Role of ICT in imparting the Youth with Skills, Training and Employment Opportunities to accomplish Human Development Challenges

Venu Madhav Sunkara[1]
Advisor, ICT
The University of Papua New Guinea
National Capital District, Papua New Guinea.
vms@upng.ac.pg

William H Tapio[2]
Director, ICT
The University of Papua New Guinea
National Capital District, Papua New Guinea.
tapiowh@upng.ac.pg

Pulapa Subba Rao[3]
Pro-Vice Chancellor (ASA)
The University of Papua New Guinea
National Capital District, Papua New Guinea.
pulapasr@upng.ac.pg

Abstract

The rapid urbanization is leading to an unsteady increase in youth population in metropolitan and urban areas, particularly in developing countries like the Papua New Guinea. The impacts of job and *training* availability, and the physical, social and cultural quality of urban environment on young people are huge, and influence their health, life-styles, and well-being. Besides this, globalization and technological developments are affecting youth in urban areas in all parts of the world, both positively and negatively.

The broader aim of this paper is to investigate successful practice principles for the information and communication related training and income generation opportunities for young people to promote youth entrepreneurship. It reviews the role of ICTs for vocational *skill development* and *employability*. It discusses the issues surrounding the development of the digital divide and emphasizes types and the importance of developing ICT initiatives targeting young people, and reviews some of the successful policy implementations on ICT-based initiatives from both developed and developing countries that offer opportunities to young people for *learning*, skill development and employment.

Introduction

The rapidly advancing information and communications technologies (ICTs) helps in addressing social and economic problems caused by the fast growth of urban youth populations in developing countries. ICTs offer opportunities to young people for learning, skill development and employment. But there are downsides, young people in many developing countries lack in having broad access to these new technologies.

At the beginning of the twenty-first century, there are over a billion young people between the ages of 15 and 24, of which 85 percent live in developing countries and mainly in urban settings. As per 2014 statistics, Papua New Guinea has 19.7% of its population between the ages of 15 -

24 and about 13% of the total population is living in urban settings [1]. Urban population statistics are shown in Picture-1. Many of these young people are in the process of making, or have already made, the transition from studies to work. During the last two decades all around the world, these young people, as new workers, have faced a number of challenges associated with globalization and technological advances in labor markets [2].

Urban Population Statistics in PNG
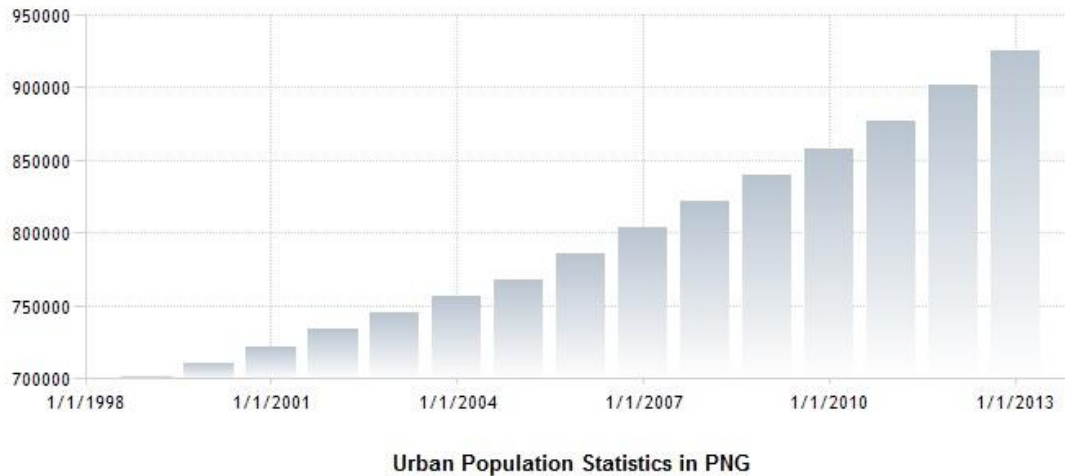
Picture-1: Urbanization in Papua New Guinea

The continuous decrease in employment in the manufacturing domain has made many of the young people facing three options: getting jobs in the informal economy with insecurity and poor wages and working conditions, getting jobs in the low-tier service industries, or developing their vocational skills to benefit from new opportunities in the professional and advanced technical/knowledge sectors. Moreover in developing countries like PNG, although the overall literacy rate is modest (67%) [1], a large portion of young people are not able to choose among any of these options causing long-term unemployment, which makes them highly vulnerable.

Knowledge economy, skill, education and training

The knowledge economy is an economy that can apply its fast increasing knowledge effectively in work and social situations to increase productivity and general well-being, and to create and apply new knowledge. In the knowledge economy, any country's greatest asset is human capital and nations need to take time to invest by benefiting from new technological opportunities through educational or employment programs for their people. Unarguably an important factor with regard to much of the structural unemployment in developed countries has been the mismatch between skills and newly created jobs [3].

In most of the Pacific Island Countries, Indonesia and the Philippines, 25 percent or more of the youth population is unemployed. Youth unemployment is affected by both demand and supply issues. Low levels of technology use have led to weak demand for better educated youth, resulting in unemployment in skilled categories [4].

PNG is facing scarcity of skilled human capital across most sectors. It is strongly reliant on foreign skilled workers in the areas of engineering, mining and construction. There is also a noticeable shortage of soft skills including ICT. According to the survey by Asian Development Bank (2012), there are huge skill shortages in public as well as private sectors and as a result there is a sharp increase (336%) in the number of work permits issued to foreign workers from 2001 to 2009. The majority of work permits are for professional/technical and managerial/administrative staff. According to feedback from employers, the top reasons for employment of foreign workers were to bridge the skill gaps and to acquire more diligent workers with good work ethic [4].

In the knowledge era, criteria for employability are getting higher and higher every day and more advanced skill requirement is becoming a prerequisite of employment. Most importantly knowledge workers or the creative people have already gained mobility, that is to say tough global competition for high-skilled jobs [5]. Hence, providing education, vocational training and advanced skill development to young people for their workforce participation have never been that important before [6].

The role of ICT for vocational skill development
The production and use of ICTs have become the influential force of change in the modern world. ICTs have dramatically reshaped employment markets around the world. The increasing importance of knowledge for economic development and the greater capacity to classify information and knowledge are rapidly increasing. The number of unskilled, semi-skilled and entry level jobs in a wide variety of sectors have reduced and the demand for relevant, often high-level, skills is growing. Large organizations both in the public and private sectors have shed millions of low skill required positions. For young people this has resulted in persistently high unemployment levels.

Access to Information and Communication Technology (ICT) infrastructure and services in PNG is among the lowest in the world, particularly in rural and remote areas. The entry of

private operators and aggressive competition in the mobile sector has resulted in increased coverage and access to telecommunications services. However, operators continue to roll-out second-generation (2G) mobile services, that is, basic voice and text, in rural areas rather than third-generation (3G) or higher capacity networks that offer faster data transmission (mobile broadband). Thus, access is still limited in many rural communities, and services remain very basic [http://www.worldbank.org – Results 2014]. Fixed broadband penetration is below 1% of the population, and remains far beyond the affordability of average citizens and small businesses. Percentage of people using internet in PNG is under 5% and educational institutions are yet to start using ICT as their major aid to quality education. Some of the main constraints to widespread broadband Internet development in PNG include:

- The high cost of international connectivity, due to capacity constraints as well as regulatory factors; and
- The lack of high-capacity domestic backbone networks.

The Rural Communications Project under progress and expected to be complete by 2015 should improve access to telecommunications infrastructure and services in rural and remote areas of Papua New Guinea.

ICTs are playing a pivotal role in reforming the ways in which most of the traditional services are produced, traded and delivered, as well as offering opportunities for the generation of new activities and employment in many service industries [7] [8]. ICT has been extremely important in generating strongly diverging forces for the young workers. It contributed to the automation of processes making some workers unnecessary and closing off jobs many young people could have expected to begin their careers with. ICT changed the economics of many sectors reducing the importance of scale, facilitating an expansion in employment in small and medium enterprises (SMEs), and created new skilled employment opportunities through a number of ICT training initiatives [9]. In the knowledge era continuous education and training is the only way for job security, especially if the education and training is in ICT-related skills. If they demonstrate enterprise and creativity there are vast opportunities for the young people.

Equitable access to information, knowledge (know-how) and education is one of the most vital principles in the emerging global knowledge economy. ICTs are practical tools in narrowing knowledge gaps between countries, regions and also people by providing new frontiers in the areas of information exchange, intellectual freedom and online education. ICT can make a great

contribution to human development, but only for those that have access [10]. ICT access and usage differs mainly by socio-economic status, and not because of personal preferences, and because many crucial social and economic benefits may grow from greater access to and usage of communication technologies, such communication differences constitute a serious 'divide' between segments of a society [11].

The digital divide

The pace of technological development in the new knowledge economy has created more powerful ICTs and rising demand on workers with advanced (ICT) skills. However, just because the technology is available does not mean everyone can get the training and develop skills in it. Those who cannot access necessary information and training, and cannot keep up with technological revolution will be left behind and vulnerable as knowledge economy has already imposed chaos in unskilled and semi-skilled employment [12].

In developed and some of the developing countries, governments and non-governmental organizations (NGOs) have been working on a wide range of ICT initiatives to close the ever growing digital divide. These initiatives include but are not limited to:

(a) Providing public ICT access through libraries and community centers; (b) Offering ICT skill training programs; (c) Providing ICT access and training to disadvantaged target groups including people with disability and their caretakers; (d) Distributing free computer training resources through libraries, shop fronts and community centers; and (e) Providing subsidized electronic gadgets to learning community through government initiatives. For instance Government of India is planning to distribute low cost tablet devices to the student community. (f) Establishing computer reuse schemes to provide affordable refurbished computers to people on low income and non-profit community groups [13].

Successful examples and strategies on ICT initiatives targeting youth

The employment market for young people has changed significantly over the past two decades under the combined impacts of globalization, market liberalization and the adoption of ICTs into work places. ICTs are playing an essential role in providing novel training and employment opportunities for youth. There are a number of successful initiatives from both developed and developing countries that endeavor to provide support for young people in developing skills and

employment opportunities. Some of these initiatives are clustered and presented in eight groups. These groups include initiatives on:

(a) Providing ICT and skill training; (b) Education through ICT; (c) Narrowing the digital divide; (d) ICT employment generation through entrepreneurship; (e) Promoting public-private partnership to generate employment; (f) Using ICT-based employment opportunities for disadvantaged youth; (g) Bridging the gap between the knowledge economy and the informal sector; and (h) Putting young people in charge.

Initiatives on providing ICT and skill training

The first group of initiatives primarily focuses on providing ICT and training. ICT training could offer particular advantages to young people starting a business (i.e. SMEs) in both developed and developing countries. One of these advantages is that ICTs offer potentially low cost forms of communication with high-income markets or large domestic markets. Another one is the greater range of opportunities the application of new communication based technologies can offer for servicing the needs of the disadvantaged people (e.g. remote, poor) [14].

One of the many successful initiatives that provide skills training including ICT is the Australian Technical and Further Education (TAFE) institutions [15]. They are publicly-funded postsecondary organizations that provide a range of technical and vocational education and training courses and small business courses including niche areas, such as viticulture, aquaculture, ICTs and biotechnology. Each State and Territory in Australia has its own TAFE system, and TAFE programs provide industry-relevant, leading-edge skills that can help get people into the workplace faster, upgrade existing skills, or prepare them for further tertiary studies (Source: www.tafe.qld.gov.au).

Another example can be Self employed women's association (SEWA), India. It is a trade union in India for poor, self-employed women workers who earn a living through their own labor or small businesses and do not obtain regular salaried employment with welfare benefits like workers in the organized sector. Most of the members of SEWA are young women under the age of 25. SEWA's main goals are to organize women workers for full-employment whereby workers obtain work security, income security, and social security (at least health care, child care and shelter). SEWA has been one of the first organizations in India to realize the potential for harnessing ICT to help women in the informal sector. It has sought to develop the

organization's capacity to use computers by conducting awareness programs and imparting basic computer skills to its team leaders (Source: www.sewa.org).

Initiatives in PNG

The Australia-Pacific Technical College (APTC) is an Australian Government initiative announced at the Pacific Islands Forum in October 2006 and applauded by Pacific Island leaders. APTC is funded by the Australian Government and managed through the Department of Foreign Affairs and Trade - Australia Aid. APTC operates in PNG from Port Moresby. The APTC was designed as a center of excellence for training, helping people to acquire Australian-standard skills and qualifications for a wide range of vocational careers throughout the Pacific where skilled employees are in high demand (Source: www.aptc.edu.au).

However, the efforts of APTC may not be abundant to cater to the training needs of emergent number of PNG youth. Government, NGOs and Private organizations may consider imparting ICT related skills training through their training divisions across the country. Universities may consider offering vocational training programmes with emphasize on usage of ICT tools to bridge the skill gap.

Conclusion:

Promoting youth employment and employability requires important integrated effort that includes actions in the areas of education, skills development, job supply and support for young low-income entrepreneurs, particularly in the knowledge intensive sectors. It is clear that there is an extensive potential for ICTs to generate employment for young people. However, this potential will not be realized unless a country has a range of supporting strategies in place, including an enabling environment. ICTs offer developing countries the opportunity to close the gap with developed countries and narrow the global digital divide. Applying ICTs in education is a key to provide young people with ICT skills. The participation of young people in the development and implementation of initiatives involving the use of ICTs to generate employment is likely to be a key factor in the success of such initiatives. Mentor support for starting ICT-related enterprises is an important service that governments, NGOs or international organizations could organize to provide advice and guidance to young entrepreneurs. Partnership with international organizations such as United Nations and its agencies may help in implementing new best practices. Investing only on technology is not the solution of the young population's problems, investing on social and human capital makes a better change.

References:

[1] CIA World Fact Book (2014), Population Pyramid. https://www.cia.gov/library/publications/the-world-factbook/fields/2010.html.

[2] International Labor Organization. Global Employment Trends for Youth. ILO: Geneva (2004). ILO: Labor and social trends in Asia and the Pacific, Bangkok (2005).

[3] Jones, B. (1995). Sleepers Wake: Technology and the Future of Work. 4th Edition, Oxford University Press: Oxford.

[4] Asian Development Bank (2012) Papua New Guinea: Critical Development Constraints, Manila.

[5] Florida, R. (2000). The economic geography of talent. Carnegie Mellon University: Pittsburgh.

[6] Florida, R. (2002). The rise of the creative class and how it's transforming work, leisure, community and everyday life. Basic Books: New York.

[7] Petit, P. (1995). Employment and Technical Change. In Stoneman, P. (Ed.) Handbook of the Economics of Innovation and Technical Change. Blackwell, Oxford.

[8] Andersen, B., Howells, J., Hull, R., Miles, I. and Roberts, J. (2000). (Eds.), Knowledge and Innovation in the New Service Economy. Edward Elgar: Cheltenham.

[9] Morris, P. (2000). A survey of the implications of information and communication technologies on youth employment.

[10] Walsh, E., Gazala, M. and Ham, C. (2001). The digital divide: Facing a crisis or creating a myth? 279–284. The MIT Press: Cambridge, MA.

[11] Kozma, R. (2004). Closing the digital divide: evaluation of the World Links program. International Journal of Educational Development.24 (2004): 361–381.

[12] Hull, B. (2003). ICT and social exclusion: The role of libraries. Telematics and Informatics. 20(2003): 131-142.

[13] Yigitcanlar, T. and Baum, S. (2006). Encyclopedia of E-Commerce, E-Government and Mobile Commerce: Concepts, Trends and Challenges. 353-358. Idea Group Publishing: Hershey, PA.

[14] Curtain, R. (2003). Creating more opportunities for young people using information and communications technology. The World Summit on Information Societies, Geneva, 12-14 December 2003.

[15] Victorian Government (2002). Knowledge and skills for the innovation economy. Victorian Government, Department of Education and Training, June 2002, Melbourne.