

# **Providing Youth with Skills, Training and Employment Opportunities through ICT Initiatives**

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## **Abstract**

The rapid urbanisation is leading to an explosive increase in youth population in metropolitan areas, particularly in developing countries. The increasing youth population is bringing a high number of social and economic problems. The impacts of job and training availability, and the physical, social and cultural quality of urban environment on young people are enormous, and affect their health, life-styles, and well-being. Besides this, globalisation and technological developments are affecting youth in urban areas in all parts of the world, both positively and negatively. They are vulnerable to global market changes and are also increasingly affected by the promotion of consumer goods, especially in developing countries, which is increasingly eroding local cultures and values of community and reciprocity. While the rapidly developing information and communications technology can offer opportunities to young people for learning, skill development and employment, many developing countries have limited access to these new technologies. This paper mainly focuses on international successful initiatives, policies and programs that the MENA national governments and local authorities could consider implementing similar strategies to address youth employment problems. The broader aim of this paper is to investigate successful practice principles for the information and communication related income generation opportunities for young people to: promote youth entrepreneurship; promote public-private partnerships; target vulnerable groups of young people; bridge the gap between the knowledge economy and the informal sector; narrow digital divide; and put young people in charge.

The paper is organised in five parts. First, the paper provides an overview of the literature on the knowledge economy, skill, education and training issues. Secondly, it reviews the role of ICTs for vocational skill development and employability. Thirdly, it discusses the issues surrounding the development of the digital divide. Fourthly, the paper underlines 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. Then the paper concludes by providing useful generalised recommendations for the MENA region countries and cities in: advocating possible opportunities for ICT generated employment for young people; and discussing how ICT policies could be modified and adopted to meet young people's needs.

## **Introduction**

Youth population is increasing explosively particularly in developing countries as a result of rapid urbanization. This increase is bringing large number of social and economic problems. For instance the impacts of job and training availability, and the physical, social and cultural quality of urban environment on young people are enormous, and affect their health, life-styles, and well-being (Gleeson and Sipe 2006). Besides this, globalization and technological developments are affecting youth in urban areas in all parts of the world, both positively and negatively (Robertson 1995).

The rapidly advancing information and communications technologies (ICTs) helps in addressing social and economic problems caused by the rapid 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. They are vulnerable to global

market changes, and ICTs link them to global cultures which promote consumer goods, potentially eroding local cultures and community values (Manacorda and Petrongolo 1999). However, we believe that the positives outweigh such negatives.

At the beginning of the twenty-first century, the world's young population numbers more than it ever had. There are over a billion young people between the ages of 15 and 24, of which 85 per cent live in developing countries and mainly in urban environments. Many of these young people are in the process of making, or have already made, the transition from school 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 labour markets (United Nations 2004). The continuous decrease in the manufacturing employment 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 a large portion of young people are not even lucky enough to choose among any of these options facing as a consequence, long-term unemployment, which makes them highly vulnerable.

The United Nations' World Youth Employment report (2004) indicates that in almost all countries, females tend to be far more vulnerable than males in terms of long-term unemployment, and young people who have advanced qualifications are far less likely to experience long-term unemployment than others. In the limited opportunities of the formal labour market, those with limited vocational skills resort to forced entrepreneurship and self-employment in the informal economy, often working for low pay under hazardous conditions, with only few prospects for the future (United Nations 2005a).

The International Labour Organization's research (2004) revealed that the labour force participation rates for young people decreased by almost four per cent (which is equivalent of 88 million young people) between 1993 and 2003. This is largely as a result of the increased number of young people attending school, high overall unemployment rates, and the fact that some young people gave up any hope of finding work and dropped out of the labour market. At the regional level, youth unemployment was highest in Middle East and North Africa (MENA) (25.6%) and sub-Saharan Africa (21%) and lowest in East Asia (7%) and the industrialized economies (13.4%) (International Labour Organization 2004). The youth in economically disadvantaged regions (e.g. the MENA region) face many challenges in education and training that delivers them the right set of skills and knowledge demanded by the labour market. As a consequence, the transition from school to work is mostly unsuccessful and young population end up either unemployed or underemployed in the informal sectors (United Nations 2005b).

Unemployment and lack of economic prospects of the urban youth are pushing many of them into criminal acts, excessive alcohol use, substance addiction, and also in many cases resulting in processes of social or political violence (Fernandez-Maldonado 2004; United Nations 2005a). Long-term unemployment leads young people in a process of marginalisation and social exclusion (United Nations 2004). The sustained high rates of long-term youth unemployment have a number of negative effects on societies. First, it results in countries failing to take advantage of the human resources to increase their productive potential, at a time of transition to a globalized world that inexorably demands such leaps in productive capacity. Second, it reinforces the intergenerational transmission of poverty. Third, owing to the discrepancy between more education and exposure to the mass media and fewer employment opportunities, it may encourage the spread of disruptive behaviours, recourse to illegal alternatives for generating income and the loss of basic societal values, all of which erode public safety and social capital. Fourth, it may trigger violent and intractable political conflicts. And lastly, it may exacerbate intergenerational conflicts when young people perceive a lack of opportunity and meritocracy in a system that favours adults who have less formal education and training but more wealth, power and job stability (Hopenhayn 2002).

To assist in addressing youth's skill, training and employment problems this paper scrutinises useful international practices, policies, initiatives and programs targeting youth skill training, particularly in ICTs. The MENA national governments and local authorities could consider implementing similar initiative and strategies to address some of the youth employment issues. The broader aim of this paper is to investigate the successful practice and strategies for the information and communication related income generation opportunities for young people, to: promote youth entrepreneurship; promote public-private partnerships; target vulnerable groups of young people; narrow digital divide; and put young people in charge.

The rest of this paper is organised in five parts. First, the paper provides an overview of the literature on the knowledge economy, skill, education and training issues. Secondly, it reviews the role of ICTs for vocational skill development and employability. Thirdly, it discusses the issues surrounding the development of the digital divide. Fourthly, the paper underlines types and 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. Then the paper concludes by providing useful generalised recommendations for the MENA region countries and cities in: advocating possible opportunities for ICT generated employment for young people; and discussing how ICT policies could be modified and adopted to meet young people's needs.

### **Knowledge economy, skill, education and training**

Countries worldwide face the prospect of major transformation in the twenty-first century as the world moves towards a global information order (Castells 2000). In this new era, which is already upon us, urban economies are being radically altered by dynamic processes of economic and spatial restructuring (Graham and Marvin 1996). For the last two centuries social production has been primarily understood and shaped by neo-classical economic theory that recognises only three factors of production: land, labour and capital. Neo-classical economics consider knowledge, education and intellectual capacity as secondary, if not incidental, parameters of production (Knight 1995) – that is, human capital is assumed to be either embedded in labour or just one of numerous categories of capital. In the last decades, however, it has become apparent that knowledge in itself is sufficiently important to deserve recognition as a fourth factor of post-modern production. In the globalising world, knowledge, information, innovativeness and the social and technological settings for their production and communication are now seen as keys to economic prosperity (Lever 2002).

The knowledge economy is an economy that can apply its rapidly increasing knowledge effectively in work and social situations to increase productivity and general well-being, and to create and apply new knowledge. It values cross-cultural skills for global trade and other cross-cultural exchanges. (Victorian Government 2002). At the centre of the move from an industrial to an information or knowledge economy is the lesser important capital, labour and land as compared to knowledge, technology and innovativeness. The divergence, which is occurring between nations and between socio-demographic groups within economies, has as much to do with differences in the knowledge and skills base as with available technology.

In the knowledge economy human capital is any country's greatest asset and nations need to take time to invest by benefiting from new technological opportunities through educational or employment programs in their capital- their people. The shift to knowledge economy and skill-based technological progress are increasing the relative demand for skilled labour at the expenses of the less-skilled (Manacorda and Petrongola 1999). 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 (Jones 1995). Perhaps the key issue is that ICT-

based work tends to require lower levels of traditional skills and greater abstract and synthetic reasoning skills (Mansell 1998).

In the knowledge era, criteria for employability are getting higher and higher everyday, and more advanced skill requirement is becoming a prerequisite of employment. Most importantly knowledge workers or the creative class have already gained mobility, that is to say tough global competition for high-skilled jobs (Florida 2000; 2002). Hence, providing education, vocational training and advanced skill development to young people for their labour force participation have never been that significant before.

### **The role of ICT for vocational skill development**

The production and use of ICTs have become the driving force of change in the modern world (Mobbs 2002). ICTs have dramatically reshaped labour markets around the world. The increasing importance of knowledge for economic development and the greater capacity to codify information and knowledge are rapidly increasing the movement in service work to the locations with the cheapest or most capable workers around the world (OECD 1996; 1997; 1999; Morris 2000a). Consequently, social inequality within and between countries has increased and young men and women have tended to bear the brunt of this. The number of unskilled, semi-skilled and entry level jobs in a wide variety of sectors have declined and the demand for relevant, often high-level, skills is growing. As skilled (knowledge) workers are becoming increasingly in demand, these positions are being filled by qualified workers from abroad. Large organisations in both the public and private sectors have shed millions of low-skill required positions. For young people this has resulted in stubbornly high unemployment levels. In most countries these are locked in at rates many times above national unemployment (Morris 2000b).

ICTs are playing a pivotal role in revolutionising 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 (Petit 1995; Andersen et al. 2000). The emergence and widespread diffusion of ICTs have an impact on employment in the service sector through three main channels, that is by: expanding final demand or shifting its composition from tangible goods to intangible, information and knowledge intensive services; changing the composition of intermediate demand both in services and manufacturing towards information and knowledge based inputs and processes; and increasing labour productivity in some of the service activities traditionally affected by the so-called cost-disease or productivity-bias (Evangelista and Savona 2003:452).

ICTs have been extremely important in generating three strongly diverging forces for the world's young workers. They have contributed to the automation of processes making some workers redundant and closing off jobs many young people could have expected to begin their careers with. They have changed the economics of many sectors reducing the importance of scale, facilitating an upsurge in employment in small and medium enterprises (SMEs), and created new skilled employment opportunities through a number of ICT training initiatives (Morris 2000b). Where young people, with the benefit of a good education and training foundation, could have once expected to have a job for life this is no longer the case. 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 resourcefulness there are vast opportunities for the young people.

Equitable access to information, knowledge (or 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 tremendous contribution to human development, but only for those that have access

(Haldon 2001; Walsh et al. 2001). 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 accrue from greater access to and usage of communication technologies, such communication disparities constitute a serious 'divide' between segments of a society (Kozma et al. 2004).

### **The digital divide**

The rapid pace of technological development in the new knowledge economy has created increasingly more powerful ICTs and increasing 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 can not access necessary information and training, and can not keep up with technological revolution will be left behind and vulnerable as knowledge economy has already wreaked havoc in unskilled and semi-skilled employment (Hull 2003).

This rapid technological development has caused the digital divide where it is generally understood as a multidimensional phenomenon encompassing three distinct aspects. The 'global divide' refers to the divergence of ICT access between developed and developing societies. The 'social divide' concerns the gap between the information rich and the poor in each nation. And lastly, within the online community, the 'democratic divide' signifies the difference between those who do, and do not, use the panoply of digital resources and ICT to engage, mobilise and participate in social, cultural and economic aspects of life (Norris 2001).

In developed and some of the developing countries, governments and non-governmental organisations (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 centres; (b) offering ICT skill training programs; (c) providing ICT access and training to disadvantaged target groups including people with disability and their carers; (d) distributing free computer training resources through libraries, shopfronts and community centres; and (e) establishing computer reuse schemes to provide affordable refurbished computers to people on low income and non-profit community groups (Yigitcanlar and Baum 2006).

In the twenty-first century while the globalisation of the knowledge economy is more and more intensified, the links and relations between countries, regions, cities and their residents have become much more advanced. The widening digital divide issue has aroused a concern all around the world. For the balanced and sustained development, countries and cities started to develop aforementioned initiatives and understand their responsibilities in respects of information resource sharing and narrowing the digital divide. The continuum of these initiatives and policies will likely be able to change the digital divide into a digital opportunity.

#### **Successful examples and strategies on ICT initiatives targeting youth**

The labour market for young people has changed significantly over the past two decades under the combined impacts of globalisation, market liberalisation and the adoption of ICTs into work places. ICTs are playing an essential role in providing new training and employment opportunities for youth. There are a number of successful initiatives from both developed and developing countries that endeavour 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) (Curtain 2003).

One of the many successful initiatives that provide skills training including ICT is the Australian Technical and Further Education (TAFE) institutions. They are publicly-funded post-secondary organisations 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 (Victorian Government 2002; [www.tafe.qld.gov.au](http://www.tafe.qld.gov.au)).

Another example can be given from the Victorian government's state ICT policy. The Victorian government sees skill and knowledge as the main drivers of economic growth and global competition (Victorian Government 2000). To realise a prosperous development, like other Australian governments, Victoria developed a number of programs for leveraging the skill and knowledge base of the state and its residents by particularly targeting the young. The ICT achievers program is among the many successful Victorian initiatives (see Box 1).

### **Box 1: The ICT Achievers Program, Victoria, Australia**

The ICT Achievers Program is an initiative originally proposed by the Victorian Government's ICT Skills Taskforce, and subsequently included in the Victorian Government's ICT and economic growth (skills x knowledge = growth) strategy. This program seeks to:

- Develop new secondary school-based models of specialized ICT education.
- Provide a wide group of secondary students with the opportunity to develop and apply their ICT skills in real world enterprise settings.
- Develop enterprise capability, increase experience of ICT applications and raise awareness and enthusiasm about the diverse array of ICT opportunities.

The underlying principles of program organization are as follows:

- Students learn ICT skills effectively when it takes place in a meaningful context.
- There are a range of skills that contribute to entrepreneurial capability – such as ICT, project management, goal setting and time management, working in teams, problem solving, effective communication.
- The program supports other recommendations from the skills x knowledge = growth statement – such as changing perceptions about ICT skills and making students aware of the breadth of jobs involving ICT.
- Students are advised to recognise that all industry ICT based projects occur in teams, with individuals contributing in a specific area of expertise
- The program supports other educational initiatives that have a similar theme.
- The program aims to engage student interest.
- The program provides links to ICT industries.
- The program aims to be of interest to girls and raise awareness and enthusiasm about the diverse array of ICT opportunities.
- The program requires students to produce ICT based projects in order to develop ICT skills and innovation / problem solving competencies.
- The identified ICT skills are relevant to current and future ICT industry needs.
- The program is designed to expand in subsequent years.
- Students and teachers are encouraged to support and promote the best practice and make use of on-line learning environments supported by face to face contact.
- Individual classroom teachers are the initiator of the program within the school. Teachers have ownership of the type of project selected and student skill development. The program supports numerous methods of delivery and provides teachers with the ability to select the relevant training components for software, enterprise and innovation.
- Students are expected to work in teams and develop effective communication skills, though the structures of the teams (number, membership etc.) are left to the determination of schools.

Source: Victoria State Government – [www.mmv.vic.gov.au](http://www.mmv.vic.gov.au)

### **Initiatives on education through ICT**

The second initiative type targets education through technology. ICTs are getting extensively used in supporting alternative advanced education options. Across a range of educational applications, ICTs are being harnessed to improve the efficiency, accessibility and quality of the learning process in developing countries. One of the most clearly demonstrated applications is distance education (or e-learning). Distance education has been a particularly successful model in developing countries where affordability and geography have been real barriers to access. To date, distance education has mainly been applied to tertiary education where the motivation and commitment of students are high. The six largest distance education universities in the world are located in developing countries: Turkey, Indonesia, China, India, Thailand and Korea – all of which offer expanding virtual campuses (see Box 2). In the case of primary and secondary education distance education is not as common as tertiary education. However in recent years it

is gaining momentum particularly for servicing remote rural areas (e.g. Sydney distance education high school).

**Box 2: The African Virtual University**

Many African Universities lack top-quality professors, up-to-date materials, adequate facilities for teaching and research, and modern curricula, particularly in science and technology. And even the meagre resources are accessible only to a privileged few – despite keen demand throughout Africa for qualified scientists, engineers and business leaders.

The African Virtual University was launched in 1995 to remedy this shortfall by offering high quality university education at a distance. Its mandate is to increase university enrolments and to improve the quality and relevance of instruction in science, engineering and business throughout the continent. In each participating country a local institution is competitively selected to oversee operations. It registers students, supervises study programs, and offers a structured study environment. It also helps with technology problems, provides hardware and software for interactive courses, and awards local credit for courses taken.

The African Virtual University's headquarters in Nairobi provides tutoring for students and training for professors and teaching assistants in the use of electronic teaching media. It installs and services all the required hardware and software, standardizes teaching practices and monitors quality control, sets price structures and conducts marketing campaigns. And it purchases the best available distance education curricula and instructional media from around the world and adapts them to local needs.

The university offers short courses in high-demand subject areas at affordable prices. So far it has installed 27 satellite receiver terminals, with 12 each in English-speaking and French-speaking countries and three in Portuguese-speaking countries. And to compensate for the dearth of scientific journals in African universities, it has developed a digital library.

Source: The African Virtual University – [www.avu.org/default.asp](http://www.avu.org/default.asp)

ICTs have been found to significantly enhance the learning process by enabling increased access to knowledge and more collaborative and interactive learning techniques, but are not effective substitutes for close personal supervision from teachers or parents (United Nations Development Programme 2001). Integrating ICTs into classroom practice has been on the agenda of the developed countries since the early 1980s, and most of the developed countries (i.e. Australia, Canada, UK, US) completed this integration by late 1990s (Galanouli et al. 2004). Contrary to that in many of the developing countries there is much work that needs to be done.

**Initiatives on narrowing the digital divide**

The third group focuses on narrowing the digital divide. Especially at the advanced economies many ICT initiatives targeting digital divide and disadvantaged people's – e.g. young, low-income, with disability, at remote locations – skill development are finding application ground. These initiatives have a huge potential role to play in providing help in achieving universal skill training and education through reducing physical and social barriers to education, promoting efficiency in education, improving the quality of teaching and learning (Guttman 2003).

Among many initiatives targeting to narrow the digital divide two American NGOs' – AmeriCorps and NetDay – project on providing technology resources to low income communities and schools can be referred as a success story (see Box 3).

### **Box 3: Providing technology resources to low-income communities and schools, the USA**

AmeriCorps is a network of American national service programs that engage more than 50 thousand Americans each year in intensive service to meet critical needs in education, public safety, health, and the environment. AmeriCorps members, in partnership with technology firms and non-profit organizations, are bringing technology support to schools and community organizations across America. Serving as program facilitators in schools located in low-income communities, AmeriCorps members interface with teachers and students, teaching technology-based programs during school hours and in after-school programs. NetDay is an American national non-profit organization with a mission to connect every child to a brighter future by helping educators meeting educational goals through the effective use of technology. NetDay provides AmeriCorps members with technical training and support, as well as orientation on community service.

NetDay AmeriCorps Bridge Program members serve as program facilitators in schools located in low-income communities, working with teachers and students, teaching technology-based programs during school hours and in after-school programs. To provide appropriate technology resources to low-income communities and schools, they:

- Installed and configured network computers in schools in partnership with large computer companies.
- Trained elementary school teachers as lead trainers on new computers.
- Created training manual for school technology coordinators to use for trouble shooting after computer installation.
- Developed a science curriculum using technology resources and training teachers and students on internet research for the curriculum.
- Refurbished and donated computers to students' homes.
- Instructed teachers one-on-one in software appropriate for classroom use.

NetDay organized programs with 27 local schools, provided professional development to members, and oversaw community service activities. AmeriCorps members provided K-12 children, teachers and parents with increased opportunities to access computers, and promoted effective education technology skills through local partnerships and national service. Support and involvement of the schools and the school systems was critical to program success.

The NetDay AmeriCorps Bridge Program had sites in low-income communities in Oakland and Costa Mesa, California, Detroit, Michigan, and Mercedes, Texas.

Between 2001 and 2003, NetDay AmeriCorps Bridge Program members in four communities provided 120,000 hours of service to 27 local schools. With the 8,896 computers that were installed, AmeriCorps members provided technology skills to 2,486 teachers and 39,779 students. In addition, they engaged 825 community service volunteers to assist with their mission.

Source: NetDay AmeriCorps Bridge Program – [www.netday.org/comm\\_nab.htm](http://www.netday.org/comm_nab.htm)

### **Initiatives on ICT employment generation through entrepreneurship**

The fourth type aims to provide ICT employment generation through youth entrepreneurship. Young entrepreneurs have been closely identified with ventures associated with the knowledge economy, particularly in Japan, China, India and Singapore. The entrepreneurial activities include but are not limited to: selling or marketing technology-based services (e.g. PCs, mobile phones, dial-up, cable, ADSL), young people as information intermediaries, opportunities for e-commerce-based entrepreneurship, telecentres as income generation for young people, and income generation through cable television (Curtain 2003).

The widespread use of English on the world-wide-web has created a need for local content and applications to enable non-English speakers to make use of it. This provides an opportunity for young people with language and ICT skills to work as information intermediaries (Curtain 2003). Young people can also make living through developing web sites in local languages to

facilitate communication between people and organisations (e.g. local websites of international NGOs).

Providing an e-commerce prospect to local communities would promote employment for youth. A good example is the Greenstar's global e-commerce project that is based on marketing local culture artefacts. Greenstar organisation promotes and markets local cultural products (e.g. music, art, handcrafts) of the developing nations by building sustainable community centres for gathering of people and their products and advertising and selling them via e-commerce websites (see Box 4).

**Box 4: E-commerce based on local culture**

Greenstar was founded in 1998 by a small group of people, including a high tech executive, the former head of the US Department of Energy's National Renewable Energy Lab, and a member of the White House Office of Media Affairs. Today, Greenstar embraces a stellar group of twenty Ambassadors as well, with world-class skills in finance, telecommunications, public relations, media production, international development, internet technology and marketing, medicine and education.

Greenstar has designed portable community centres to deliver local services efficiently and quickly in developing countries. Using solar power generated by large photovoltaic panels, these centre can drive water purifiers, small clinics, vaccine coolers, classrooms, digital studios and satellite or wireless links to the internet. Greenstar works with the people of each village to develop an e-commerce website, employing local musicians, teachers and art professionals to record the voice of the community. Greenstar packages the materials for various markets, both direct to the consumer, and through licensing to businesses.

To date, Greenstar has completed pilot installations in a remote Bedouin settlement on the West Bank in the Middle East; in a small community in the Blue Mountains of Jamaica; in the central India village of Parvatapur; and in a traditional Ashanti community in Ghana. Centres have been started in New Mexico, Brazil and Tibet as well with a South Africa program in planning. In over 60 other communities on all continents of the world, Greenstar has developed connections with young people aimed at building an "Edge Network" of people, skills, ideas, tools and cultural voices that will be of incalculable value to the whole world – and to the women, men, children and families of those villages.

Source: Greenstar – [www.greenstar.org](http://www.greenstar.org)

**Initiatives on promoting public-private partnership to generate employment**

The fifth initiative type attempts to promote public-private partnership to generate ICT related employment for young people. Public-private partnerships have the potential to enable governments to increase public infrastructure or public services by using fewer of their own resources while maintaining or even improving the quality of the standards offered. Public-private partnerships are particularly suited to ICT-related development programs because the private sector partner is in a good position to not only provide funding but also to assist with the knowledge and expertise required to operate ICT facilities (Curtin 2000).

Young people have the opportunity to gain employment through the growth of remote processing facilities that have started to be located out-side the developed countries. For example, many call centres, technical support, help lines, data conversion centres are located in South-East Asia (e.g. India). Many of these centres are established with public and private partnership.

A recent successful practice of public private partnership is the United Nations Development Programme (UNDP) and Coca Cola Malaysia ICT project. Partnership of these two international organisations resulted in a valuable ICT skill development and employment program for young people in Malaysia (see Box 5).

**Box 5: Public private partnership in relation to use of ICT in the Asia Pacific, Malaysia**

The project is a joint collaboration between UNDP and Coca Cola Malaysia. It endeavours to support the Malaysian Government in its effort to expand and strengthen the knowledge-society and the knowledge-economy and to revamp the educational system to respond to the knowledge-driven demands of the new economy. The project envisages the facility set up at selected schools will serve as a school/community “ICT hub” providing access to ICT training to other schools as well as communities in the vicinity.

The objective of the project is to create ICT community centres in six schools. Therefore, in this respect, the project shows similarities to another ICT initiative of the Malaysian Government – computer lab for smart schools project. However, this e-learning project differs from the computer lab project in one main aspect that these centres also function as the ICT centres for the community, thereby serving students, teachers and members of the community.

The outcomes of the project were highly positive. The continuing e-learning experience through this project provided employment opportunities for the young people who received training. The project also provided various benefits to a wider community, including:

- Students and teachers within selected schools.
- Parents of students and general citizens within surrounding communities.
- Various community associations.
- Student and teachers from nearby schools with limited access or no ICT facilities.
- Schools Division under the Ministry.
- State Department of Education.

Source: Asia-Pacific Development Information Programme – [www.apdip.net/projects/e-learning](http://www.apdip.net/projects/e-learning)

**Initiatives on ICT-based employment opportunities for disadvantaged youth**

The sixth one concerns the use of ICT-based employment opportunities to assist the most vulnerable among young people. This can be achieved by employing young people of acquired ICT skills to assist local development agencies and operators to deliver services to those most in need. For example, the use of low-cost ICT in the health system (such as internet and GIS) creates a demand for young people with ICT skills. These people could use relatively simple internet-based data management systems to exchange information such as patient records between healthcare professionals. Geographical information systems (GIS) is another common ICT tool that provides opportunities to identify a range of uses related to the poor and isolated (Curtin 2000).

The growth-led property reduction through digital opportunities project can be named as one of the successful practices. The initiative provided employment opportunities to many vulnerable young people through ICT skill training (see Box 6).

**Box 6: Youth-led poverty reduction through digital opportunities, Sitakund, Bangladesh**

Youth-led poverty reduction through digital opportunities is a UNESCO supported project aimed at poverty reduction and development through the innovative use of ICTs. To reduce poverty by providing digital opportunities for the rural poor (especially youths and adolescents in Sitakund), the project aims to:

- Create ICT based employment opportunities for disadvantaged youth.
- Collect and disseminate information on grass root problems, prospects, social movement, innovation and leadership to the policy level.
- Build awareness about ICT and its potentialities as means of poverty reduction.
- Share experiences with other NGOs, networks, interested individuals for replication of the project.

An ICT resource centre has been set up in an easily accessible place at Sitakund. A program officer runs the centre along with an associate program officer. This centre consists of two separate rooms. One room is entirely dedicated for the training activity. Two trainers conduct the training program. The other room is used as a library and for group work purposes. The users are allowed to use the other room through out the day, and they organise various cultural activity, issue based discussions and other recreational activities. The management extends all sorts of cooperation to run the centre smoothly.

Ethnographic action research is an integral part of the project activities. A full time researcher conducts the research with the direct supervision of UNESCO. The program officer extends all sorts of cooperation to carry out the research work.

The centre basically provides two types of skill development training on ICTs for the young and other people. One course is entitled “basic course on computer operation” and the other one is “basic course on multimedia”. A total of 80 local young and other attendees have already successfully completed these basic courses. These courses were conducted free of charge. At present both of these courses are going on simultaneously. The new users are going through the basic course and the previous students are receiving the advance course. These users are mainly selected by the project personals though intensive field visits by targeting the most vulnerable. There are two trainers hired from a reputed information technology institute to conduct the training program. A number of attendees have found employment as a result of the training they received through this initiative.

Source: ICT in the Hands of Poor – <http://ictpr.nic.in/sitakund/profile.htm>

**Initiatives on bridging the knowledge economy and the informal sector**

The seventh one targets to bridge the gap between the knowledge economy and the informal sector. This initiative type concerns the use of ICT to help bridge the gap between young people’s opportunities for self-employment in the formal economy and the high growth sectors of the world economy. The initiatives in this field provide informal sector workers with an opportunity to gain easy access to internet through telecentres to obtain information on markets or administrative procedures, and to publicise their services to a wider customers (Curtin 2003).

A successful initiative from India has shown that actually trade unions can play important roles in providing ICT training to their young members. This would lead to job security and income protection to many young entrepreneurs (see Box 7).

**Box 7: Self employed women's association, India**

Self employed women's association (SEWA) is a trade union in India for poor, self-employed women workers who earn a living through their own labour or small businesses and do not obtain regular salaried employment with welfare benefits like workers in the organised sector. Most of the members of SEWA are young women under the age of 25. These women are the unprotected labour force of India, and constitute a large proportion of Indian labour force.

SEWA's main goals are to organise women workers for full-employment whereby workers obtain work security, income security, and social security (at least health care, child care and shelter). SEWA organises young women to ensure that every family obtains full-employment and self-reliance both economically and in terms of their decision-making ability.

SEWA has been one of the first organisations in India to realise the potential for harnessing ICT to help women in the informal sector. It has sought to develop the organisation's capacity to use computers by conducting awareness programs and imparting basic computer skills to its team leaders, "barefoot" managers and members of its various member associations. Many of SEWA's member organisations have launched their own websites to sell their products in the global virtual market place. Since the entire membership of SEWA consists of poor self-employed women, giving its members access to software in the "language of daily use" is of great importance. Hence, efforts are being made to develop software to enable grass-roots workers and members to make the best use of the tools provided by ICT.

Recently, SEWA has started using telecommunications as a tool for capacity building among the rural population. SEWA uses a combination of landline and satellite communication to conduct educational programs on community development by distance learning. The community development themes covered in the education programs delivered include: organising; leadership building; forestry; water conservation; health education; child development, and financial services.

Source: Self Employed Women's Association – [www.sewa.org](http://www.sewa.org)

**Initiatives on putting young people in charge**

The last group of initiatives intends to put young people in charge. As it has been argued at the United Nations' World Youth Forum in August 2001, young people and youth NGOs are the best agents for delivering change for other young people. Therefore, young people's participation in the design and implementation of ICT-based initiatives are essential (United Nations 2001a, b).

Although there are limited recent examples putting young people in charge, the growing developments in e-democracy may empower youth's role in decision-making. Among a few initiatives around the developed world, the e-democracy leadership project of Queensland is worth mentioning (see Box 8). The success of similar e-democracy projects will most likely lead the youth to have a say in ICT and employment decisions which they would benefit greatly.

**Box 8: E-democracy leadership project, Queensland, Australia**

In 2001, the Queensland government created the e-democracy unit that is a dedicated unit within the Department of Communities. The role of the unit is to develop new and innovative ways for Queenslanders, particularly young people, to effectively engage with the state government and parliament through the use of ICTs such as web casting, online consultation and online polling. Queensland recently updated its innovative “e-democracy policy framework” that is endorsed at the highest level of state government. The e-democracy policy budget for 2004-05 was almost one million Australian dollars to continue implementation and evaluation of the government’s e-democracy agenda.

As part of this broad project the “get involved” directory was created to help citizen’s find out about and participate in decision-making. Internet broadcasts of parliament commenced in April 2003, over 5,600 citizens participated in e-polls with a follow up survey showing 95 per cent of respondents believing the e-petitions service represented an additional opportunity to provide input to government decision-making. Over 1,300 citizens subscribe to the “get involved” newsletter and authorities have benefited from tapping into a broader range of ideas from the community. The introduction of additional interactive elements such as online polls and discussion forums were developed for implementation.

Source: Queensland Government – [www.communities.qld.gov.au/community/edemocracy.html](http://www.communities.qld.gov.au/community/edemocracy.html)

**Incentives and funds for initiatives**

Incentives and funding availability are extremely essential factors in augmenting the success rates of abovementioned initiatives. The incentives and funds targeting organisations and young entrepreneurs are also critical for spreading the employment and skill development benefits across the communities and eventually to the rest of the nation. In this regard the Development Gateway Foundation’s ICT for the Empowerment of Youth Award (see Box 9) is a good example in rewarding outstanding achievements in the use ICTs in development. The following funds also can be given as examples of important funding mechanisms for youth skill development:

**Box 9: Global prize for ICT benefiting youth in developing countries**

Young people play a central role in the information society as being the first adaptors of ICTs. The Development Gateway Foundation rewards the best practices from around the globe with an award. This \$100,000 award will assist the winning organisation expand upon its success and acts as mentor to other prospective leaders in the field of ICT for development.

The award recognises outstanding achievement in the use of ICT to improve the lives of people in developing countries, particularly the ICT projects that empower or improve the conditions of youth. The best practice is being selected among the projects that provide leverage to the power of ICT to create fresh opportunities and address development challenges such as health, education, employment or other areas that are important to social and economic development. The goal of this incentive is twofold:

- to advance understanding of the role of ICT in development by recognising leaders in the field, and
- to assist in the spread of excellent programs and ideas across the world and support young people.

Source: Development Gateway Foundation – [www.developmentgateway.org/award](http://www.developmentgateway.org/award)

*The Umsobomvu Youth Fund*, which is a non-profit organisation in South Africa, works as a catalyst facilitating the creation of opportunities for youth employment and youth entrepreneurship by making investments that deliver effective programmes and working collaboratively with service providers, partners and young people (see [www.youthportal.org.za](http://www.youthportal.org.za)).

Similarly, *the Global Youth Fund* guides youth in running their development funds, which is the first fund that is managed by youth through a globally democratic process (see [www.globalyouthfund.org](http://www.globalyouthfund.org)).

Since its establishment in 1981, *the United Nations Youth Fund* has contributed over \$500,000 to more than 50 projects directly benefiting youth around the world. This fund provides grants of seed money in support of innovative youth-related action by governments and NGOs (see [www.un.org](http://www.un.org)).

*European Youth Programme* provides a non-formal education programme targeting young people aged between 15 and 25 years in 31 European countries. The programme has eight resource centres that are called SALTO-YOUTH, and their role is to provide different kinds of funds, resources and support to improve the quality of youth projects in priority areas ([http://ec.europa.eu/youth/index\\_en.html](http://ec.europa.eu/youth/index_en.html) and [www.salto-youth.net](http://www.salto-youth.net)).

### **Conclusions: Recommendations for the MENA region governments**

The world economy is in the midst of a profound transformation, spurred by globalisation and supported by the rapid development of ICTs that accelerate the transmission and use of information and knowledge. Intangible resources such as knowledge, know-how and social capital are the coal, oil, and diamonds of the twenty-first century for developed, developing and emerging economies (Carayannis et al. 2006). Therefore, in the new millennium solutions for promoting youth employment in the MENA region cluster around successful policy implementations on education, training, employment, narrowing digital divide, good governance, and moving towards the knowledge economy.

The UNDP Arab Human Development Report (2003) notes that economic and social development of the MENA countries require the provision of adequate human services to their people, health, education and training, particularly for young women and people living in rural areas, along with strong efforts to abolish illiteracy, especially in less developed MENA countries. The extent to which countries of the MENA region decrease the level of youth unemployment is dependent upon the level of education provided within the region. While there has been a consistent improvement in levels and access of education, young women in this region remain most adversely affected by low levels of access to education, skill training and employment (International Youth Parliament 2002).

The availability and quality of human resources often influence the impact of globalisation. The MENA region suffers from an inability to train, attract and retain human resources (knowledge workers). The process of globalisation, combined with the inadequacy of education within the MENA countries, has prompted the emigration of highly skilled knowledge workers. This also hinders the ability of the region's youth to determine the direction of globalisation in the MENA region. Globalisation has also revealed the tension that exists within the MENA region, between traditional forms of education based on cultural and religious practices and beliefs, and modern forms of education based on entrepreneurship and ICTs (United Nations Development Programme 2003).

Development and integration into a knowledge economy relies heavily on communication and information flows, and the developed world's communication and information revolution is lagging behind in the MENA countries. According to the Arab Human Development Report, the number of telephone lines in the MENA countries is barely one fifth of that in developed countries. Access to digital media is also among the lowest in the world. There are just 18 computers per 1,000 people in the region, compared to the global average of 78.3 per cent per 1,000 persons and only 1.6 per cent of the population has internet access. These indicators scarcely reflect a sufficient level of preparedness for applying ICT for knowledge diffusion.

However during the last decade, there has been a proliferation of satellite broadcasters. Satellite penetration reaches 10 per cent of the population in Egypt to 50 per cent in the Gulf, with emphasis placed on advertisements, entertainment and global media. Furthermore, there are over 380,000 internet users in the MENA countries, although women only account for four per cent of total internet users. For both sources of media, most content is in English and often insensitive to the Arab culture (International Youth Parliament 2002). Thus, for many countries in the MENA region, globalisation poses a threat to culture and tradition. However isolation from such technology may act as a hindrance to development and education in the region.

Unemployment is fairly high in the MENA region, and as the population increases, youth unemployment also continues to rise. This situation is particularly acute, given the rapidity of population growth among youth. The MENA region suffers the highest rates of unemployment in the world and a growing deficit of knowledge in both new and traditional forms. The unemployment rate ranges from 56 per cent in Gaza to 15 percent in Oman, and the rate of unemployed youth as a percentage of the entire population sits between 39.5 per cent in Morocco (1999) and 75.4 per cent in Bahrain (1995). In Iran, youth account for 70 per cent of a population of more than 66 million, but youth unemployment has other national and global impacts, notably increased violence, crime, drug use, poverty and political instability (International Youth Parliament 2002). Additionally the rapid rate of urbanisation in many MENA countries has increased levels of youth-specific unemployment, due to the lack of skills required in urban employment compared to rural employment.

The abovementioned figures note that the existing situation in the MENA region does not look very promising for the region's young population. However, during the last few years there has been a growing international attention on the region's problems, and the governments of the MENA countries have started to prioritise actions in dealing with the problems of the youth. In that perspective the following generalised recommendations might be useful in forming policies and in addressing some of the youth education, skill and employment problems of the MENA region.

Firstly, 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. All international best practices, as well as the successful examples and cases discussed in this paper, needed to be reviewed and considered by the governments of the region. However it is important to modify these initiatives by considering social, cultural and economic differences of the region. For being successful the initiatives must provide participation by various stakeholders, from state to private entrepreneurs, including but not limited to international and national NGOs, local authorities, youth leaders, the media, and the public.

Secondly, it is clear that there is an extensive potential for ICTs to generate employment for young people. However, this potential will not be realised unless a country has a range of supporting strategies in place, including an enabling environment. The enabling environment includes opportunity to participate in skill training in technology, access to data and information, economic support to young people who need to develop or improve skills, fair distribution of jobs and wages, free education for the ones that cannot afford, and quality work and training environments.

Thirdly, ICTs offer developing countries the opportunity to close the gap with developed countries and narrow the global digital divide. Applying ICTs in education is key to provide young people with ICT skills. Therefore, governments need to ensure that they provide quality education to all, and ICTs are integral components of education planning and school curricula.

Fourthly, 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. ICTs are also beneficiary tools to support young people's participation in decision-making processes.

Fifthly, mentor support for starting ICT-related enterprises is a key service that governments, NGOs or international organisations could organise to provide advice and guidance to young entrepreneurs. The mentor program may also include providing incentives such as tax return, grants or micro-finance to encourage young people and their SMEs to undertake business.

Sixthly, partnership with international organisations such as United Nations and its agencies may help in implementing new best practices. These organisations assist developing countries and regional institutions of developing countries in building global, regional, national and local networks of partnership.

Lastly, investing only on technology is not the solution of the young population's problems, investing on social and human capital makes a better change. As Mansell and When (1998) indicated investing in mere technology and not human capital will only lead to increase in energy consumption and not in economic growth and employment opportunities for young people.

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