensuring development of team members and evaluates their performance - Updating databases, organizing equipment maintenance activities, replenishing supplies and materials - Preparing and directing schedules, monitors attendance and scheduling breaks and shifts - Ensuring compliance to organizational policies - Liaising with other supervisors/team leaders, operatives and third parties to gather information and resolve issues - Maintaining up-to-date information on industry developments - Setting and maintaining quotas for volume of activities
<i>Educational and Basic</i>	<ul style="list-style-type: none"> - Minimum: 2-4 years college education - Preferred: Bachelor's or Associates

<p><i>Requirements, Competencies and Personal Qualities</i></p>	<p>degree from an accredited institution or any IT-related course</p> <ul style="list-style-type: none"> - Depending on the call center, requirements may vary. Degrees in business management, finance and accounting, languages, computer science, chemical and physical sciences, and engineering or mechanical engineering, may improve chances of hiring in specialist employers - Substantial experience in call center activities - Leadership; Ability to work with, inspire and support other people - Good interpersonal and people, communication, and problem-solving skills - Ability to plan efficiently and effectively and prioritize work - Maintain composure under pressure - Good decision-making - Confident, excellent telephone manner
<p><i>Tenure</i></p>	<ul style="list-style-type: none"> - (Usually) Permanent
<p><i>Working Environment</i></p>	<ul style="list-style-type: none"> - Often in clean, comfortable offices - A call center supervisor is given a special station that is able to monitor the computers of his assigned members. - Hazards: dangers associated with nighttime activities
<p><i>Working Hours</i></p>	<ul style="list-style-type: none"> - 8 hours per day - Shifts vary: morning shift (8am-5pm), afternoon shift (4pm-1am), graveyard shift (10pm-7am)
<p><i>Advancement and Training</i></p>	<ul style="list-style-type: none"> - Training for effective control of inbound and outbound calls

	<ul style="list-style-type: none"> - Training for planning development, resource allocation, control, staffing issues and budgeting. - Training for business strategy and performance management (staff morale, working conditions, technical development and awareness) - Training for legislative, cultural, regulatory, and human resource issues - Prior to the supervisor role, graduates may gain relevant experience in sales and marketing - Outbound call centers have high staff turnover implying quicker promotion opportunities - Progression to larger call centers or specializing in certain aspects of call center management (HRD, developing customer service focus, report writing and analysis) - Working abroad
<i>Salary Range</i>	<ul style="list-style-type: none"> - 30,000 to 40,000 PHP or may vary - Team Leaders: 550 to 700 USD, Project Managers or Assistant Managers: 900 to 1400 USD, Managers: 1500 to 2500 USD.
<i>Prospects</i>	<ul style="list-style-type: none"> - Demand for this occupation will increase in the future especially since the services provided by contact centers are essential to the operations of companies.

Back Office/KPO

Under the Back Office and KPO sub-sector, there are several services rendered such as

market research, investment research, legal processes, patent research services, and business operations support. These types of services fall under a general category of Consultants and that major umbrella represents the bulk of the services rendered in KPO. As for Back Offices, the majority of business processes outsourced by companies is that of accountants and bookkeepers; the two focused occupations for back offices.

Occupation: Consultants (Market/Business/Investment Researchers, Data Analytics)	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - The services rendered by consultants are quite similar in a sense that they provide business with knowledge-intensive business processes that require significant domain expertise, analytic and research skills, and judgment and decision-making capabilities. - The nature of these research-based services differ with the field they specialize in (management, business, finance, marketing, advertising, sales, legal, human resource development etc) - Aims to improve the prevalent system in any domain by identifying rooms for improvement and policies to cater those improvements - In general, consultants provide research, data gathering, and analyzing trends in business finance etc - In management, they give advice depending on the demand of the

	<p>organization: business strategy, marketing, human resources, financial and management controls, as well as conducting workshops and focus groups.</p> <ul style="list-style-type: none"> - In business, they analyze, plan, implement and evaluate projects of the company, as well as suggest policies to develop products or processes in operations - In finance, they examine financial statements of the company, evaluate investment opportunities, provide budget allocation schemes, and fund raising. - In legal aspects, they help reach certain legal goals, and solve legal issues, although is not the same with company lawyers. - In marketing, they provide market research, implements, manages, evaluates and develops the company's portfolio for marketing processes, evaluates and develops marketing strategy with sales and product teams, organizes marketing events like press releases and conferences, and reviews branding and positioning of company ads. - In human resources, they keep track of vacancies in companies, interview, test and eventually screen and evaluate job seekers, match candidates to job vacancies, as well as develop training for different competencies of existing employees
<i>Educational and Basic</i>	<ul style="list-style-type: none"> - Minimal: High school diploma and bachelor's degree in the related field

<p><i>Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Some consultants must have Masteral degrees or MBAs in order to be hired by very specialized consultancy firms - Extensive experience in research, data gathering, or relevant work experience in the related processes of the field - Updated in the developments of respective fields in management, business, finance, legal issues, marketing and human resources - Must have good communication and people skills in both written, verbal and electronic contact, as well as good negotiation skills - Technology-oriented in terms of the use of computers and communication advancements - Good leadership skills and maintain composure under pressure
<p><i>Tenure</i></p>	<ul style="list-style-type: none"> - (Usually) Project-based/Contractual with regard to outsourcing companies - Permanent in consultancy firms - Some may engage this full time in consultancy firms, while others may engage in consultancy part time while working in other institutions (like the academe)
<p><i>Working Environment</i></p>	<ul style="list-style-type: none"> - Most often, consultants work in safe, comfortable offices where they have access to the conventional office supplies and equipment - There is the occasional field work especially when there is a need to visit the outsourcing company
<p><i>Working Hours</i></p>	<ul style="list-style-type: none"> - (Usually) 8 hours per day - (For part timers) Flexible time, where consultants may do their work in their off time

<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Consultants, especially when working with only their bachelor degrees, need to take up graduate studies or short courses to complement the needs of the companies that hire them - When seen to exhibit exemplary performance, companies may offer them permanent job positions in their respective departments.
<i>Salary Range</i>	<ul style="list-style-type: none"> - Varies greatly depending on the field of expertise but averages around 200 to 2500 USD or 8,000 to 100,000 PHP monthly
<i>Prospects</i>	<ul style="list-style-type: none"> - This is a very important occupation in the operations of a company, particularly for the company's R&D. Firms frequently outsource their research aside from employing their own so the need for consultants will remain stable in the future.

Occupation: Accounts: Accountants, Bookkeepers	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Generally, accountants have primary responsibility for keeping the financial records, tax payments, overseeing and approving the use of funds. - Accountants are the generic occupation but the services they render may vary according to the department they may be part of: accounting (clerks, payables, receivables, cost, purchasing, bookkeeping, cash management), audit and assurance, billing, credit and collections, finance (financial analysts, planning, finance reporting), internal audit, payroll, tax (accountants and analysts), and treasury (treasury analysts)

	<ul style="list-style-type: none"> - Prepare, examine, and analyze accounting records, financial statements, and other financial reports to assess accuracy, completeness, and conformance to reporting and procedural standards - Compute taxes owed and prepare tax returns, ensuring compliance with payment, reporting and other tax requirements - Analyze business operations, trends, costs, revenues, financial commitments, and obligations, to project future revenues and expenses or to provide advice - Develop, maintain, and analyze budgets, preparing periodic reports that compare budgeted costs to actual costs - Appraise, evaluate, and inventory real property and equipment, recording information such as the property's description, value, and location
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Minimum: Bachelor's Degree in Accountancy - Preferred: Master's Degree and Board Passer (Certified Public Accountant) - (For Bookkeepers) Usually, 1 year experience in General Accounting and Bookkeeping: preparation of financial reports and handling bank transactions - Good oral and communication skills, English proficiency both verbal and written - Extremely flexible, can work with people of all levels of an organization - Excellent mathematical and analytical skills - Maintains composure under pressure

	<ul style="list-style-type: none"> - Familiarity with computer applications and necessary skills: MS Excel, typing etc
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Permanent if part of accountancy/bookkeeping firms - Outsourced with regard to outsourcing companies
<i>Working Environment</i>	<ul style="list-style-type: none"> - Safe, clean, comfortable offices where a workstation is given to bookkeepers/accountants which include their own computer, supplies, materials etc.
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day, 5 days a week (may change accordingly with the company)
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Bookkeepers may advance to auditors or accountants after gaining experience - Most companies require that account employees are CPA board passers - Accountants may engage in more specific careers related to accountancy, for example, they may go into law as corporate lawyers, or as forensic accountants. - Given a bachelor's degree, and passing the CPA board, the bookkeeper/accountant may work abroad
<i>Salary Range</i>	<ul style="list-style-type: none"> - Philippines: 8,500 to 16,500 PHP monthly - Overseas: around 44,000USD, or 184,000 PHP monthly
<i>Prospects</i>	<ul style="list-style-type: none"> - These occupations will remain in-demand especially since the accounting and the maintenance of records is important to the financial operations of any company.

Software Development

Under the Software Development sub-sector, the most concentrated occupation is the Software Developer, but the IT-oriented nature of the sub-sector extends to other occupations as well. Other occupations such as Web Developers, Network Managers and Systems Analysts also fall under Software Development and these occupations are closely tied to businesses and their operations.

Occupation: Software Developer/Engineer/Programmer	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none">- Software “Developer”, “Engineer” and “Programmers” are actually three different occupations but basically fall under the same category of designing software, developing/writing/programming it, and testing it according to the software development life cycle.- “Programmers” are the simplest and the most down-level occupation among the three which focuses only on writing codes (attached with different programming languages) in software development. Fresh graduates are usually employed as programmers.- “Software developers” is the formal title for this occupation in the sub-sector. They are basically programmers in the same sense as “programmers” in the software development process (design, development, testing and evaluation) but they have developed a specialization in a certain field through project experience (developing accounting software, econometric software etc).

	<ul style="list-style-type: none"> - “Software engineers” is a debated title. They are known by the general public as programmers that do a formal approach by applying the principles of computer science and mathematical analysis to the design, development, testing and evaluation of the software and systems that make computers work. This is a heavily debated title since despite their name, they are not “engineers” and very few software engineers have engineering experience. - Software developers are basically responsible for the entire lifecycle software development process but most often companies break this down into smaller groups to focus on specific processes. - Evaluate and identify new technologies for implementation - Designing, coding and debugging applications in various software languages as well as software analysis, code analysis, requirements analysis, software review, identification of code metrics, system risk analysis, and software reliability analysis. - Software testing and evaluation
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Degree in a 4-year IT-related course, preferably Computer Science, Computer Engineering, or Information Technology Management. - Companies will, on occasion, hire self-taught software developers, but this is a rarity. - Proficiency in more advance computer

	<p>applications, particularly programming languages such as: C, C++, Java, .NET, Python, BEA WebLogic, WebSphere, J2EE, JBoss, ADO, Perl, HTML, JSP, JavaScript, Web services, SOAP, XML, ASP, JSP, PHP, MySQL, SQL Server, Oracle, UNIX, Linux, Redhat Linux, STL, XSLT, OWL, AJAX, J2EE, J2ME, J2SE, Sun Solaris</p>
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Full-time with respect to software development firms - Individuals may also choose to be freelancers. - Outsourced. Companies outsource software developers according to the needs of the company - Project-based. Companies may also hire software developers for certain projects
<i>Working Environment</i>	<ul style="list-style-type: none"> - Usually a safe, comfortable, ergonomic office where software developers are given their own workspace including their own computers - Hazards for this occupation entail conditions induced by very, very long hours in front of the computer, as well as the occasional all-nighter in accomplishing projects
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8-hour/day 5days/week although this may vary with respect to the company - Flexible time. Freelancers avail of this when hired.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Training with various software, some of which are not taught in universities but are preferences of companies. - Software developers have high entrepreneurial potential and can have

	<p>their own software development firm.</p> <ul style="list-style-type: none"> - High chance of working abroad due to the nature of their work.
<i>Salary Range</i>	<ul style="list-style-type: none"> - Philippines: Software Developer: 15,000 to 20,000 PHP depending on years of experience and region; Software Engineer: 15,000 to 30,000 PHP depending on rank, experience and region. - Overseas: Software Developer: 2,000 to 4,000US\$ depending on rank, experience and country; Software Engineer: 1,900 to 4,500 USD depending on rank, experience and country.
<i>Prospects</i>	<ul style="list-style-type: none"> - Given the dynamism of the industry, demand for this occupation will grow especially since this is one of the higher tiers among the occupations of the industry. The software engineer is the one that will grow the most here in the sub-sector as it provides technological innovation and advancement.

Occupation: Web Developer/Designer	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - The titles web developer and web designer have been used interchangeably. They are, however, different in some aspects. - “Web designers” refer to those who design a web site or web page layout and include the graphical elements of a page. These graphics are designed with programs such as Adobe Photoshop. These do not deal with coding, but simply the content that is

	<p>coded.</p> <ul style="list-style-type: none"> - “Web developers” refer to those who program or construct the “back end” of a website. These focus on the structure of a website, displaying the information required by visitors, making sure links are working as they should, and the correct format that the information should be presented. These kinds of programming need scripting languages like PHP, ASP, ASP NET and Coldfusion. - Coordinate with clients on how websites should look like, how links should function, and how information is displayed. Usually, designers make websites very attractive to target customers. - Develop new web applications needed in a company’s website. - Maintain and enhance existing Web applications and make sure that all internal systems are integrated. - Conduct tests and evaluation of web sites. - Design and implement user-driven templates, databases and interfaces for easy use.
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Bachelor degree in computer science or any Information and Communications Technology Management course - Proficiency in programming and web designing software: ColdFusion 7+, SQL, PHP, ASP, ASP NET. - Experience or proficiency in flash animation - Proficient with internet related

	<p>applications such as email, FTP clients and Web Browsers.</p> <ul style="list-style-type: none"> - Ability to communicate and teach non-technical users - Excellent oral and written communication skills - Strong Attention to Detail - Able to work independently and efficiently to meet deadlines - Able to promptly reply to support-related email, calls and other electronic communications
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Full-time with regards to working with a web designing firm - Outsourced/Project-based. Outsourcing companies usually hire web designing firms to design websites for their company or for certain projects - Some may also choose to be freelancers
<i>Working Environment</i>	<ul style="list-style-type: none"> - Web developers usually work in office environments where computers and relatively advanced electronic equipment are available to them for their work. - The greatest hazard to this occupation entails the same hazards of being exposed to long hours on the computer (usually body aches and eye strain).
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8 hours per day, 5 days a week in web designing firms, but varies with companies. - Work hours per day usually increase depending on deadlines of projects - Freelancers often work in flexible time.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Web developers, when outsourced, have high chance of being absorbed into companies

	- High chance of working abroad.
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD depending on position and experience.
<i>Prospects</i>	- Given the dynamism of the industry, demand for this occupation will grow especially since this is one of the higher tiers among the occupations of the industry

Occupation: Network Manager/Administrator	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - The network manager provides company-oriented service, wherein all his services are directed towards management of the local area network (LAN) of the company he works for. - Assess and recommend the type of hardware and suitable software for the needs of the company for purchasing. - Responsible for installing and maintaining a company's computer network (includes access to files, email, internet and security systems). - Training staff, provide technical support, support staff queries, monitoring system usage, setting up user accounts and managing back up. - Provide technical support by identifying problems, evaluating, and troubleshooting. - Maintaining and monitoring the system server, ensuring virus protection of all computers - Development of disaster recovery plans to make sure files are secure - Planning and implementing developments for the sustainability of the company's network.

<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Bachelor degree in Computer Science or Information and Communication Technology Management - Advanced knowledge of computer applications and systems - Extensive knowledge of computer networking systems and languages such as UNIX, Novell, VMS, or similar computer networks such as LAN and WAN, as well as knowledge of all peripheral equipment, products and protocols. - Years of experience as a network engineer, IT support technician or IT manager. - Aside from computer skills, interpersonal and good communication skills are needed - Problem-solving and troubleshooting skills need to be very, very proficient - Sense of organization; flexible in both working alone and working in a team - General understanding of business and related concepts
<p><i>Tenure</i></p>	<ul style="list-style-type: none"> - (Usually) Full-time with respect to Network companies - Contractual with respect to outsourcing company - Freelance
<p><i>Working Environment</i></p>	<ul style="list-style-type: none"> - Working conditions are normal for an office environment. Work requires extensive work using a computer. Responsibilities may require evening and weekend work in response to needs of the systems being supported. - Hazards primarily include the exposure to risks of prolonged periods in front of computers, physical, emotional and

	mental stress, and prolonged, irregular hours.
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 37 to 40 hours per week, which may vary according to company policy - It is possible that the network manager may exceed the usual number of hours per week as new systems are installed and the occasional server maintenance.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - In-house training for computer and IT-related skills, keeping up with latest technological developments - Training with respect to the use of programming languages and software - Possibility of absorption to hiring companies - Fast promotion to senior positions - May choose to enter different specialized fields such as computer manufacturing, installation and servicing of computer networks, project management, business analysis systems architecture and even freelance consultancy. - Working Abroad
<i>Salary Range</i>	<ul style="list-style-type: none"> - Philippines: 14,000 to 25,000 PHP per month depending on rank and experience - Overseas: 2,000 to 4,200 USD depending on country, rank and experience
<i>Prospects</i>	<ul style="list-style-type: none"> - Given the dynamism of the industry, demand for this occupation will grow especially since this is one of the higher tiers among the occupations of the industry

Occupation: Systems/Business Analysts/IT Consultants	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Designs new IT Solutions to improve business efficiency and productivity of external and internal clients. - Responsible for designing, developing and configuring an information system and at the end of his analysis he has to specify the requirements for creating the system. Also, he discusses all the requirements and other aspects with the management and other related personnel - Provides outline designs and costing of new IT systems, specifying the operations performed, data specification/formatting - Analyzes existing business models and flows of data then designs an appropriate IT solution that is productive and cost-efficient. - Research, plan, install, configure, troubleshoot, maintain and upgrade/modify operating systems, hardware and software interfaces. - Troubleshoot and resolve hardware, software and connectivity problems. - Conduct technical research on system upgrades to determine feasibility, cost, time required, and compatibility with current system
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Minimum: Bachelor's Degree in Computer Science or Information and Communication Technology Management - Preferred: Background or experience in accounting and business management, MBA. - Extensive computer systems

	<p>knowledge: hardware, software and programming.</p> <ul style="list-style-type: none"> - Mastery in programming, and particular programs such as: SQL, Visual Basic, C++, Java, Unified Modeling Language (UML), SAP business software applications - Excellent troubleshooting and problem-solving capabilities, attention to detail, and keeping composure under pressure. - Solid foundations/background on business or disciplines related to field of choice. - Good interpersonal skills and flexible with regard to working alone and working with a team.
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Full-time with respect to outsourcing companies
<i>Working Environment</i>	<ul style="list-style-type: none"> - Either working alone or working in teams - Most of the time, they are in offices of their own, or those of their clients, observing systems they work with. - Extensive work using a computer
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 37-40 hours per week depending on the hiring company - May have overtime during weekends to meet deadlines - Flexible work patterns apply when working at home
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Training for proficiency in programming software and computer systems, as well as business skills. - On a lesser extent, training to develop personal skills, communication skills and presentational abilities. - Fast advancement to senior analyst

	<p>positions</p> <ul style="list-style-type: none"> - May advance to several paths: consultancy, specific technical expertise (systems/technical architecture), project management, sales and account management, strategic business directions - Large potential of working abroad.
<i>Salary Range</i>	<ul style="list-style-type: none"> - Philippines: 11,500 to 16,000 PHP monthly depending on rank, experience and company - Overseas: 2,700 to 4,750 USD monthly depending on rank, company, industry and country
<i>Prospects</i>	<ul style="list-style-type: none"> - Given the dynamism of the industry, demand for this occupation will grow especially since this is one of the higher tiers among the occupations of the industry

Animation

In the Animation sub-sector, there is basically only one occupation, an Animator. What vary are the processes that an animator does. In the Pre-Production stage, the Concept Artist develops the story boards and writing scripts. The Production stage basically has Artists who may be involved in 2D or 3D art. Post-Production, on the other hand, involved Editors who edit videos and add visual effects particularly in movies.

Occupation: Pre-Production: Concept Artists, Story Board Artists and Script Writers	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - <i>Concept Artist:</i> artist who creates visual concepts that represent ideas of a production. Environments, color

	<p>schemes, characters and backgrounds are some of the things that a concept artist is responsible for creating. Concept artists typically work in a movie studio or computer gaming environment and often work alongside art directors and graphic designers, among others, as part of a development team.</p> <ul style="list-style-type: none">- <i>Storyboard Artist</i>: draws out various aspects of the scenes of the production before the production artists actually draw, model and compose the scene. This allows the production artists to have a visual idea of what the director wants in the scene before the characters, backgrounds and textures are designed.- <i>Script Writer</i>: prepare scripts, dialogues and conversations for the production of projects that are usually in TV shows, films, commercials and even motion pictures.- Responsible for developing plans, visual concepts and narratives of ideas for movies, advertisements, animated films and games.- Uses the principles of graphics and design to create and design environments, backgrounds, characters and color schemes for movies, games or video productions.- Entails writing out the “blueprints” of an animation, a movie, a game or a video production.- Involves brainstorming, collaboration and revision of the stories or concepts of productions, often requiring the
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	<p>development of story boards and scripts to test ideas by getting a feel for the visual elements, conversation flow, plot development etc.</p> <ul style="list-style-type: none"> - These artists may also be part of the actual production and post-production of movies and games.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Bachelor's degree in Multimedia Arts, Fine Arts, Graphic Design, and Computer Science - Proficiency in both verbal and written English - Excellent writing, communication, and persuasion skills. A highly-creative imagination is needed for the design of concepts story and feel. - Excellent management skills - Requires a mastery or at least an understanding of highly advanced computer equipment, applications and processes, particularly in graphic design.
<i>Tenure</i>	<ul style="list-style-type: none"> - Permanent. This occupation is vital in the whole animation process since it oversees almost all stages of a production.
<i>Working Environment</i>	<ul style="list-style-type: none"> - Concept Artists primarily work in offices, studios and laboratories that contain computers, drawing boards and artistic equipment to facilitate their development of concepts. - Hazards entail risks brought by prolonged hours in front of the computer
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8 hours per day, but most often working hours are flexible since inspiration and storytelling can happen almost anywhere.

<p><i>Advancement and Training</i></p>	<ul style="list-style-type: none"> - The best training for entry-level employees to the animation industry would be “Learning by Looking”. A combination of observing experienced professionals and experimenting with your own work to develop the required technical and creative skills - Concept artists are trained to improve their creativity since this is a necessary talent in the business of animation. - Training with respect to Advanced Computer Applications particularly in 3D design, animation, and sound designing. - Management training is also given to concept artists as their occupation oversees other animation processes - Potential for working abroad and big animation companies
<p><i>Salary Range</i></p>	<ul style="list-style-type: none"> - 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<p><i>Prospects</i></p>	<ul style="list-style-type: none"> - This occupation is not only part of the IT-BPO industry, but is also part of another growing industry, the Creative Industry. Demand for this job is not so big now especially for animation production companies, but when the creative industry becomes more defined and developed (in terms of law), there would be better absorption.

<p>Occupation: Production (2D and 3D)</p>	
<p><i>Job Description and Responsibilities</i></p>	<ul style="list-style-type: none"> - Animators are responsible for producing multiple images called frames, which when sequenced together rapidly create an illusion of movement known as animation. The images can be made up of digital or

	<p>hand-drawn pictures, models or puppets.</p> <ul style="list-style-type: none"> - Animators basically serve the same functions: character design, background design, texture and animation, but differ only on how they do it: 2D and 3D. Although recently, several forms of animation has been developed, particularly stop-motion filming. - <i>Character animators</i> design the look of characters and at the same time produce how characters move, speak, react and show facial expressions. 2D animators creates sketches, artworks and illustrations. - <i>Background animators</i> design the environment as well as objects that characters thrive and interact in. - <i>Texture artists</i> add details to models created, particularly in 3D character and background animations to create a more realistic feel. - <i>(2D) Compositor</i>: integrates the various layers in a certain frame to include elements, characters, background, and computer-graphic elements - <i>(2D) Animator</i>: ensure that all drawings, background painting, efx elements and scene planning information an details for a scene are produced by animators to be filled with colors - <i>(3D) Object Modeler</i>: develop a mathematical, wire-frame representation of a 3D object using specialized computer software like Maya or 3ds Max. Forms the basic
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	<p>models of characters, backgrounds and objects.</p> <ul style="list-style-type: none"> - (3D) <i>Texturer</i>: adds details to models created by modelers, enhancing the quality and the life-likeness of the elements of the production. - (3D) <i>Rigger</i>: creates the “skeleton” for 3D models which enables movement of the various elements in the production - (3D) <i>Lighting</i>: lights and composes different shots within certain sequences to maintain continuity and quality of the scenes. - (3D) <i>Animator</i>: enables/programs the movement and interaction of the different elements of the production. - (3D) <i>Compositor</i>: integrates the various layers in frames as well as the interaction and movement of characters across different backgrounds and situations. - Animators give movement to characters, how they interact with the background and generally to facilitate the progression of the storyline. They are also responsible for developing the timing and pace of the movements of a character or object during the sequence of images (called the animatic) and ensuring they follow the soundtrack and audio requirements - Recording dialogue and working with editors to composite the various layers of animation (backgrounds, effects, characters and graphics)
<p><i>Educational and Basic Requirements,</i></p>	<ul style="list-style-type: none"> - Bachelor’s degree in Multimedia Arts, Fine Arts and up to some extent Computer Science

<p><i>Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Just like any artistic occupation, the main talent needed in the business is creativity not only in the concepts and design, but also with the use of available resources. - Animators need to have a mastery of artistic concepts, color theories, graphic compositions etc. - Need to have a mastery in using a range of materials, including modeling clay, plaster, oil paints, watercolors and acrylics - Need to have a mastery of using various computer applications for graphic design and technical software packages such as Flash, 3d studio max, Maya, Lightwave, Softimage and Cinema 4D - Flexible to work very long hours - Flexible to work alone and with other members of the animation team
<p><i>Tenure</i></p>	<ul style="list-style-type: none"> - (Usually) In-house animators work full-time on a production. - Sometimes, companies outsource and hire freelancers and animators from small time animating and advertising firms.
<p><i>Working Environment</i></p>	<ul style="list-style-type: none"> - Most often, animators work in studios that allow them to draw, design, compose, record sounds and dialogue as well as generate images in computers. Some freelancers have studio equipment set up in their homes. - Hazards include very, very long work hours depending on the stage of a project, as well as the risks of very, very long hours in front of computers.
<p><i>Working Hours</i></p>	<ul style="list-style-type: none"> - Most often, animators have flexible

	work hours, especially since the artistic stage of the animation process takes a very long time.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - The best training for entry-level employees to the animation industry would be “Learning by Looking”. A combination of observing experienced professionals and experimenting with your own work to develop the required technical and creative skills - Most animators learn the appropriate skills from classes and courses in arts, computer graphic design software, creativity and the like. - Some companies offer formal training packages that include taking a Masters in Animation. - There are several short courses for animation. - Most animators begin as studio runners and progress to higher 2D and 3D animation roles. - In 2D, the first progression is usually to key framers. - In 3D, animators progress from junior to senior animator and after years of experience may progress to being design managers or art directors. - High potential of working abroad.
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	- This occupation is not only part of the IT-BPO industry, but is also part of another growing industry, the Creative Industry. Demand for this job is not so big now especially for animation production companies, but when the creative industry becomes more

	defined and developed (in terms of law), there would be better absorption.
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Occupation: Post-Production: Editors and Visual Effects Artists	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - A film or video editor is responsible for assembling raw material into a finished product suitable for broadcasting. The material they work with may consist of raw camera footage, dialogue, sound effects, graphics and special effects. - This is a key role in the post-production process and the editor's skill can determine the quality and delivery of the final product. The editor may be part of a team and they will usually work closely with the director to achieve the desired end result - Editors take raw data and cut sequences to different angles at specific points in scenes, cueing in the start of musical scores and sound effects, placing appropriate visual effects to enhance the development of the plot, and at the same time, removing inconsistencies and unnecessary parts or accidents in the process of animation or filming. - Overseeing the quality and progress of audio and visual engineering and editing. - May work on a variety of productions: both animated and feature films, television programmes, music videos, corporate training videos, and advertisements.
<i>Educational and</i>	- Bachelor's degree on Multimedia Arts

<p><i>Basic Requirements, Competencies and Personal Qualities</i></p>	<p>or any similar studies on Communication and Media Issues, Photography, Film, Television, Fine Arts, Visual Arts, Information Technology, Computer Science, and Graphic Design.</p> <ul style="list-style-type: none"> - Extensive knowledge on film and animation elements - Mastery of computer applications specializing in post-production activities (Windows Movie Maker is not enough) - Pre-entry experience of working in a film/video production or a presentation of one's portfolio. - Has to have great communication and interpersonal skills, as well as proficiency in both verbal and written English since the job entails a lot of coordination with the other occupations in the animation process. - Flexible in working alone and with teams, particularly with the directors and animators
<p><i>Tenure</i></p>	<ul style="list-style-type: none"> - Mostly Freelance which are contractual when hired. - Short-term contracts for post-production studios, television companies and corporate employers
<p><i>Working Environment</i></p>	<ul style="list-style-type: none"> - Mostly offices and studios that contain computers with editing software, drawing boards, art materials and sound recording equipment. - Hazards include great exposure to the risks of very, very long hours in front of the computer, since most editing is done digitally.
<p><i>Working Hours</i></p>	<ul style="list-style-type: none"> - Flexible time is available to editors

	<p>especially since editing is a long process, so most editors take their work home.</p> <ul style="list-style-type: none"> - Particularly, freelancers often work at their homes where they have production studios set up.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - The best training for entry-level employees to the animation industry would be “Learning by Looking”. A combination of observing experienced professionals and experimenting with your own work to develop the required technical and creative skills - There are several short courses for animation, particularly courses in film, television, video, radio and interactive media - Training in graphic design, special effects and screen writing - Usually new entrants enter as runners or trainees and work up to junior and senior editing positions as they acquire experience, new skills and new techniques. There is a downside to this however as aspiring editors might have to work unpaid to gain experience - Freelancers progress from small productions to larger, more prestigious projects - High chance of working abroad or getting absorbed by bigger production companies.
<i>Salary Range</i>	<ul style="list-style-type: none"> - 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	<ul style="list-style-type: none"> - This occupation is not only part of the IT-BPO industry, but is also part of another growing industry, the Creative Industry. Demand for this job is not so

	big now especially for animation production companies, but when the creative industry becomes more defined and developed (in terms of law), there would be better absorption.
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Game Development

Similar to that of animators, there is basically one occupation in the Game Development sub-sector, a game developer. But the services of Game Developer differ for each step of the production process of games, and that is what creates variation in their responsibilities, requirements, advancement, and salary range. In the game development process, game developers may choose to be game designers, artists, programmers, sound designers, and testers. These services complete the production cycle of the development of a game. This guide will not discuss other occupations such as producers, lawyers, counselors, translators, distributors etc.

Occupation: Game Designer	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - A game designer is basically a writer, a storyteller. They write the “blueprint” of a game, deciding on the genre, the theme, mission, and rules of play. They may adapt existing stories, or they may develop stories of their own. This occupation is what gives direction to a team in developing a certain game. - Game designers have one objective: to engross players into the story, the feel and the gameplay. - Lead game designers are responsible

	<p>for the overall concept and feel of the game, while level designers work at smaller sections of the game. Writer-designers write the game text and dialogue, as well as manuals and walkthroughs.</p> <ul style="list-style-type: none"> - Involves brainstorming, collaboration and revision of a game's storyline. In line with this, designers write short scripts and narratives, and develop storyboards to describe the action and sequence of the game as well as to test their ideas. - Developing design documents, this lay out every aspect of the game: maps, plots, missions, puzzles, parameters and restrictions. They develop plot twists and let players choose the path that they want to take. Most often, the hardest part in game design is deciding which elements to leave out. - They determine the pace and rhythm of games, as repetitive game dynamics and rhythms could easily make players bored. - Designers closely work with the game developers of the other processes throughout the development of the game. Most often, designers are also artists, programmers or producers of the game.
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Minimum: Bachelor's degree in Literature, Art, and especially Computer Science. - Proficiency in verbal and written English. - Excellent writing, communication, and persuasion skills. A highly-creative

	<p>imagination is needed for the design of a game's concept, story and feel.</p> <ul style="list-style-type: none"> - Excellent management skills - Requires a mastery or at least an understanding of highly advanced computer equipment, applications and processes, particularly in computer programming and software design - Extensive experience in the game development industry, as there are no entry-level designers
<i>Tenure</i>	<ul style="list-style-type: none"> - Permanent. This occupation is a vital part of the game development process, and full-time attention is needed.
<i>Working Environment</i>	<ul style="list-style-type: none"> - Designers work in offices, in studios and laboratories which contain high-tech equipment for designing, drawing, programming the various elements of a game. - Hazards include long hours past the normal working hours, risks of prolonged exposure to computers, and possible irregularities in shifts/schedules.
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8 hours per day, but may vary depending on the stage of the game development process - Designers, along with the other occupations in game development, are subject to the possibility of working well into the night.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Game designers are trained to improve their creativity since this is a necessary talent in the business of game designing. - Training with respect to Advanced Computer Applications particularly in 3D design, programming, and sound

	<p>designing.</p> <ul style="list-style-type: none"> - Management training is also given to game designers as their occupation oversees other game development processes - Designers may advance to become game producers which encompasses all elements in the sub-sector, from the game development side, to the business side which entails market research, distribution and mostly “making profit”. - Very high chance of working abroad and in big gaming companies
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	- Demand for these Game Development occupations are rather small now, especially since the sub-sector is largely underdeveloped, but having large potential and large value added to a person’s skill, these occupations have many opportunities in other countries.

Occupation: Artist	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Game artists may vary in nature: they may be Concept Artists, 2D Animators or 3D Artists. - Concept Artists draw sketches and storyboards that illustrate the designers’ ideas. They animate/illustrate all the required animation/illustration of the design document. - 2D artists traditionally draw on paper, but with the recent advancements in technology, they now “draw” using computer applications. - 3D artists rely completely on software to

	<p>develop the computer-generated graphics (CGI) of games.</p> <ul style="list-style-type: none">- Artists may be one of three functions: character artists and animators, background modelers and texture artists (texturing is a process that is mostly used for 3D animation only).- Character artists design the main and side-, non-playable characters, and creatures of the game. And they are responsible for animating character “movements”. After drawing the basic design on paper, artists then build it in a computer using modeling software. What is important here is not only the movement of characters, but also their facial expressions and body language.- Background artists or modelers create the game settings, or rather the play ground of the characters. They build digital environments to match the ideas of the designers. They begin with drawing a sketch of those in the design document, and go through the whole process eventually designing the environment in modeling software or a “virtual movie set”. They are also responsible for developing a character’s interaction with the environment, as well as the lighting.- Texture artists add detail to the surface of 3D art. The previous two kinds of artists only “shape” settings and characters, whereas texture artists detail or “paint” the surface of the elements (add in detail to create a “brick” wall relative to a plain, colorless wall).
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	<ul style="list-style-type: none"> - Artists need to remember the graphic capabilities of software, since “too good” animation may slow down the game. The more complicated the image, the longer it takes to be rendered.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Minimum: Bachelor’s or Associates degree in Multimedia Arts, Fine Arts, Animation, or Industrial Design. - Mastery of Computer Graphic and Modeling Software is required - Understanding of mathematics (particularly geometry) is needed. - Primarily, artists need to be creative at the same time efficient. - They need to be able to communicate with designers and programmers as well.
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) In-house or full-time, especially for the really big game producers. - Project-based. Some artists are hired for the span of certain games only.
<i>Working Environment</i>	<ul style="list-style-type: none"> - More often, artists work in studios and laboratories that contain a lot of computers and high-tech equipment that facilitate animation. - Hazards include prolonged hours in front of the computer as well as long, sleepless nights especially when meeting the deadlines of producers.
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) flexible, yet very long hours depending on the stage of a game’s development
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Computer graphics training - Animation training - Graphic and Modeling Software training - Studies in drawing, painting, color

	<p>theory, sculpture and graphic design.</p> <ul style="list-style-type: none"> - Training for getting inspiration from various sources: nature, movies, comics, and fine art. - Very high chance of working abroad and in big gaming companies
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	- Demand for these Game Development occupations are rather small now, especially since the sub-sector is largely underdeveloped, but having large potential and large value added to a person's skill, these occupations have many opportunities in other countries.

Occupation: Sound Designer	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Responsible for composing the music and the sound in the game. - Works closely with designers to determine a certain feel or mood for parts of the game, and identifies popular musicians or movie scores that may be highly applicable to the game's theme. - Sound design is relatively important since it usually carries the player into the game, giving great appreciation to the lush environments that background artists creates, as well as gives characters a certain aura that personifies their qualities. Sounds and music most often evoke the emotions of players, and this is important especially in game design. - Sound Designers do not really know what characters are doing, so the music

	<p>or sounds they design should not be too overwhelming as to drown out dialogue or events.</p> <ul style="list-style-type: none"> - Sound Designers are responsible for the actual verbal dialogue, background music as well as sound effects (creaky floors, gunfire, crashes etc). - Responsible for recording different sounds and sound effects and editing or altering recordings (i.e. lower pitch, echo, sound loops) to make sounds appropriate to the game's requirements and settings. - Balances out realism with the entertainment value of exaggeration, routinely sweetening sound effects for dramatic effects.
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Bachelor's degree in Music and Computer Science. - Primarily, sound designers should be musically creative, should spend time listening to all types of music and usually needs to learn at least one instrument. - Extensive experience in audio engineering, recording sounds and dialogue, and mixing them to make them appropriate for the game's settings. - They need to have an understanding of computer hardware and software and their limitations since most sound effects are done through computer applications. - Should have good communication skills since most of the time they need to collaborate with big-time musicians as well as their own game-development

	team.
<i>Tenure</i>	- (Usually) In-house or full-time, especially in big game productions.
<i>Working Environment</i>	- They work in recording studios as well as laboratories which usually contain computers and sound recording devices. - Hazards include long hours of working, most often beyond the usual work hours.
<i>Working Hours</i>	- Flexible depending on the stage of the game development process.
<i>Advancement and Training</i>	- Training on Musical Expertise, Creativity and Composition - Study of Music Theory and especially composition. - Training to get an understanding of the various game development hardware and software. - Very high chance of working abroad and in big gaming companies
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	- Demand for these Game Development occupations are rather small now, especially since the sub-sector is largely underdeveloped, but having large potential and large value added to a person's skill, these occupations have many opportunities in other countries.

Occupation: Programmer	
<i>Job Description and Responsibilities</i>	- Basically responsible for planning and writing the video game software, turning ideas, art and music into a game that works.

	<ul style="list-style-type: none">- Responsible for translating events, occurrences and actions in the game into mathematical code and algorithms for computers. These include various physics that most games today exhibit (such as vehicle physics).- Control the speed and placement of art and sound, as well as properties of environments (i.e. low-gravity environments).- Balancing out the complexity of the code and the speed of the processing time so as to allow for additional space for graphics and sounds.- Programmers need to find a balance between the complexity and the flexibility of codes so as to facilitate easier editing without destroying the game completely.- There are several types of programmers: engine, artificial intelligence (AI), graphics, sound, and tool programmers.- Engine programmers write the software the actually makes the game run. Graphics engine programmers control how graphics are stored and reproduced by the computer to avoid “objects passing through one another”.- AI programmers write code to make computer-controlled characters act realistically. They set restrictions and rules to determine how characters react.- Graphics programmers refine playback animation.- Sound programmers improve the authenticity of the game by adding
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	<p>sounds to sound loops</p> <ul style="list-style-type: none"> - Tool programmers write software that is used by artists, designers and sound designers within the same company. Most of these software involve tools that convert art, sounds and game play that will work in the game's script.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Minimum: Bachelor's degree on Computer Science - As the specification changes, programmers need more advanced degrees. Developing AI requires a degree in AI programming - Mastery of all top programming languages is required. - Mastery of mathematical concepts and applications as they need to translate ideas into numerical equations, trigonometry, algebra, and analytical geometry. These competencies allow programmers to describe how objects in the game move through spaces and their properties. - Must be focused, with great attention to detail - Flexible in both working alone and with other team members. - Understanding in other non-computer related fields such as cognitive sciences and physics.
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) full-time especially in very big game productions.
<i>Working Environment</i>	<ul style="list-style-type: none"> - Programmers mostly work in offices and laboratories containing highly-advanced computers and equipment to facilitate the writing of game software. - Hazards include risks of being exposed to very, very long hours in front of the

	computer, as well as long hours working into the night depending on the stage of the project.
<i>Working Hours</i>	- (Usually) 8 hours per day but (often) they go beyond the normal working hours as the project reaches critical stages wherein programming is essential.
<i>Advancement and Training</i>	- Training with advanced programming languages is must - Mathematical training is also advised since this is the center of the programming discipline: converting ideas to mathematical equations for the computer. - Very high chance of working abroad and in big gaming companies
<i>Salary Range</i>	- 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	- Demand for these Game Development occupations are rather small now, especially since the sub-sector is largely underdeveloped, but having large potential and large value added to a person's skill, these occupations have many opportunities in other countries.

Occupation: Tester	
<i>Job Description and Responsibilities</i>	- Basically, testers “play games for a living”. - Testers usually search and identify errors in a game before these are shipped into stores - Testers provide feedback and criticism with regards to a game's system, gameplay, graphics, themes, stories, difficulty etc. - Most problems found are objects

	<p>passing through one another, faulty programming in sounds and graphics, levels that do not load or “hang”.</p> <ul style="list-style-type: none"> - Responsible for producing reports describing the problems that are found. - Games are tested methodically, where certain parts of the game are played repeatedly in order to identify glitches, and bugs. - Responsible for giving suggestions to designers, and programmers with regard to how games work.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - No specific college degree is required - It is a must that testers be expert game players in a variety of game genres. - They need to be able to communicate freely especially when writing reports to designers and programmers - Need to be patient, since even playing the fun games repetitively can start to feel like a job.
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Part-time since the testing procedure comes only after the “construction” of the game itself.
<i>Working Environment</i>	<ul style="list-style-type: none"> - Testers often work in laboratories where they play on consoles and the specific platform of the games. - Hazards include long hours in front of computers, digital screens etc.
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) Flexible depending on the arrangement of testers and the game design team.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - There is no specific training needed - There is usually no advancement for the game testers
<i>Salary Range</i>	<ul style="list-style-type: none"> - 12,600 to 84,000 PHP or 300 to 2,000 USD monthly
<i>Prospects</i>	<ul style="list-style-type: none"> - Demand for these Game Development

	<p>occupations are rather small now, especially since the sub-sector is largely underdeveloped, but having large potential and large value added to a person's skill, these occupations have many opportunities in other countries.</p>
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Transcription

Despite the variation of transcription jobs (medical, legal and other kinds of transcription), the focus in the IT-BPO industry is medical transcription. Other than this, the industry extends to Healthcare Information Management which is centered primarily on the medical secretary occupation.

Occupation: Medical Transcriptionist	
<p><i>Job Description and Responsibilities</i></p>	<ul style="list-style-type: none"> - Basically, the transcription jobs are special data entry jobs that entail the encoding of recorded speech. - Medical transcriptionists listen to dictated recordings made by physicians and other healthcare professionals and transcribe them into medical reports, correspondence and other administrative material. - Generally, they listen to recordings on a headset, using a foot pedal to pause the recording when necessary, and key the text into a personal computer or word processor, editing as necessary for grammar, clarity and cohesiveness. - Reports transcribed include: discharge summaries, medical history and physical examination reports, operative reports, consultation reports, autopsy reports, diagnostic-imaging studies, progress notes, and referral letters.

	<ul style="list-style-type: none"> - Translate medical jargon and abbreviations in to expanded forms and at the same time decide which information should be included or excluded from reports and identify mistakes in reports and check with doctors to obtain correct information - Managing medical record databases; provide data entry and data retrieval services as well as maintenance of patient records - Perform a variety of clerical and office tasks, such as handling incoming and outgoing mail, completing and submitting insurance claims, typing, filing, and operating office machines
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Completed postsecondary training in medical transcription courses which is offered by many technical/vocational schools, this entails completion of a 2-year associate degree or 1-year certificate program - When working abroad, may require certain certifications or credentials such as the Registered Medical Transcriptionist (RMT) and Certified Medical Transcriptionist (CMT) - Requires knowledge on anatomical, medicinal and other medical-related terminologies and fields. - English proficiency, both verbal and written. - Proficiency in computer applications especially word-processing software and the typing skill as most employers require a very small margin of error in encoding. - Normal hearing acuity and good

	listening skills.
<i>Tenure</i>	- (Usually) Full-time
<i>Working Environment</i>	<ul style="list-style-type: none"> - Transcriptionists work in comfortable office settings in hospitals, physicians' offices, transcription service offices, clinics, laboratories, medical libraries, government medical facilities, and even their own homes - Possible hazards involve sitting in front of the computer for long periods of time, exposed to radiation and the various conditions that may be induced by long hours in front of the computer, as well as wrist, back, neck or eye problems caused by strain and repetitive motions (i.e. carpal tunnel syndrome)
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8-10 hours per day for 5-6 days - May work in shifts - Flexible time when working at home
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Medical transcription training, including training in English and grammar, as well as knowledge in medical terminologies - With experience, can advance to supervisory positions, home-based work, editing, consulting and teaching. - Potential entrepreneurial capabilities (starting own MT company). - With additional education and training, can become medical records and health information technicians, medical coders and administrators
<i>Salary Range</i>	- Philippines: 8,000 to 15,000php depending on education attainment, experience and region.
<i>Prospects</i>	- This occupation does not really surface as a mainstream job since it is not a professional job, but it serves a very

	<p>important function in the operation of hospitals especially since the availability and quality of records are needed by doctors and practitioners so there will always be a need for these occupations that provide support services.</p>
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<p>Occupation: Medical Secretary (Healthcare Information Management)</p>	
<p><i>Job Description and Responsibilities</i></p>	<ul style="list-style-type: none"> - Performs secretarial and office tasks for Head Doctors or Medical Teams. - Making billing statements for patients - Compiling and recording medical charts and do reports. - Assist patients with their room assignment and other needs - Answers telephones, and directs calls to appropriate staff - Arranges hospital admissions for patients - Completes insurance and other claim forms - Interviews patients to complete documents, such as case histories and insurance forms - Maintains medical records, technical library and correspondence files - Operates office equipment such as voice mail messaging systems, and uses word processing, spreadsheet, and other software applications to prepare reports, invoices, financial statements, letters, case histories and medical records - Schedules and confirms patient diagnostic appointments, surgeries and medical consultations. - Transcribe recorded messages to and

<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<p>doctor's diagnosis to medical records</p> <ul style="list-style-type: none"> - Minimum: High School Diploma - Preferred: Graduate of B.S. Nursing, Practical Nursing, Medical Technology or other related medical courses - Some companies require a credible license or an internship with a reputable hospital. Preferably, 1-3 years experience as a medical secretary or a hospital clerk - Training on basic secretarial duties, medical care and other relevant medical trainings - Must have wide knowledge of a medical environment, medical and office equipment, and understanding of medical terminologies - Ability to do secretarial jobs such as bookkeeping, answering telephone calls and documenting medical files - Ability to transcribe recorded intern's medical diagnosis and encode it in a computer, as well as extensive knowledge on software applications such as word processing, spreadsheets, and database management - Must have active senses and quick attention. Discretion, good judgment, organizational or management ability, initiative, and the ability to work independently. - Knowledgeable in interviewing procedures - Good oral and communication techniques, coupled with proficiency in both verbal and written English. - Good customer service and
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	<p>interpersonal skills and can work well with others</p> <ul style="list-style-type: none"> - Must be reliable, have a sense of confidentiality of medical records, a keen interest in helping others.
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Full-time - Contractual
<i>Working Environment</i>	<ul style="list-style-type: none"> - Medical secretaries often work in office areas in hospitals, usually in clerical staff, bookkeeping, accounting office, laboratories and library. - Hazards are not as extreme as compared to IT-BPO jobs, their jobs are not as stressful because tasks are more on office works and not the hands on work of medical professionals
<i>Working Hours</i>	<ul style="list-style-type: none"> - (Usually) 8-10 hours daily - Medical secretaries work in shifts especially since doctors need healthcare information all-day, particularly in irregular hours
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Secretarial, medical and clerical training - Most advancements require further education as well as performance-based evaluation - Advancements include promotion to executive secretaries, or office managers, head clerks, and department supervisors. - Some medical secretaries can extend the range of their expertise to include medical transcription or any medical-related course
<i>Salary Range</i>	<ul style="list-style-type: none"> - Philippines: 8,000-18,000php per month - Overseas: 3,528USD per month
<i>Prospects</i>	<ul style="list-style-type: none"> - This occupation does not really surface as a mainstream job since it is not a professional job, but it serves a very

	important function in the operation of hospitals especially since the availability and quality of records are needed by doctors and practitioners so there will always be a need for these occupations that provide support services.
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Engineering Design

Occupations under Engineering Services include engineering and research and development services such as the design and development of engineering products, product testing and improvement, and pure and applied research.

Occupation: Civil Engineering Design (Team Lead and Junior Engineer)	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - In charge of the evaluation and checking of structural plans - Responsible for the inspection of tenant's structural works during fit-out/ renovation - Bid evaluation and inspection of structural/ civil work related projects, cost estimate and implementation.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Minimum: Bachelor's Degree in Engineering - Must be a licensed Civil Engineer - Must have experience in building construction, design, planning, cost estimate and analysis - A depth in CAD works is an advantage - Computer Literate - Knowledgeable in Civil 3D software
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Permanent - Some are project based

	<ul style="list-style-type: none"> - Outsourced with regard to outsourcing companies
<i>Working Environment</i>	<ul style="list-style-type: none"> - Engineers work at the office, the same with other BPO offices. - Engineers receive calls and emails for the assignments they need to work on. - Offices are well-lighted to aid the engineers in their designs. - Engineers work off site.
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day, 5 days a week (may change accordingly with the company) - Shifting schedule depending on the account
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Basic training is provided such as company profile, nature of work. - Additional seminars are provided depending on the company's specifications. - Civil Engineers in the long-run can be Civil Engineer Managers, where they become an overall head. In order to gain this position, the employee should acquire a masteral or/and doctorate degree.
<i>Salary Range</i>	<ul style="list-style-type: none"> - PhP 13,000 – PhP 21,000 plus incentives and benefits. - Increase in salary depends on the scheme of the company
<i>Prospects</i>	<ul style="list-style-type: none"> - Demand for civil engineers would continue to increase as the industry moves to a more specialized phase. - Demand for civil engineers in the Philippines would also increase due to Filipino's competency in the field and low cost of labor compare to foreign counterparts.

Occupation: Architectural Drafter	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Responsible for making detailed scale drawings used in construction - Draw building plans for office buildings, private homes, theaters, factories, and school buildings. - Used the sketches, notes, and other information provided by the architects, engineers and designers it to make drawings. - Drafters often work in the engineering, research, or development departments of large companies.
<i>Educational and Basic Requirements, Competencies and Personal Qualities</i>	<ul style="list-style-type: none"> - Minimal educational requirement: High School (Secondary Education) Diploma - Preferred educational requirement: 2-4 years of college education (with training in drafting) - Some knowledge in CAD systems and draft certification are advantage
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Permanent - Some are project based - Outsourced with regard to outsourcing companies
<i>Working Environment</i>	<ul style="list-style-type: none"> - The work area is usually clean, well-lighted, and well-ventilated - Drafters must sometimes work closely with architects or as part of a team of other drafters. - Drafters use computers or draw on slanted desks while sitting on stools. - Tracing and alterations are done on a glass table with a light built into it, called a light table. - Drafters who use CAD systems spend their days at the computer.
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day, 5 days a week (may change accordingly with the company)

	<ul style="list-style-type: none"> - Shifting schedule depending on the account
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Basic training is for provided such as company profile, nature of work. - Seminars and workshops on Architectural are provided especially when there are new advancements in the field. - Continuous seminars and workshops are provided to enhance the skills of the drafters.
<i>Salary Range</i>	<ul style="list-style-type: none"> - Php 13,000 – Php 21,000 plus incentives and benefits. - Increase in salary depends on the scheme of the company
<i>Prospects</i>	<ul style="list-style-type: none"> - Drafting job would provide increased employment for the Filipinos given that it only requires minimum educational attainment. - This occupation can also match the skilled undergraduates. - As the industry moves to a high-value added industry more jobs would be generated. Specifically, this occupation which provides support overseas would greatly benefit due to the industry expansion.

Occupation: CAD Operator	
<i>Job Description and Responsibilities</i>	<ul style="list-style-type: none"> - Computer Aided Design Operator or CAD Operators has a wide knowledge using computer software to create project designs. - CAD Operators are also needed in apparel industry, mechanical engineering, garden and landscape design, and lighting systems for public and private buildings

	<ul style="list-style-type: none"> - Provides design of the project in a short period of time - Convert sketches or specifications of the project or product from an architect, engineer, or other designer; into detailed CAD drawings - Prepare necessary drawings for biddings - Prepare Schemes - Prepare working drawings for approval
<p><i>Educational and Basic Requirements, Competencies and Personal Qualities</i></p>	<ul style="list-style-type: none"> - Minimum: Bachelor's Degree, preferable with a course on any of the following Architecture, Civil Engineering, Electrical Engineering, Electronics and Communication Engineering, or Computer Science - Training in multiple CAD programs and platforms, general computing theory and a variety of productivity applications. - Wide knowledge with the use of computer; - Proficient in latest AutoCAD and/or Micro station, Microsoft Office and Windows applications. - Ability to read and understand construction plans; - Knowledge in basic algebra and geometry which is used in calculating figures and amounts including the discounts, interest, commissions, proportions, percentages, area circumference and volume; - Can interpret instruction either written, oral, diagram, or schedule form; - Familiar with PTC Pro-Engineer (Pro-E Wildfire 1.0 or higher) and Autodesk Autocad (2000 or higher); experience with PTC Intralink (12.0 or

	higher).
<i>Tenure</i>	<ul style="list-style-type: none"> - (Usually) Permanent - Some are project based - Outsourced with regard to outsourcing companies
<i>Working Environment</i>	<ul style="list-style-type: none"> - CAD operators usually work in the office, the same with other BPO offices. - Operators receive their tasks from their supervisors.
<i>Working Hours</i>	<ul style="list-style-type: none"> - 8 hours per day, 5 days a week - May work more than 5 days a week if necessary.
<i>Advancement and Training</i>	<ul style="list-style-type: none"> - Basic training is for provided such as company profile, nature of work. - Seminars and workshops are provided especially when there are new advancements in the field. - Seminars and workshops are also provided to continuously enhance the skills of the CAD Operators.
<i>Salary Range</i>	<ul style="list-style-type: none"> - P15, 000 to P24,000 per month - entry level they also receive allowances and other incentives.
<i>Prospects</i>	<p>There is a growing demand for CAD Operators since architectural and engineering design mostly preferred detailed CAD drawings. They are needed in the following industries:</p> <ul style="list-style-type: none"> - Architecture - Industrial Design Engineering - Garden design and Construction - Building Engineering - Mechanical (MCAD) - Electronic and Electrical (ECAD) - Manufacturing process planning - Digital Circuit design - Software Applications

IV. Job Outlook and Prospects

a. Growth potentials

1. Dynamism of the Industry

The IT-BPO industry will be one of the most dynamic industries in the future because of the increasing share of the services sector in the economy of many countries. In addition, developments in ICT and enhanced competition will increase trade in services across the globe including BPO. In fact, the Global Outsourcing Industry is seen to grow by 9 percent to US\$ 464B in 2011 which is a 9.2% increase from 2010's US\$ 235B. Despite this, the Philippine IT-BPO industry will still need to compete against BPO giants such as China and India and other rising BPO-oriented countries in order to hold or even surpass its third place in the IT-BPO race. Philippine providers of IT-BPO services are highly dependent on the US market for equipment as well as resource training and they are currently experiencing the effects of the US dollar depreciation.

2. Technological Innovations

The developments in the ICT infrastructure of the Philippines will make it a major player in the global outsourcing industry. The 85% reduction in the cost of bandwidth in the past 5 years makes this sector competitive. Laws that facilitate technical innovations have been implemented. In addition, companies are benefitting from the fruits of globalization as well. The government has facilitated policies that decrease the cost of connectivity, as well as the development of ICT human resources. The establishment of the Philippine Cyber

Corridor marked an important step to the internationalization and the modernization of Philippine industries.

3. Developments in Business Practices

Outsourcing is a global phenomenon. Companies now are deeply integrated and have intense competition against each other. With higher labor cost in many developed countries coupled with intense competition and the facility of ICT, companies in the developed countries seek cost efficiency, and the provision of these services in developing countries including the Philippines.

Addressing the growing demand of the IT-BPO industry, schools are now offering new courses that cater to the specific needs of businesses such as network management, game development courses, animation courses, and programming courses.

4. Government Regulations

Government regulations in the US that restrict outsourcing overseas may be a threat to the sector. For American firms to be competitive they should either lower their wages or outsource. The US firms will have to find ways to circumvent these regulations. Moreover, strict implementation of these regulations may not be practical. If these regulations will hamper the competitiveness of US firms; such regulations may not push through. The Philippines, however, is taking steps to gain more of the off-shoring market share from non-English speaking countries. The Board of Investments (BOI) announced in July 2011 that it would be teaming up with IBM Philippines to conduct research and implement programs to build the multi-lingual talent pool of the country for BPOs.

The government supports the Philippine IT-BPO industry by enabling laws and policies such as the Medium-Term Philippine Development Plan 2011-2016 which is still on the process of being finalized. The draft contains the issues on the need to strengthen the services sector such as making

the labor force globally competitive, improving access to MSME financing and support services and promoting labor standards harmonization. Furthermore, the government supports the industry through the release of the Executive Order No. 561 which directed to create the Philippine Cyber Corridor, and target the IT-BPO as a priority in the 2009 Investment Priority Plan. Nevertheless, the IT-BPO industry faces many challenges and difficulties which involve corruption, inadequacy of appropriate infrastructure, policy instability, inefficient government bureaucracy, government instability and corporate tax rates (Bird & Ernst, 2009).

b. Employment Prospects

The BPO service exports have immensely increased and will continue to be strong for the next years. The industry created a significant accounting for 1% in the 2012 labor force. . The Philippines may soon have to face a bottleneck in labor supply as companies are increasingly facing difficulties to find suitable candidates, which may lead to rising wages in the BPO sector (Bird & Ernst, 2009). And in fact, this may be verified with the recent BITS survey (BLES, 2010). In total, there are 276,940 vacancies in all sectors of the Philippines, and the number of applicants is 1,969,976. It is very evident that the absorptive capacity of the country is very low. But with the rise of the IT-BPO sector, the generation of employment, particularly of the occupations mentioned above will improve the absorptive capacity of the Philippine economy.

For most occupations in the industry, though, the number of applicants almost always outnumbers the available vacancies: Technical and Commercial Sales Representatives for instance has nearly 69,537 applicants but has only 9,256 vacancies to accommodate them all. Customer Service Representatives/Associates have, by far, the largest amount of applicants, 397,895, but the occupation can only absorb 40,564 (BLES, 2010). The case

is almost the same for other occupations in other sub-sectors: Accountants and Auditors (40,572 applicants, 4,074 vacancies), Systems Analysts and Designers (121,687 applicants, 2,457 vacancies), Computer Programmers (69,743 applicants, 3,876 vacancies), Medical Transcriptionists (5,674 applicants, 505 vacancies), and Medical Assistants (5,087 applicants, 17 vacancies).

As we improve the qualifications of our human resources, we can enhance the employment prospects of Filipinos in high value added BPO. For example, we have not tapped the sophisticated and higher value added in financial services, taxation and probably management consulting where there is a huge potential.. There is urgent need to improve our services through human resource development and ICT infrastructure development.

V. Challenges and Recommendations

According to the A.T. Kearney Global Services Location Index of 2011, the Philippines currently ranks 9th on a global scale with a score of 5.65 in terms of the index. From 0 to 10, wherein it is weighted with 0 to 4 for financial attractiveness (the Philippines scored 3.18), 0 to 3 for people skills and availability (the Philippines scored 1.31), and 0 to 3 for business environment (the Philippines scored 1.16). In terms of financial attractiveness, the Philippines ranks 7th where the best quality is the level of compensation costs, but the country scored low in terms of infrastructure costs, tax and regulatory costs.

The Philippines ranked 21st in terms of people skills and availability, wherein the best quality of the labor force are the level of education, relevant experience, language capabilities, size, and availability of the labor force. Unfortunately, in terms of business environment, the Philippines ranked 42nd out of 50 countries where there is relatively great country risk, low country infrastructure and cultural exposure, as well as very low security on intellectual property.

Overall, the Philippines has the capacity to become the next India, but there is a need for stronger government support and technology-driven education. There are many challenges and issues that the industry is facing. In terms of legal frameworks, there is the need for laws providing fiscal incentives to firms registered with PEZA and the BOI. The industry players were thwarted due to inefficiency of the 14th Philippine Congress to enact non-fiscal laws which are important in strengthening the legal framework of the industry, namely; the Cyber Crime Prevention Act; the bill to create a Department of Information and Communications Technology; and the Data Privacy Act. Another challenge faced by the industry is that legislation originating in the Congressional labor committees is often not in its interest.

Also, the practice of declaring an excessive number of non-working holidays needs to be reviewed in the context of its effect on the productivity and competitiveness of Philippine firms.

In terms of labor supply, Philippine educational institutions are not providing a sufficient number of suitable graduates to meet the labor demands of this rapidly growing sector. There is a growing gap between the goals of the academe and industry; as existing curricula are not synchronized with the needs of the industry. Although labor supply is abundant, the attrition rate is high especially since applicants are quickly engaged, contracted and fought over by foreign outsourcing companies. Demand for high-quality labor pool has outpaced the supply in zones of high industry concentration. Though the Philippines is a relatively good English-speaking country, students lack opportunities to practice English outside of school and most potential employees are uncomfortable speaking in English. The proportion of computer ownership in the Philippines is low; not many households have computers and internet connections.. Overall, there is a growing view that occupations in the contact-center sub-sector are dead-end or low-end jobs when in fact these are veritable occupations that the Philippines can specialize on. In terms of the policy environment, there are no clear policies that support the IT-BPO industry which is a very serious matter. Moreover, there is a need for better promotion of the industry, there should be continuous efforts on disseminating public information and advertising about the industry.

What can be done? It would pay to strengthen the legal framework of the industry, provide laws to protect intellectual property and to establish governing legal entities for the growth of this very dynamic sector. There is also a need to match the demands for the occupations with quality and quantity of the labor supply that are proficient with computers and the English language. In order to achieve this there is a

need for close academe-industry partnership that immerses students as well as restructures curricula corresponding to the needs of the industry. There is a need to undertake programs utilizing the use of broadband empowering majority of the Filipinos, considering that these technological advancements represent the growing significance of information and communication technology to the daily lives of Filipinos as well as the operations of companies. With respect to the Animation and Game Development sub-sectors, there is a need to develop a Creative Industry Master Plan to lay down the groundwork for this emerging industry, especially since this industry is very undermined relative to other industries. In general, the IT-BPO industry is growing to be one of the most dynamic industries in the country, there is a need to eliminate cultural barriers such as negative mentalities against the occupations that are essential to the industry.

The industry should be seen as a hope for Filipino employees, a means of staying out of poverty. The large pool of qualified Filipino employees should serve as a strong driver

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