

OUTCOME 4 & 5

#DigitalPH

Information Technology for Government and Outsourcing Industry



Department of Science and Technology

Published by
Science and Technology Information Institute

EDITORIAL BOARD

PUBLICATION DIRECTOR
EXECUTIVE EDITOR
EDITOR-IN-CHIEF
ASSOCIATE EDITOR
MANAGING EDITOR
PROOFREADER
LAYOUT/GRAPHICS
CONTRIBUTING WRITERS
PHOTOGRAPHY

RICHARD P. BURGOS
ARISTOTLE P. CARANDANG, LPT, MPS, PhD
FRAMELIA V. ANONAS
ESPIE ANGELICA A. DE LEON
ALLAN MAURO V. MARFAL
RODOLFO P. DE GUZMAN
JAMES B. INTIA
DOST MEDIA CORE
AUDIO VISUAL UNIT AND DOST MEDIA CORE

OUTCOME 4 & 5 - **#DIGITALPH** | INFORMATION TECHNOLOGY FOR GOVERNMENT AND OUTSOURCING INDUSTRY
COPYRIGHT©2017
SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE
DEPARTMENT OF SCIENCE AND TECHNOLOGY
ALL RIGHTS RESERVED
ARTICLES OR PARTS MAY BE REPRODUCED IN ANY FORM WITH PRIOR APPROVAL FROM DOST-STII

ISBN 978-971-9131-5-4

Contents

- 7** DOST, industry partners launch 2015 Philippine Startup Challenge
- 8** DOST conducts nationwide Lean Startup training for IT and eng'g profs
- 11** Students, countryside to benefit from technopreneurship-DOST exec
- 14** Take online jobs, DOST exec urges job seekers in province
- 17** Closing in on 2016 Targets
- 19** DOST's Next Wave Cities can help minimize traffic
- 21** Employment opportunities and inclusive growth could be found by taking a deeper look at the IT-BPM industry
- 25** DOST names Cauayan in Region 2 as Smarter City
- 34** DOST's free wi-fi project to help speed up countryside development
- 36** DOST issues policies on web hosting, email, info standards
- 37** Interconnection of gov't offices for better public service almost complete –DOST
- 39** DOST initiative secures and speeds up online transactions
- 40** Gov't services to significantly improve with E-government

FOREWORD

Science Nation. The phrase is not an apt description for our country of 7,107 islands. Not yet.

The key to make the Philippines a real “Science Nation” is information. With information, programs and technologies developed or funded by the Department of Science and Technology (DOST) – as well as other locally crafted technologies which help solve the country's multi-sectoral problems - become known among Filipinos in all corners of the archipelago, thus pushing them to avail or to take advantage of these science-based innovations to uplift their lives.

When such information is cascaded to the Filipino everyman – every Juan and Maria, including those in the so-called “laylayan ng lipunan” - a lot of things are on cue to take place:

Farmers will become more productive and earn more, small enterprises will grow, thrive and be more competitive, industries will be revitalized, technopreneurship will be more prevalent and employment will increase via the Business Process Management (BPM) sector, government services will become more responsive, healthcare services will improve and become more accessible to more Filipinos, opportunities for S&T education especially among the underprivileged will become more available, and the citizenry will be armed with more effective strategies for disaster preparedness and strategies.

What I had just mentioned are the DOST 8 Outcomes – eight specific targets that the Department aims to achieve in the long run via the following sectors: Agriculture (Outcome 1), Enterprise (Outcome 2), Industry (Outcome 3),

IT-BPM (Outcome 4), E-governance (Outcome 5), Health (Outcome 6), Education (Outcome 7), and Disaster Preparedness (Outcome 8).

This compendium of seven publications is a tool for delivering such vital information. It presents to you how DOST and its 8 Outcomes address the current problems in each of these sectors, and thus help contribute to the Philippines' economic resurgence. Six of these seven publications tackle one DOST Outcome each, while the seventh publication focuses on both Outcomes 4 and 5.

In short, this collection is a veritable showcase of the Department's various initiatives across these eight sectors, with stories of ordinary Filipinos – from farmers, fishermen, small businessmen, students, and college graduates to healthcare providers, calamity victims, and the citizenry as a whole – whose lives have been touched by the possibilities that S&T has to offer. These stories – encapsulated in news and feature articles – were written by information officers from the different DOST agencies. The articles capture in a nutshell the pivotal role of S&T in a nation's journey to progress and prosperity and why, therefore, S&T should not be taken lightly by any nation, much less a developing country such as the Philippines. S&T, on the contrary, should be at the forefront of government efforts to drive the country forward and sustain this horizontal trajectory. S&T therefore, should not take the backseat.

This particular publication – titled **#DigitalPH Information Technology for Government and Outsourcing Industry** focuses on two DOST Outcomes, namely Outcome 4 (Information Technology-Business Process Management Services) and Outcome 5 (E-governance).

Under Outcome 4, DOST recognizes the Philippines as a global leader in the IT-BPM industry which, in 2013, generated revenues of up to \$15.5B and employed 900,000 Filipinos full time. For 2016, the local BPO industry is expected to generate 1.3M new jobs with 17percent annual growth. However the industry does not only include call center companies; it also has in its fold companies engaged in animation, game and software development, and healthcare information management, among others. Further, opportunities in this industry can no longer be found in the high-rise office buildings of Makati City, Muntinlupa, and Quezon City. Growth areas in the provinces ideal for IT-BPM operations have emerged as well. DOST recognizes these developments and, thus, continues to provide programs and activities that will help other cities in the country to become the next IT-BPM destination for global industry play. It also encourages the local workforce, including new college graduates, to seek employment in these companies to further spur the growth of this sector.

Under Outcome 5 on the other hand, DOST seeks an information and communication technology (ICT)-based transformation of governance, broadening access to government services for those in the countryside. For this, the Department seeks a seamless interconnectivity among government agencies so that citizens may transact with these offices faster, more conveniently and efficiently. As former Pres. Benigno Aquino III said, "Through the e-Government Master Plan, we lay the groundwork for an effective and transparent e-government information systems, providing

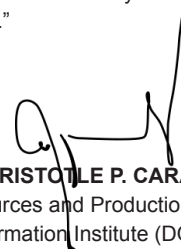
agencies a framework that will strengthen and integrate existing information systems that are vital to the delivery of services and information."

Indeed, information is one of the starting blocks for the country's successful run toward being the definitive Science Nation that it should be. For it is only through complete, accurate, comprehensible, and timely information that mass or public awareness is generated. If the public is aware of scientific and technological developments, they now know how to improve their lives, and thus take action to make this a reality. If there is action, S&T then gets the chance to show off its full capability: rolling its veil of magic across the sectors, over the entire nation, to wrap the entire Philippine population with the bountiful fruits of harnessing its S&T resources. All these, for the welfare and the future of the Filipino.

I humbly invite you to read the stories in this publication and in all of the other six publications as well. In reading these, not only will you get a sense of S&T's importance to a nation, you will also learn how S&T can actually touch your life and that of your family, how it can help you fulfill your dreams, keep you safe and healthy, and allow you to touch other people's lives as well.

Reading these stories will make you realize that S&T has always been a part of our lives and will always be. All we have to do is acknowledge it, use it, and maximize it.

When we do, we're well on our way to becoming a real "Science Nation."



DR. ARISTOTLE P. CARANDANG

Chief, Communication Resources and Production Division
Department of Science and Technology-Science and Technology Information Institute (DOST-STII)

MESSAGE

The importance of communication technology in the digital age cannot be underestimated; more so be ignored if we are to fully utilize science and technology to better our lives.

Using science, the Department of Science and Technology (DOST) has concentrated its efforts in developing cutting-edge technologies that will build and strengthen information and communication technology infrastructure (ICT) in the country.

This book captures the news stories behind the various DOST ICT projects and programs. To name a few, the DOST, through the Information and Communications Technology Office, implemented the Free Wifi program. This enabled 4th-, 5th- and 6th-class municipalities in the regions to have access to free internet service that will serve as the lifeblood of development initiatives in education, health, enterprise development, and disaster mitigation, among others.

The stories on technopreneurship in the countryside and prospects of hundreds of thousands of web-based jobs serve as living testament to the growing

IT-BPM industry in the country. The story on Next Wave Cities gives us a glimpse of the future where interconnectivity is the main catalyst of productive change by leveling the playing field through e-commerce.

The article on the iGovPhil program shows the paradigm shift in public service where ICT has become the tool to improve the delivery of different government services to Mang Juan and Aling Maria, thus revolutionizing the way we transact business with government.

With these programs rolled out, the DOST hopes to make our people aware of the value of technology in our daily lives. These stories show that ICT is instrumental in narrowing the digital divide and it allows the benefits to trickle down to our communities in the grassroots – *ito ang tunay na “agham na ramdam”*.

Do read through the pages and find out how we can use science and technology to our advantage and discover the whole new “wired” world of limitless opportunities.



RAYMUND E. LIBORO
Assistant Secretary

MESSAGE

The Department of Science and Technology's (DOST) information arm – the Science and Technology Information Institute (STII) – is proud to present “#DigitalPH Information Technology for Government and Outsourcing Industry” for Information Technology-Business Process Management or IT-BPM and for E-governance, a collection of informative articles about DOST initiatives for the local BPM sector and for government connectivity, poised to elevate the Filipino's standard of living in ways that only an all-encompassing game changer can do. That game changer is of course, S&T.

“#DigitalPH Information Technology for Government and Outsourcing Industry” for IT-BPM and E-governance is part of a compendium chronicling the DOST 8 Outcomes – or eight thrusts for the Philippines as it fulfills its mandate to “provide central direction, leadership and coordination of scientific and technological efforts and ensure that the results therefrom are geared and utilized in areas of maximum economic and social benefits for the people.”

This particular publication is all about Outcome 4 which is geared toward the IT-BPM sector as well as Outcome 5 which is focused on E-governance or Government Connectivity.

To achieve its plans and vision for the IT-BPM sector, DOST anchors its programs on one undeniable fact: that the Philippines is a recognized global leader in the IT-BPM industry. With its hardworking and highly talented English speaking workforce and appropriate infrastructure, the country has risen to become a leading choice for BPM operations – whether for voice, animation, or game and software development, among others. And DOST recognizes this as it continues to implement projects which encourage

Filipinos to work for BPM firms, provide training for IT professionals, promote technopreneurship, and encourage other cities in the Philippines to become the next major IT-BPM destination in the country.

Under E-governance, DOST envisions an Information and Communication Technology (ICT)-based transformation of governance, so that there is government connectivity. As such, more Filipinos especially those in the countryside, will be better able to access government services wherever they are.

Some of DOST's efforts are detailed here, giving the readers a bird's eye view of how DOST is navigating its roadmap for the Philippine IT-BPM sector and for E-governance, with S&T resources as its well-oiled wheels.

Yet, **IT-BPM** and **E-governance** are just two of its 8 Outcomes. The others are: **Agriculture** (Outcome 1), **Enterprise** (Outcome 2), **Industry** (Outcome 3), **Health** (Outcome 6), **Scholarship** (Outcome 7), and **Disaster Preparedness** (Outcome 8).

Together, DOST's projects across these 8 Outcomes will help keep the country on course, and keep its desired results on target.

For this end, STII will keep on churning timely, accurate, and easy-to-understand information to help make the DOST mission complete. After all, it is through information via publications such as this that scientific and technological advancements – key ingredients for national development – are made known to policy makers, leaders, and the general public who are ultimately the beneficiaries of well-utilized S&T resources.

May the reader find this publication useful – for his daily life, his education, his work and livelihood, his


RICHARD P. BURGOS
 Director, STII



DOST, industry partners launch 2015 Philippine Startup Challenge

By ALLAN MAURO V. MARFAL, *DOST-STII*

The Department of Science and Technology-Information and Communications Technology (DOST-ICT) Office, in partnership with Philippine Software Industry Association, Ideaspaces, Huawei, and Vibal Foundation launched the 2015 Philippine Startup Challenge last May 20, 2015 at ICT Office Building in Diliman, Quezon City.

Now on its 2nd year, PSC is a student startup competition promoting technology entrepreneurship or “technopreneurship” among college students. It dares the students all over the country to create bolder, more creative software and internet-based innovations that solve real problems and help improve the lives of individuals worldwide.

To join the competition, each team must have four members composed of one faculty adviser and three students. The faculty adviser must have attended or will attend at least one of the preparatory boot camps for PSC. These are the Lean Startup 101 Boot Camp in 2014 and the boot camps for 2015 scheduled on the following dates: June 6 in Cebu City, June 13 in Davao City, June 20 in Iloilo City, July 4 in Baguio City, July 8 in Metro Manila, and July 25 in Cagayan de Oro City.

A preparatory boot camp is a series of workshops for faculty advisers and teachers of information technology and computer science for them to learn the basics about building and operating a startup company.

Each aspiring team must submit a five-minute video pitch presentation of their startup idea by the end of August 2015. From the submitted entries, the ten best entries will be selected as finalists and the ten respective teams will be given further mentoring.

These ten finalists will then advance to the National Finals tentatively set in November 2015 where they will get the chance to pitch their products directly to funders, industry experts and government representatives. The top three teams will be picked as winners, and thus gain funding and admission to business incubation.

“During the series of startup workshops that we have conducted before, we have seen the skills and potentials of our students all around the country in the field of engineering, computer sciences, and information technology,” said Monchito Ibrahim, deputy executive director of ICT Office.

On the initial run of PSC in 2014, 51 teams from different colleges and universities all over the country sent their entries. Four out of the top five winners came from outside Metro Manila.

For more information about the Philippine Startup Challenge 2015, contact Karla Legaspi of ICT Office at karla.legaspi@icto.dost.gov.ph or 920-0101 loc. 1301 and Karen Reyes of PSIA at karen.reyes@psia.org.ph, 817-2727 loc. 109, and 0917-9408984.

DOST conducts nationwide Lean Startup training for IT and eng'g profs

By ALLAN MAURO V. MARFAL, DOST-STII



PROFS LEARN “LEAN STARTUP” METHOD IN DOST BOOT CAMP. College professors provide their inputs in one of the exercises during the 2015 Lean Startup 101 Boot Camp in Iloilo City on June 20, 2015. The said workshop was organized by the Department of Science and Technology-Information and Communications Technology (DOST-ICT), and aims to help college professors understand the basic principles of an effective business methodology used by some of the world’s top tech companies during their early years in the market. Boot camps were also held in Cebu City last June 4 and Baguio City last July 4. Succeeding legs will be in Cagayan De Oro City on July 18, Quezon City on July 21, and Davao City on July 25. (Photos from DOST-ICT Office’s e-Innovation Group)

The Department of Science and Technology-Information and Communications Technology (DOST-ICT), in partnership with Philippine Software Industry Association is currently conducting a series of Lean Startup 101 Boot Camps in different locations across the country to increase the capability of college professors in mentoring their students on how to build successful start-up companies.

The series kicked off on June 4, 2015 in Cebu City, followed by Iloilo City on June 20, and most recently in Baguio City on July 4.

The remaining leg will be on July 18 in Cagayan de Oro City, July 21 in Quezon City, and July 25 in Davao City. This is the second straight year that ICT Office is staging this series of boot camps.

The workshops aims to help college professors, specifically in IT and Engineering courses, to understand the basic principles of "Lean Startup" - a business methodology that Facebook, Instagram, and Dropbox used in their startup phase a decade ago.

Lean Startup Methodology helps start-up founders or technopreneurs to adapt their business quickly to the present needs of their target market based on feedback generated from a small number of customers.

Lean Startup 101 Boot Camps also serve as preparatory events for the 2015 Philippine Startup Challenge (PSC), a student startup competition promoting "technopreneurship" among college students. It dares students to create bolder, more creative software and internet-based innovations that will solve real problems and help improve the lives of individuals.

"DOST is recognizing the vital role of academic institutions in enhancing science and technology ecosystems in the country and conducting this kind of activity could be a great step to encourage more innovators to develop new products and services, specifically in the field of ICT," DOST Secretary Mario G. Montejo said.

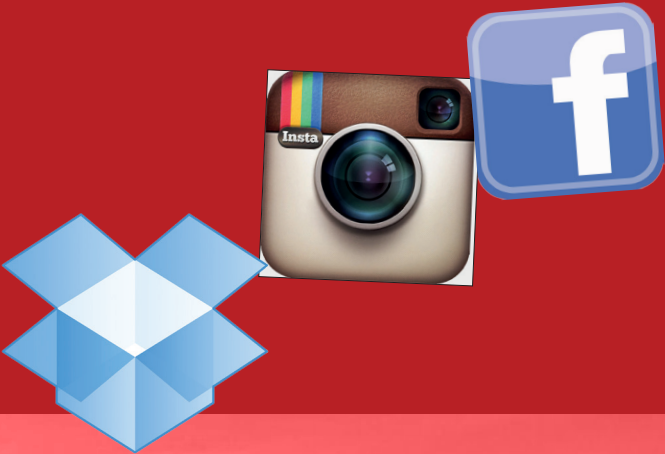
Meanwhile, Emmy Lou Delfin, program manager for ICT Office's e-Innovation Group, said that one of DOST's top priorities is to enable students to become major contributors in nation building at a young age.

"We always encourage our Filipino students to actively be involved in creating more ICT innovative ideas and to have an entrepreneurial mindset early on. We consider professors/ teachers our best partners that we can rely on to achieve these goals," she said.

Delfin is hoping that after conducting this kind of activity, our country can produce skilled professionals, who cannot only work in local or multinational companies, but are also capable of building world-class tech companies that can generate career opportunities in their localities.

Through the boot camps, participants will learn how to eliminate wasteful practices and increase value producing practices during the product development phase. This way startups can have a better chance at success without requiring large amounts of outside funding or elaborate business plans.

Lean Startup 101 Boot Camps and PSC are both activities under ICT Office's Seed.Ph Program which promotes technopreneurship thru e-commerce and technology startup businesses.



Students, countryside to benefit from technopreneurship - DOST exec

By ALLAN MAURO V. MARFAL, *DOST-STII*

Having an entrepreneurial mindset early on can be an added advantage for Filipino students. At the same time, it can also fill the gap in areas where there is a lack of investments like in the provinces, said Monchito Ibrahim, Deputy Executive Director of the Department of Science and Technology-Information and Communications Technology Office (DOST-ICT Office).

Certain places in the country lack investment opportunities for various reasons. Among these are security issues, lack of or limited infrastructure, and unsuitability of its geographical location.

ICT-based startups, however, are not heavily dependent on location, according to Ibrahim. Thus, promoting technopreneurship or technology entrepreneurship among engineering and ICT students is an effective way to bring economic progress to areas not reached by investment opportunities. It maximizes the potential of untapped ICT talent in the provinces as well.

"Having strong technical skills and an accompanying business mindset can elevate our talent pool to not only be skilled professionals employed in local or

multinational companies, but also enable them to create their own companies that can provide world-class business/technical solutions as well as offer employment in their locality," said Ibrahim.

ICT Office has been conducting several workshops in different provinces to guide college students and professors in building ICT-based startups. The workshop includes training on software and mobile applications development that can offer solutions to social problems and attract potential investors.

ICT Office is also encouraging would be technopreneurs to adopt the Lean Startup Methodology. Proven as an effective business model, the Lean Startup Methodology helps start-up founders or technopreneurs to adapt their business quickly to the present needs of their target market based on feedback generated from a small number of customers.

Facebook, Instagram, and Dropbox, all of which were basically startups five or 10 years ago, have used the Lean Startup Methodology.

"We have done a few workshops to teach professors in areas such as the cities of Baguio, Davao, Cebu as well as in Metro Manila," Ibrahim revealed.

DOST eyes 500,000 freelance web-based workers in provinces by 2016

By ALLAN MAURO V. MARFAL, *DOST-STII*



Emmy Lou Delfin, program manager of DOST-ICT Office's e-Innovation Group (2nd from left), together with (from left) Butch Valenzuela of Accenture, Evan Tan of Freelancer.com and Olivia Briones of Upwork Philippines, answer various questions from participants of the Rural Impact Sourcing Forum last July 28, 2015 at SMX Convention Center in Pasay City during the National Science and Technology Week. Delfin shared that ICT Office is aiming for 500,000 Filipinos in the countryside to work via different online job platforms by 2016. The forum aimed to help participants, mostly college students and job seekers from provinces, learn how to become successful by mining the various web-based career opportunities. (S&T Media Service)

The Department of Science and Technology-Information and Communications Technology (DOST-ICT) Office is aiming for 500,000 Filipinos in the countryside to work freelance via different online job platforms by 2016.

This was shared by Emmy Lou V. Delfin, program manager of ICT Office's e-Innovation Group, during the forum on Rural Impact Sourcing last July 28, 2015 at SMX Convention Center in Pasay City as part of the recent National Science and Technology Week (NSTW).

According to Delfin, the Philippines has more than one million freelance online-based workers who deal with different clients around the world.

"Through its Rural Impact Sourcing Program, ICT Office is looking to generate more career opportunities for those in socio-economically disadvantaged areas in the country through meaningful ICT-enabled jobs," she stated, adding that ICT Office conducts regular workshops in different provinces to help the residents to learn how to become successful workers in the digital era.

Evan Tan, regional director of Freelancer.com in Southeast Asia, emphasized in his talk that a major benefit of working online is that it

negates the necessity of moving to the big cities to find a job.

"Since most ICT-based opportunities are not heavily dependent on location to provide career growth to every individual, we would like to take advantage of it by promoting in-demand online jobs to the areas where there is high population but low employment due to lack of industry investors," Delfin added.

Tan also said that working online could give everyone an equal opportunity to pursue what he wants to do, no matter what his economic, social, and educational backgrounds are.

Plus, students can already start practicing their profession even before they graduate with the availability of online jobs, especially those which do not require a college degree such as creative and IT-related jobs.

"Traditional employment will no longer be the norm and it will be replaced by contingent workers such as freelancers and part-time workers. The long-term trend of hiring contingent workers will continue to accelerate with more than 80 percent of large corporations planning to substantially increase their use of a flexible workforce," said Tan. "Definitely, online freelancing is the future of work."

Take online jobs, DOST exec urges job seekers in provinces

By RODOLFO P. DE GUZMAN, *DOST-STII*



Fresh graduates and college students about to graduate from college in the provinces may be agonizing over how to gain employment in their locality where career opportunities are lacking.

The answer to this are online jobs, said Department of Science and Technology-Information and Communications Technology Office (DOST-ICT Office) – Visayas Cluster I Director Frederick B. Amores.

“Online jobs is our answer to the challenge of bringing technology jobs to areas that currently may not have many opportunities for local jobs in the tech sector due to local challenges such as environmental conditions [like] typhoons, volcanoes, earthquakes, peace and order issues, geographic location - [being] far from major urban areas,” said Amores.

Online jobs will not require fresh graduates to move to another location and as such allow them to maintain their quality and cost of living without sacrificing economic opportunities.

At the same time, working online also provides career growth. “This career



advancement would be in terms of getting better, higher value online jobs as one gets more experience or enhanced skills and of course by doing a good job for a client,” he explained.

The Philippines is now among the top 10 countries in the world in terms of the number of people doing online jobs. Plus, more cities in the country have joined the league of 100 destinations all over the world ideal for Information Technology-Business Process Management.

Amores said that some of ICT Office’s partners attribute the growing number of those registering in their online jobs platforms Freelancer.com and Online Jobs University to the various workshops that ICT Office had conducted.

Conducting workshops is one of the activities under ICT Office’s Rural Impact Sourcing Program, in partnership with Freelancer.com and Online Jobs University. The program aims to encourage Filipinos to consider online jobs and other opportunities offered by the Internet in areas where population is high but employment opportunities are scarce due to lack of investors.





Rural Impact Sourcing at Central Plaza Mall in Daet, Camarines Norte held on May 30, 2014

Closing in on 2016 Targets

By AARON CAPA

As the growth of the IT-BPM industry continues to gain momentum, DOST, through the Information and Communications Technology Office (ICTO) focuses on reaching its 1.3M target employment and /US \$25B revenues by 2016.

With a total workforce reaching 900,000 in 2013, the IT-BPM industry is expecting to reach the 1 Million mark before the end of 2014. Last year, the industry earned US \$15.5 billion in revenues. This is expected to reach US\$18 billion by the end of the year. On top of this, the Philippines remains as the top choice for voice services and second choice for non-voice services.

While the Philippines continues to be the leading destination for voice services, IT-BPM sectors such as healthcare information management, software, game development, animation and engineering services have contributed significantly to the country's employment and revenue generation. These sectors play significant roles as well in the country's IT-BPM campaign with its continuously expanding partnerships with the US, Australia, Japan, and UK.

"IT-BPM is one of the top industries that contribute to the inclusive growth of the country as you could see in terms of the number of direct jobs and the revenue it generates," stressed ICTO Executive Director Louis Napoleon C. Casambre. "By 2016, the IT-BPM industry is projected to contribute at least 10 percent of the nation's gross domestic product", he added.

As the country's main agency in handling the IT-BPM sector, ICTO continues to support the industry's growth through its various programs and collaborations with the different IT-BPM sectors. Just last May, the Philippines sent a delegation to the Software Development Expo, a renowned trade mission annually held in Japan. One of the key objectives was to sustain the country's branding as one of Japan's reliable global business partners for its IT and software service needs.

Furthermore, the agency is looking to contribute to the industry's growth and generate more jobs and opportunities through its two new key initiatives, namely the e-Commerce and the Rural Impact Sourcing program. The e-Commerce program, also known as the SeedPh program, aims to boost the development of the country's startup ecosystem and promote technopreneurship track as a viable career (<http://icto.dost.gov.ph/index.php/news-events/current-news/153-dost-ict-office-kicks-off-seedph-startup-workshops-for-2014->).

The Rural Impact Sourcing program, on the other hand, is looking to generate economic and social impacts in untapped rural areas where there is high population but low employment due to lack of investors. Through the use of ICT, the program pushes for access to digital markets and rural BPOs as tools for job creation (http://icto.dost.gov.ph/images/misc/pr_impact_sourcing_program.pdf).



DOST's Next Wave Cities can help minimize traffic

By ALLAN MAURO V. MARFAL, *DOST-STII*

Next Wave Cities, a program of the Department of Science and Technology (DOST)'s Information and Communications Technology (ICT) Office, could help solve Metro Manila's worsening traffic situation.

The program concentrates on bringing Information Technology-Business Process Management (IT-BPM) companies and opportunities to the provinces, thus avoiding the heavy flow of office workers in Metro Manila's business hubs and helping to decongest traffic in these places.

Monchito Ibrahim, deputy executive director of ICT Office, said that one of the reasons for the daily traffic in Metro Manila is the huge number of companies that still choose to operate in Eastwood, Makati, Epifanio de los Santos Avenue, and other major commercial destinations in Metro Manila.

That is why many Filipinos in the rural areas still opt to migrate to Metro Manila to take advantage of these job opportunities. This leads to a scenario where office workers go to the same commercial districts, use the same mode of transportation at the same period of time, thus causing heavy traffic during rush hours.

"With Next Wave Cities Program, ICT Office managed to introduce and recommend those areas in the provinces that are ideal for IT-BPM operations to the industry investors by providing them extensive report on the competency of these Next Wave Cities, such as number of quality educational institutions,

infrastructures, and crime rate," Ibrahim said.

Industry investors would be encouraged more to install IT-BPM hubs in the provinces instead of Metro Manila because talent and office locations are already in place. Furthermore, Ibrahim said that investors who decide to open their IT-BPM operations in the provinces would get less competition and thus avoid the so-called pirating of talent.

"We want the local residents in the countryside to have decent employment opportunities, wherein they can earn salaries that are enough to support their needs without leaving their families," he said.

Ibrahim revealed that the number of full-time IT-BPM employees in the provinces has increased from more than 63,000 in 2010 to more than 300,000 as of August 2014.

ICT Office also conducts Stepping-Up the Value Chain, an awareness program that aims to promote other IT-BPM career opportunities aside from call centers or voice services to the provinces. These include game and software development, animation, healthcare information, accounting and finance, and engineering outsourcing services.

"We want them to present various options. If you are a nursing graduate and you are finding difficulties in searching for a job, particularly in other countries, you can use your expertise in healthcare information services. If you are an IT or multimedia arts graduate, you can maximize your creative skills in various IT-BPM services such as animation, game and software development," Ibrahim said.



Department of Science and Technology (DOST) Secretary Mario G. Montejo, keynote speaker at the 2014 International IT-BPM Summit last October 13, 2014 at the Makati Shangri-la Hotel, believes that DOST's initiatives on enhancing disaster preparedness management can deliver positive impacts on the operations of information technology-business process management (IT-BPM) companies in the country. DOST-developed Doppler radars and hazard maps can help IT-BPM companies make better decisions related to their operations. The summit served as an avenue to address new trends and advancements in outsourcing models, management solutions and technology that will shape the future of IT-BPM. (S & T Media Service)



Employment opportunities and inclusive growth could be found by taking a deeper look at the IT-BPM industry

By ALLAN MAURO V. MARFAL, *DOST-STII*

Previously, we thought the Information Technology-Business Process Management (IT-BPM) industry, formerly known as Business Process Outsourcing, only consists of call centers – where an agent answers questions from a client via the telephone for eight or more hours while sitting in front of the computer.

Despite its higher offer of starting salaries and tons of benefits, many are still discouraged from entrusting their future in the industry, questioning the kind of career growth they could possibly get from it.

However, the emergence of other growth areas in the provinces as well as other career segments, justifies that this industry is here to create more employment opportunities for many Filipinos and bring inclusive growth to the country.

Nowadays, these employment opportunities cannot only be found in the high-rise buildings of Metro Manila alone.

According to Patricia May Abejo, director of the Information and Communications Technology Office (ICTO), an attached agency

of the Department of Science and Technology (DOST), cities like Davao, Cebu, Bacolod and Iloilo are now considered as top locations of IT-BPM operations.

“As these cities have sufficient educational institutions that could supply the talent for the industry, infrastructure such as airports, hotels and other commercial establishments as well as a sustainable business environment, most of the industry stakeholders are not hesitating to put their investments in these places,” Dir. Abejo said.

With investments directly going to these areas in the countryside, Dir. Abejo said that this scenario could allow local residents to stay put and not go to Manila to get decent employment. Now they can earn enough income that will support all their needs while staying with their own families in their hometowns or provinces.

Currently, 28 percent of IT-BPM operations are located in the provinces, but the industry is looking to expand this to 40 percent by 2016.

To sustain this countryside development, ICTO continues to provide programs and activities that will help other cities to be ideal destinations for IT-BPM operations and aid industry investors to properly assess which areas in the provinces are most likely to give them higher chances of success.

Every year, ICTO and its industry partners release the Next Wave Cities Report which recommends areas outside Metro Manila, Metro Cebu, Metro Clark and Bacolod that are suitable and ready for IT-BPM operations.

Director Abjeo said that it could help industry stakeholders to better decide where they will install their IT-BPM hubs as well as local government units to get ideas of how they will develop their cities into more suitable places for this industry.

Additionally, the past two years have seen a series of road shows held in different cities in the countryside. During these road shows, ICTO conducts several talks which help increase rural folks' awareness about the different services under the IT-BPM industry other than call center services. These include animation, game and software development, and healthcare information management – thus providing career opportunities to IT and nursing graduates, among others.

"If you are an animator, you can work in this industry. If you are a game or software developer, you can work in this industry. If you are engineering graduates, you can work in this industry. These are the things that we want to impart to the mind of everyone,

especially to the youth as well as to their parents. We want them to encourage that there are a lot of options and career growth in this industry", Dir. Abejo said.

To aid these professionals who aspire to work in the IT-BPM industry, enhance their skills, and build their network, ICTO is spearheading and supporting several events, competitions, and trainings in several parts of the country. Among these are Animahenasyon, an annual animation festival competition that serves as venue for Filipino animators to showcase their ideas; Start-up Weekend Visayas, wherein local technopreneurs get the chance to pitch their ideas to industry investors; and the upcoming Imagine Cup in April 2014, an annual student competition of software applications addressing national problems in health, education, e-government, and others.

Dir. Abejo is also optimistic about the potential of the Philippines to become one of the world leaders in healthcare information management services. Healthcare information management careers have expanded into various disciplines that open opportunities for nursing graduates and allied medical professionals. In recent years, the country has produced a sufficient number of students and graduates of nursing to fill up the need in this segment. In the IT-BPM industry, they can find work as medical transcriptionists, medical secretaries, medical coders and billers, medical assistants, medical representatives, medical butlers, and clinical research associates.

Dir. Abejo also remarked that the IT-BPM industry has helped many of its agents have a sense of accomplishment. She explained that Filipino workers are also global workers. By sharing their skills and services here, they are not only able to help themselves by earning, they also contribute to the Philippine and world economies.

With these positive developments auguring well for the industry's future, ICTO and its industry partners are targeting to generate US \$25 billion revenues and 1.3 million direct jobs for the industry by 2016. Dir. Abejo said that she is confident that the industry will achieve its goal, especially with the abundance of talent in the country and the dedication of Filipinos.



asia-nikkei-com.jpg



callcenterphilippines.org



Cauayan City Mayor Bernard Faustino M. Dy (left), receives a trophy from DOST Secretary Mario G. Montejo honoring the city as the first local government unit in Region II to adopt Juan Time. Photo also shows DOST Region II Director Dr. Urdujah A. Tejada and the 65 barangay chairpersons of Cauayan City. (Photo by Gerardo Palad, S&T Media Service, DOST-STII)

DOST names Cauayan in Region 2 as Smarter City

By HAZIEL MAY C. NATORILLA, DOST-STII

The Department of Science and Technology (DOST) benchmarked Cauayan in Isabela, Cagayan Valley as the first Smarter City in the region out of 144 cities during the recent Region 2 leg of DOST's "Science Nation: Agham na Ramdam" nationwide roadshow.

Cauayan City is also the first local government unit in the region to unite all its barangays in implementing Juan Time – a DOST campaign for the synchronization of all watches, clocks, and timesetting devices in the country including office bundy clocks to promote a culture of punctuality among Filipinos.

Smarter Cities operates under the DOST Smarter Philippines Program. A smarter city means that it has put in place enough ICT (information communication technology) infrastructure - "instrumented" (through merging data), "interconnected" (through networks), and "intelligent" (through data trends).

Among the city's ICT-based technologies are an Electronic Government Application System or eGAPS, a mobile app for iOS or android-based phones containing tourist information and Cauayan City Patrol, the Cauayan City Identification System which serves as a valid government ID, a systematic and computerized police clearance process, a mobile library with laptops and internet connection among others, and an interactive government website (<http://cityofcauayan.gov.ph/>) featuring e-services.

An ICT-based, interactive system can help empower people as it aims to enhance comfort, productivity, profitability, and innovation. These result to synchronized action, which means faster, real-time response to present situations involving the monitoring of abnormal situations, maintaining peace and order, and the like. Under this scenario, a city is considered "smarter."

In particular, the Smarter City of Cauayan centers on eight key areas: Smarter Farming, Smarter Micro, Small, and Medium Enterprises or MSMEs, Smarter Industries, Smarter Jobs, Smarter Government, Smarter Climate Change Adaptation, Smarter Scientists and Engineers, and Smarter Healthcare.

Meanwhile, DOST also awarded Cauayan with a trophy and a certificate of appreciation for being the first LGU in Region II to adopt the Juan Time campaign and for being the first city in the Philippines to install all its 65 barangays with precision timepieces synchronized with the Philippine Standard Time as prescribed under Republic Act No. 10535.

"We also use Juan Time as a means of information dissemination," explained Raena Consorcia M. Santos, information analyst of Cauayan City. Since all barangay halls were installed with synchronized timepieces, barangays make DOST weather updates and other important information available right below the clock.

For more information on how to become a Smarter City, please contact or visit your nearest DOST regional office.



DOST's free wi-fi project to help speed up countryside development

By ALLAM MAURO V. MARFAL, *DOST-STII*

The Department of Science and Technology's (DOST) Free Wi-Fi Internet Access in Public Places project will be a huge step toward providing better living conditions for Filipinos in rural areas.

This was revealed by officials from DOST's Information and Communications Technology (ICT) Office during a recent press briefing for the project launch on July 24, 2015 as part of the activities lined up for the Science Department's National Science and Technology Week (NSTW) from July 24-28, 2015 at SMX Convention Center in Pasay City.

ICT Office Deputy Executive Director Bettina Quimson said that helping folks in the countryside to reap the benefits of Internet connectivity will jumpstart economic development for them.

ICT Office, for one, has been promoting online jobs in different unserved and underserved areas in the country to help residents make the most of the Internet while earning a decent income without leaving the comfort of their homes.

Internet connection via Free WiFi Internet Access in Public Places will also help improve the educational system in these areas, Quimson stated.

"Internet has changed the way we live and the way we can reach our own success. Free Wi-Fi Internet Access in Public Places Project of DOST will help a lot of residents of unserved and underserved areas in the country to have more opportunities for learning and livelihood and better access to

government services," said DOST Secretary Mario G. Montejo in a separate interview.

Meanwhile, DOST Undersecretary Louis Napoleon Casambre emphasized that more than being just a repository of data, the Internet can also be used to inform and empower citizens. "Whether it is disseminating news and warnings about natural disasters or providing platforms to discuss issues concerning the nation, the Internet has shown to be an important tool in creating an informed citizenry," he explained.

Casambre also announced that certain places in Quezon City and Manila will have free Internet starting July 24, as part of an alpha launch test that will help ICT Office assess the system and make the necessary adjustments before rolling out the project on a larger scale.

These places are the Quezon City Memorial Circle, Quezon City Hall, PHILCOA, Social Security System, and LTO in Quezon City and Rizal Park in Manila.

ICT Office expects a maximum number of 4,550 concurrent Internet users in these places, but is prepared to provide and maintain the speed and connection quality for up to 105,000 users. Aside from checking their email and social media accounts as well as visiting other websites, users may also access government e-services.

The network will implement a blacklist system to block potentially harmful and destructive websites to keep information secure.



DOST, PLDT ink partnership for faster, more secure access to gov't websites

By ALLAN MAURO V. MARFAL, DOST-STII

The Department of Science and Technology (DOST) signed a Memorandum of Agreement (MoA) with Philippine Long Distance Telephone (PLDT) Company to help Filipino internet users in the country toward more secure, efficient, and faster access to various government websites. The signing was held on September 07, 2015 at Information and Communications Technology (ICT) Office in Diliman, Quezon City.

Said MoA defines the establishment of the fiber optic facilities that will link PLDT to the Philippine Open Internet Exchange (PHOpenIX) which is being operated by DOST's Advance

Science and Technology Institute (ASTI).

PHOpenIX, the first and only Exchange in the Philippine internet industry operated by a neutral institution, was established by ASTI last 2007. It allows exchanges of Internet traffic in a free-market environment among local internet and data service providers.

Meanwhile, PLDT will provide rack space with power in its VITRO Data Center facility, where DOST can set up and operate its third PHOpenIX node. The first two nodes are operated by ASTI in Diliman and Globe Telecom in Makati.

Through this, PLDT subscribers can experience better, faster access to government websites hosted in PHOpenIX.

DOST Undersecretary and ICT Office Executive Director Louis Napoleon Casambre admitted that the quality of the Internet in the Philippines relative to the rest of the world has been the subject of much criticism in the news, social media, and congressional hearings.

"One of the factors contributing to this negative observation is that our local providers are not peered with each other through a local exchange," said Casambre. "Internet traffic from one provider to another still has to pass through international channels before arriving to its intended local destination, causing unnecessary congestion of our connection to the rest of the internet."

Meanwhile, DOST Secretary Mario G. Montejo said that DOST's partnership with PLDT will allow the government over P21M worth of free use of the PLDT dark fiber for two years.

"Consequently, this will save the Filipino people significant time whenever they try to access government websites. This arrangement marks a stronger public-private partnership, especially in the field of connectivity," said Montejo.

"The PLDT Group has always been one with the DOST in its mandate to uplift the Filipino's quality of life, by leveraging the latest available information and communication technology capabilities that we have, and the resources that we can humbly contribute," said PLDT executive vice-president and ePLDT President Ernesto R. Alberto.

Senator Paolo Benigno "Bam" Aquino IV, who has been pushing for ICT connectivity, said they are not yet aiming for IP peering, but with a telco giant like PLDT as part of the PHOpenIX, it is now a step closer towards the goal.

In the same event also, DOST announced the designation of PHOpenIX as the government's official IP Exchange network in accordance with Administrative Order No. 39.

Two years ago, amid the spate of defacements of government websites, Malacañang issued AO 39, mandating government agencies to migrate to the government web hosting service of DOST-ICT Office.

"I am happy to announce that migration of government websites is more than 80 percent complete, with the other 20 percent expected to have migrated fully by the end of this year," said Casambre.

DOST issues policies on web hosting, email, info standards

Government offices will be more efficient as policies on operational standards, web hosting and email have been laid out for adoption by agencies.

This was announced recently by the Information and Communications Technology Office (ICT Office) of the Department of Science and Technology (DOST).

Louis Napoleon C. Casambre, ICT Office executive director, signed the Memorandum Circulars governing Government Web Hosting Service (GWHS), Government-wide Email (GovMail), and Philippine eGovernment Interoperability Framework or PeGIF Part 2, otherwise known as the Information Interoperability Framework (IIF).

"The GWHS is the government's answer to the need for greater security and robustness in the Internet technologies it uses," said Casambre.

Meanwhile, ICT Office Deputy Executive Director for e-Government Denis F. Villoriente said, "The adoption of GovMail Services will rationalize government communications as well as improve the delivery of goods and services to the general public."

The Memorandum Circular on GovMail is in line with the provision of Republic Act 9485 or the Anti-Red Tape Act of 2007, which requires the government to redesign its transaction systems and procedures to reduce bureaucratic red tape and processing time. It also provides the basis for appropriate disciplinary actions on violations of the use of the GovMail service.

On the other hand, the Circular on interoperability lays out the policies on information standards to be adopted by government agencies.

"The IIF will certainly enable the Philippine government to share and reuse information in a uniform and effective manner among its various agencies and instrumentalities as well as between the government and its stakeholders," said Villoriente.

GWHS, GovMail, and IIF are all part of ICT Office's iGov Philippines program which seeks to enhance government efficiency and effectiveness by using and putting relevant mechanisms to implement interactive, interconnected and interoperable government applications.

Interconnection of gov't offices for better public service almost complete - DOST

A slow, weak, and inefficient system of government services will soon be a thing of the past as Metro Manila's fiber optic technology that will interconnect 160 government offices and provide them with high-speed communication is almost done.

This was announced by DOST Undersecretary Louis Napoleon Casambre, executive director of the Information and Communications Technology Office (ICT Office), a service institute of DOST.

This initiative of connecting government offices is part of DOST's flagship e-government project called the Integrated Government Philippines project or iGovPhil.

Set for full deployment by early 2015, iGovPhil aims to integrate all functions of government agencies and simplify their processes via ICT in order to help build an e-government that is transparent and that will guide the country toward IT competitiveness and economic progress. High-speed connection will enable these agencies to collaborate on projects, share resources and save money in the process.

According to Casambre, fiber optic technology will not only help government

agencies coordinate faster but also facilitate other necessary services like cloud computing, data center co-location, web hosting, document and records management, email and online security. "Cloud computing, for instance, will be difficult to implement without broadband connectivity," he explained.

The cables in Metro Manila are set for last-mile connection to buildings and the main data center where information and data from government offices are stored in servers. Most of the services offered by iGovPhil, like government website hosting, email, cloud, online payment system, public key infrastructure, are launched from these data centers.

Also being developed are registries on land, vehicles, businesses and citizens. Citizens' registries are existing in the forms handled by SSS, GSIS, NBI, DFA and other data gathering agencies. The data will just have to be centralized and expanded.

Meanwhile, a similar fiber optic network project in Cebu is set to connect 12 government agencies. The networks are expected to be online before the end of 2014.

DOST initiative secures and speeds up online transactions

By JOY M. LAZCANO, DOST-STII

The public may now avail of government services faster, more safely and more efficiently right in their homes and workplaces through the use of digital certificates.

This becomes possible with the Department of Science and Technology's (DOST) Philippine National Public Key Infrastructure (PNPKI), an initiative which secures communications among individuals and government agencies when conducting transactions over the internet.

This was revealed by Denis Villorente, director of DOST's Advanced Science and Technology Institute (ASTI), during a stakeholders forum at the 2014 National Science and Technology Week held July 24-28, 2014 at the SMX Convention Center in Pasay City.

PNPKI refers to the virtual 'key' which subscribers can use to secure files sent over an otherwise unsecure 'public' network like the internet. As more people do business over the internet, the public needs trusted infrastructures that will authenticate and validate virtual personal identities by providing digital certificates to validate the authenticity of the person on the other end of the transaction.

"The PKI is a way to identify people, organizations and machines electronically. To be able to have reliable and trusted transactions online, systems must be able to identify the parties they are transacting or communicating with. Using PKI, the digital certificates provide an authoritative way to prove that parties to an online transaction are who they say they are," explained Rage Callao of ASTI.

Callao added that digital certificates are issued to people, organizations and systems after stringent verification of the subscriber's information. These digital certificates may then be used to authenticate oneself online, sign electronic documents and secure electronic transmissions. It also includes a verification service which allows people to verify digital certificates presented to them online by other parties.

In recent years, concerns over unreliable network security have popped up. According to reports, from the years 2003 to 2012, the Anti-Transnational Crime Division of the Criminal Investigation and Detection Group of the Philippine National Police handled 2,778 cases of computer crimes from various government agencies and private individuals.

Gov't services to significantly improve with E-government

By HERNAN S. MELENCIO, DOST-ICTO

Government services are expected to significantly improve once DOST's flagship e-government project, the Integrated Government Philippines project or iGovPhil, is fully deployed later this year or early next year.

In Metro Manila, the fiber optic backbone that will interconnect 160 government offices and provide them with high-speed communication is almost done, according to DOST Undersecretary Louis Napoleon Casambre, executive director of the Information and Communications Technology Office (ICT Office) of DOST. The cables are set for last mile connection to buildings and the main data center. A similar fiber optic network project in Cebu will connect 12 government agencies. The networks are expected to be online before the year ends.



An iGovPhil personnel tests equipment inside a government data center.

Casambre said the adoption of fiber optic technology will not only help government agencies coordinate faster but also facilitate other necessary services like cloud computing, data center co-location, web hosting, document and records management, email and online security. Its benefits, however, are realized only if implemented in conjunction with other components of the project, which are mostly complete and being pilot tested.

"Cloud computing, for instance, will be difficult to implement without broadband connectivity," Casambre said. The fiber optic network is one of the components of the iGovPhil project, which offers a "whole government" approach to e-governance.

The ultimate function of government, he said, is public service. That was the goal when the government launched the e-Government Master Plan (EGMP) last year. The plan was to use ICT to build an e-government that will guide the country toward IT competitiveness and economic progress.

Through the project, the DOST aims to interconnect government agencies, integrate all their functions and simplify processes to better serve the public and make the government transparent.

The iGovPhil project itself is composed of several projects considered to be the building blocks in the establishment of an e-government, Casambre said.



The fiber optic cables connect government agencies to data centers where their information and data are stored in servers. Most of the services offered by iGovPhil, like government website hosting, email, cloud, online payment system, public key infrastructure, are launched from the data centers. A high-speed connection will enable agencies to collaborate on projects, share resources, and save money in the process.

Thus, the iGovPhil project is part and parcel of the EGMP that aims to integrate all ICT initiatives of government, make operations interoperable, and share resources.

The project provides the infrastructure, shared services, and registries that an e-government needs in order to operate smoothly. The infrastructure consists of the

data centers and fiber optic networks. The shared services include government cloud, PKI, web hosting, email, document and record management, online payment, government forms generation, among others.

So much has been achieved since the Master Plan was launched. Meanwhile, the Medium-Term ICT Harmonization Initiative or MITHI, a component of EGMP which aims to standardize processes, make applications interoperable, facilitate collaboration and allow sharing of government resources, is on track.

Most government agencies have already submitted their Information System Strategic Plans (ISSPs) for 2015 to comply with the budgeting process. And by November all would have submitted their three-year ISSPs. This move is in line with MITHI's



task of planning, budgeting, implementing, monitoring and assessing ICT initiatives in government; a way of achieving harmony.

Priority projects identified with EGMP and MITHI include the following:

- The P 9B Digitization Empowerment Fund which aims to provide government employees, from SG level 4 up, with laptops. For this year some 96,000 laptops are to be distributed. The plan, to be sourced from the E-Government Fund, also includes replacing old desktops from government offices.
- The Philippine Health Information Exchange, part of the P 150 million eHealth program of the DOH, which is being worked out to be a big database of information on health services, medicines and best practices.

The system will benefit greatly from the informational interoperability framework being developed under the master plan.

The health cluster is also a pilot for the implementation of the Philippine e-Government Interoperability Framework (PeGIF). Version 1 of PeGIF, which deals with technical interoperability, has been completed and version 2, on informational interoperability, is being developed.

Also in the works for EGMP is the Enterprise Architecture, a technical blueprint for the government.



SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE
DEPARTMENT OF SCIENCE AND TECHNOLOGY