

Assessment of Telecommuting Schemes of Working Environment in the Philippines Before and During COVID-19 Pandemic

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Abstract – Significant scenarios were presented and assessed in order to recommend *telecommuting schemes* during and after this Covid-19 pandemic.

First, impacts of different stages of Industrial Revolutions were evaluated. Weighing the *advantages and disadvantages, trade – off* was necessary as there were still *affected sectors* despite of the advantages brought by technology.

Second, provisions for agenda of Gender and Development (GAD) were also presented pursuant the thrusts of international mandates to empower different sectors of the society. Specifically, ICT based and ICT enabled jobs give equal opportunities and equitable opportunities to every marginalized sectors giving them quality living and give significant contributions to the society.

Third, *telecommuting schemes* were assessed in order to achieve optimum output as *drawbacks* were inevitable despite of the advantages offered by ICT. Moreover, this paper also cited *practices* that could be a reference for future researchers. Specifically, there were several ICT capacity building initiatives conducted in the Philippines even before COVID-19 struck. These capacity building initiatives equipped people with skills necessary to be ready in Information Technology – Business Process Management (IT-BPM) Industries.

Keywords: *gender and development (GAD), information and communications technology (ICT), new normal pandemic, telecommuting*

I. Introduction

While there were already several mandates, initiatives and cause implemented both by government and private sectors, there are still challenges for achieving agenda of Gender and Development (GAD). This was due to uneven distribution of ICT opportunities and access [1]. Historically, one of the known pioneers in ICT in the field of programming was Augusta Ada Lovelace [2]. Ironically, despite of this historical milestone, women had significantly lesser engagement in ICT as compared with men through the years prior to COVID-19 Pandemic. Consequently, several sectors were also restrained by *quarantine protocols* [3]:

“On the other hand, another issue to be addressed this pandemic are agenda for Gender and Development (GAD). Senior citizens, pregnant and minors (less than 18 years old under Philippine law but as per quarantine guidelines, below 21 years old are not allowed to go outside) are restricted of travelling. The conflict seems that people below 21 years are prohibited to go outside their home yet people at least 18 years old can already work. Same dilemma applies with pregnant who used to work in their companies before pandemic hit. ICT through work from home (WFH) scheme can address this GAD issues.”

Despite of the existence of Republic Act No. 11165 known as Telecommuting Act of 2018, there still no standard policy on telecommuting in the Philippines even in Europe [17]. Moreover, both territories have common challenges that include the following but not limited to: equitable access and equal opportunity among gender. Furthermore, adoption of *telecommuting* would create needs for building ICT infrastructures and *retooling* of people.

II. Methods

Data such as historical records of pandemic / plague and salient points of industrial revolution were gathered. These were used in comparative studies. This paper further emphasized that ICT is not limited to computers and internet as ICT was clearly defined by both local and international organizations. Delineating the definition and roles of ICT in this paper were necessary in order to avoid confusion and misconceptions especially in non-technical readers/researchers. The Philippine Republic Act No. 9292 (RA 9292) known as “Electronics Engineering Law of 2004” defined ICT as follows [4]:

“the acquisition, production, transformation, storage and transmission/reception of data and information by electronic means in forms such as vocal, pictorial, textual, numeric or the like; also refers to the theoretical and practical applications and processes utilizing such data and information.”

Twelve years hence, the Philippine Republic Act No. 10844 (RA 10844) known as “Department of Information And

Communications Technology Act of 2015” defined ICT as follows [5]:

“the totality of electronic means to access, create, collect, store, process, receive, transmit, present and disseminate information”

Referring from the two aforementioned legal definitions, it was clear that ICT is not limited in computers and internet alone. Specifically, RA 10844 further categorized two major sectors namely, *ICT Sector* and *ICT Enabled Service Sector*. The former is the sector often perceived by people which is highly technical by nature. This nature led to corollary that *ICT Sector* seemed dominated by males (industries involved under the *ICT Sector* involve the following but not limited to: telecommunications, broadcasting, and other industries covered by the Electronics Engineering practices). Despite that there were already equal opportunity policies, *ICT Sector* still has low engagement of women. On the other hand, *ICT Enabled Service Sector* such as Information Technology – Business Process Management (IT – BPM) industries has almost gender balanced workforce.

The International Telecommunications Union (ITU) issued a report on May 2016 emphasizing further the details and scopes of ICT [6]. Moreover, the same report had also provisions to offer ICT opportunities to persons with disabilities (PWDs, *politically correct term: persons with different abilities or “differently abled”*) that fulfill agenda of Gender and Development (GAD). GAD agenda cover not only gender equality between men and women but as well as providing equitable opportunities to various sectors. These agenda are applicable not only in the Philippines but as well as to various countries.

During the first quarter of 2019, a project of the Department of Information and Communications Technology (DICT) named *Rural Impact Sourcing (RIS) was shortlisted in the 2019 World Summit on the Information Society (WSIS) Prizes under the Capability Building Category of the ITU* [7]. Since the creation of DICT, RIS aimed to offer ICT-enabled jobs through *capacity building* (sometimes called *digital retooling*) in the socio-economically disadvantaged areas in order to provide *equitable access* to Filipino citizens [8] [9]. RIS was rebranded to Digital Jobs Training PH (DJT PH) as this can address unemployment not only in the countryside (rural areas) but as well as urban areas.

Moreover, DICT conducted the National ICT Household Survey (NICTHS) during the second quarter of 2019. NICTHS gathered ICT data at grassroots level in order to determine the critical data necessary for ICT improvements of the country [10].

Furthermore, *Novel Corona Virus* (nCov, later named Covid 19) cases were declared “*pandemic*” on March 11, 2020 by the World Health Organisation (WHO) [11]. Movement control schemes were implemented. These movement control schemes are called by various names depending on the country of jurisdiction. In the Philippines, there were four categories of movement control schemes (ranked from strictest respectively) named *Enhanced Community Quarantine (ECQ)*, *Modified*

Enhanced Community Quarantine (MECQ), *General Community Quarantine (GCQ)* and *Modified General Community Quarantine (MGCQ)*. Although it is still debatable the exact date when quarantine was first implemented, the concept of quarantine involves movement control.

Table 1 Events Involving Plagues / Pandemics [12]

Event	Remarks
Athenian Plague	Estimated that this occurred around 430 – 426 B.C., the exact cause was unknown. The <i>overcrowded</i> city – state of Athens was severely hit.
Antonine Plague	Occurred in 165 – 180 A.D. which hit larger area i.e. territories of Roman Empire.
Justinian Plague	Occurred around sixth century A.D. and considered the first large scale plague in the recorded history.
The Black Death	This is the plague that hit Europe and Asia during the mid – 1300s
“Spanish Flu”	Regarded as the first global pandemic (1918 – 1920) that gave detrimental impacts to the several countries
Smallpox in the former Yugoslavia	Occurred in 1972, <i>travel restrictions</i> were enforced
HIV Pandemic	Observed in 1980’s as “slow progressing” yet feared by the people around the globe.
SARS	Occurred in 2003
“Swine Flu”	Occurred in 2009
Ebola Outbreak	Occurred in 2014 – 2016
ZIKA	Identified in 2015
Disease X	A hypothetical, speculated disease serves a <i>model</i> for research

As depicted in Table 1, there is a *hypothetical disease* named Disease X speculated that may hit population should this disease occur and spread.

On the other hand, Table 2 features salient points of “Four” Industrial Revolutions. An Industrial Revolution is a transition event that migrates practices, systems and policies towards the new “norms” mandated by several factors including but not limited to: scientific, technological, economic and / or even socio – political changes.

While these industrial revolutions brought innovation as well as convenience to the people, these also brought challenges as people have to undergo *retooling*.

Table 1 and Table 2 can be associated with each other as the present situation brought challenges of equipping people with *digital literacy*.

Table 2 Salient Points of Industrial Revolutions [13]

Stages	Salient Points
First Industrial Revolution (1IR)	<ul style="list-style-type: none"> • “Mechanization” was introduced • “Water and steam” driven industries
Second Industrial Revolution (2IR)	<ul style="list-style-type: none"> • Some “water and steam” driven industries were still present at this period but most were driven by internal combustion engines • Electrification was introduced.
Third Industrial Revolution (3IR)	<ul style="list-style-type: none"> • “Electromechanical systems” are now electronically controlled • Automation is present almost every industries • Information and Communications Technology (ICT) emerged.
Fourth Industrial Revolution (4IR)	<ul style="list-style-type: none"> • Features Artificial Intelligence • Continuous digital transformation (ICT is still present)

The aims to narrow the *digital divide* were spearheaded even before the Covid-19 pandemic. Spearheading the same is more significant nowadays as more *virtual/online/digital* transactions might be the “new normal”.

Table 3 CHED Report: Proportion of College Graduates AY 2013-2014 [14]

Discipline	Women	Men
Education Science and Teacher Training	76.3%	23.7%
Medical and Allied	71.6%	28.4%
Business Administration and Related	66.4%	33.6%
ICT	49.4%	50.6%
Engineering and Technology	29%	71%

Table 4 CHED Report: Proportion of College Enrollment AY 2014-2015 [14]

Discipline	Women	Men
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Education Science and Teacher Training	75.2%	24.8%
Medical and Allied	72.2%	27.8%
Business Administration and Related	65.7%	34.3%
ICT	42%	58%
Engineering and Technology	28.8%	71.2%

Table 5 TESDA Report: Proportion of TVET Graduate AY 2014 [14]

Course	Women	Men
Health, Social and other Community Development Services	91.9%	8.1%
Food Processing	70.4%	29.6%
Tourism (Hotel and Restaurant)	65.4%	34.6%
ICT	45.1%	54.9%
Electronics	31.6%	68.4%

Tables 3, 4 and 5 contain data from 2016 Statistical Handbook on Women and Men in the Philippines. As reflected from the three aforementioned tables, there is a gender imbalance in the ICT field. While the teaching field is dominated by women, there were still inequitable opportunities for women. Moreover, while tourism field is dominated by women and ICT / Electronics fields are dominated by men, tourism was severely affected by Covid-19 pandemic. Furthermore, DICT was created in 2016 and made several ICT programs that will give *equitable access and opportunities* (including marginalized sectors) [15].

III. Discussions

Referring to the 2016 Statistical Handbook on Women and Men in the Philippines (which is the recent available data as of this date), tourism as well as other service oriented industries (salon, spa, manicure, pedicure etc) were dominated by women. These industries were severely affected by Covid-19 Pandemic. Prior to the recent pandemic, DICT had already conducted several *capacity building (digital literacy training)* as *retooling* mechanisms. On the other hand, IT – BPM industry in the Philippines was less affected by the recent pandemic as *work from home (WFH)* schemes can still continue its business as compared with tourism industry. Moreover, WFH may give women quality time for their families instead of travelling daily to their respective offices.

Going down to grassroots level, DICT Provincial Office of Aurora had also fulfilled GAD agenda through fostering partnership with People Empowerment and Advancement Center for Employment (PEACE) in 2017. Launched on April 2008, PEACE has the following Vision and Mission:

VISION

For the Youth, Persons with Disability, Indigenous People, Senior Citizen and Womenfolk of Aurora to be empowered, aware of their rights, highly skilled, articulate,

economically independent and participating in mainstreaming discourses

MISSION

- *Provide alternative education and training opportunities to the less privileged and disadvantaged youth, person with disability, indigenous people, senior citizen, and women*
- *Equip its trainees with necessary knowledge and skills for employment locally and abroad*
- *Capacitate its graduates in order for them to either land a job or start their own business*
- *Graduate highly motivated students armed with desirable work ethics and values, and capable to communicate with facility, manifest their skills with confidence, appreciative and respectful of other people's culture*

Synergizing and synthesizing respective Vision – Mission of DICT and PEACE, a number of *capacity building (digital literacy)* trainings were conducted since 2017.



Figure 1 Opening remarks during the 2019 Digital Literacy for Women (students of PEACE taking Beauty Care and Hairdressing)



Figure 2 Graduation of participants of 2019 Digital Literacy for Women (students of PEACE taking Beauty Care and Hairdressing)



Figure 3 Participants who completed 2019 Digital Literacy for Women (students of PEACE taking Beauty Care and Hairdressing)

Figures 1, 2 and 3 were selected photos during the Three – Day Digital Literacy conducted on June 18 – 20, 2019 (a pre – Covid19 scenario). With these activities, GAD agenda seemed prepared the people in the “black swan” event i.e. Covid-19 pandemic. Consequently Covid-19 pandemic seemed one of the triggers of necessary *digital transformation*. At present, full adaptation of *digital transformation* seems difficult as *marginalized sectors* have little background in ICT.

However, DICT and its stakeholders had already anticipated but the “readiness” of citizens in embracing ICT. Prior to Covid-19 pandemic, DICT and PSRTI (an attached agency of National Economic Development Authority or NEDA) had conducted the National ICT Household Survey (NICTHS) in order to formulate future ICT policies and programs [10]. Some results of NICTHS were the following but not limited to: *majority of the sampled individuals were females (56.5%), and majority of individual respondents were housewives (23%)*. With these data, telecommuting

schemes seemed necessary during this pandemic and even in the future when this global emergency by lifted. *Freelancing and Work From Home (WFH)* arrangements are some telecommuting schemes suitable not only for women but also to other marginalized sectors. Moreover, these schemes do not limit able – bodied individuals and men to practice the same depending on the nature of work.

In the case of *engineering practices*, there are fields that can be done remotely while there are other fields that should be done via *face-to-face (F2F)*. Government offices and private companies should work hand-in-hand to formulate policies in possible adoption of this “new normal”. Same cases apply to different professions and adoption of the “new normal” does not mean eliminating many jobs. However, *retooling mechanisms* are necessary in order address the challenges of industry demands.

Should these telecommuting schemes be adopted, there might be reduction in pollution as people may minimize their utilization of their vehicles. In addition, women who are raising their young children might also benefit in WFH schemes as they would have quality time with their children.

The April-June 2021 issue of Philippine Institute for Development Studies (PIDS) says that women dominate platform work in the Philippines based from the eight month survey conducted from May to December 2020 [16]. Reiterating the data reflected in the 2016 Statistical Handbook on Women and Men released by the Philippine Statistics Authority (PSA), there were really initiatives in bringing equitable ICT opportunities for women. Table 6 indicates the number of people obtained ICT enabled jobs skills after undergoing DICT program named Rural Impact Sourcing (RIS, later rebranded to Digital Jobs). It is notable that in year 2020, online workers increased significantly due to *WFH* schemes implemented when pandemic struck (year 2020*). Moreover, data in Table 6 covers only Regions 3 and 4A of the Philippines.

Table 6 Number of DICT Trainees Who Obtained Online Jobs After Undergoing Digital Jobs Training Program.

Year	Number of Trainees Who Obtained Online Jobs
2017	40
2018	53
2019	51
2020*	91

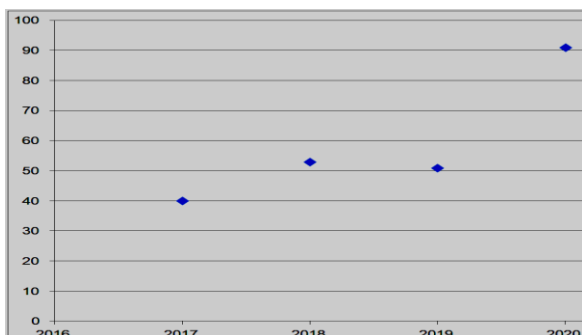


Figure 4: Plot of Number of Trainees versus Year Time Lapse

Referring from the table above, it has a correlation coefficient of 0.876 indicating that there seemed a positive correlation of trainees who got online jobs and the progression of year especially during the pandemic. The data for 2021 is not yet available as the training is still in progress. With this positive correlation, online workers both *ICT Sectors* and *ICT Enabled Sectors* may significantly increase. With this expansion, improvement of ICT infrastructures is necessary creating challenges and opportunities for the *electronics engineering* practitioners.

IV. Conclusions

In view of the foregoing, telecommuting schemes were necessary to be adapted both by government offices and private companies due to economic considerations as well as protecting rights of the people to have equitable access and opportunities. Women, men and other sectors may benefit in telecommuting schemes as they might have ample time to be spent either in their family or in the society. Despite of promising features of telecommuting, there are still industries that require F2F transactions and considered not scope of this paper. Future research may include the following but not limited to: *formulation of various capacity building for the citizens, provision of additional internet coverage in unserved and underserved areas, and public consultation in the standardization of telecommuting schemes and work arrangements.*

Moreover, the idea of implementing the *telecommuting schemes* during this pandemic and moving to the “new normal”, it is recommended for stakeholders (government and private sectors) to work with ICT infrastructures as these are essential in *telecommuting* as well as in various facets of business. Furthermore, the Electronics Engineering practitioners (PECE, ECE and ECT) have vital roles in this mission.

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