



The Global Skills Gap and the Changing Nature of Work and their Impact on the Digital Age

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Synopsis

In 2017, the state of *the Global Skills Gap* and the *Changing Nature of Work* in the *Digital Age* are underpinned by the following facts:

1. The degree and severity of skill gaps and the nature of work vary widely based on national economic, cultural and environment conditions.
2. There is a global shortage of skilled workers. No country has more skilled, digitally trained workers than they have jobs for.
3. The global skills gap is growing and is extremely expensive both for businesses and society as a whole.
4. As the Fourth Industrial Revolution gathers momentum, the very nature of work is radically changing; thus, affecting skill requirements.
5. The global aging populations are shrinking tax revenues; putting pressure on younger generations to fill the gap.
6. Super-specialized skill sets are being sought after globally. Humans, machines and robots will increasingly compete for this type of work.
7. In most countries youth unemployment is very high.
8. The *Digital Age* is requiring new sets of skills and adoption of new models of public education that emphasize coding, programming and computer science must be adopted
9. The rate of innovations is creating the need for new skills to be delivered faster than the rate of educational responses.
10. Many people are clinging to the *Industrial Age* concept of jobs; while seismic plates shift the grounds requiring *Digital Age* skills.

11. Female are underrepresented in Science, Technology, Engineering and Math, thus stymying their employment within the Information, Communications and Technology industry and ICT related job opportunities.
12. Younger generations have different expectations from employment and the workplace than older generations. These expectations will widen as contingent work becomes the global norm.
13. Contrary to popular belief, the Digital gap is widening, putting pressure on countries to catch up. Public education must adopt new approaches to lifelong learning.
14. Some countries are progressing faster and realizing more benefits from Digital technologies than others.
15. Employers are increasingly struggling to find the skills they need among the global talent pool; thus, driving up wages and benefits.
16. Employers are finding it more and more difficult to hire and retain qualified talent.
17. Technology disruptions create more jobs than they take away, leaving opportunities for people to be re-skilled.
18. Competition for those with the in-demand skill sets is booming; while those without the necessary training are finding it harder than ever to find jobs.
19. New approaches are emerging to address new skill requirements and the nature of work.
20. A large number of jobs being performed today will no longer exist in the near and distant future.
21. Often ignored when discussing the *Global Skills Gap* and the *Future of Work* are cognitive/non-cognitive skills (soft skills) necessary for success. These skills consist of subjects such as teamwork, empathy, interpersonal relationships, commitment and work ethics. In the Digital Age these skills are not stressed but much in demand.

About WITSA

WITSA is a global consortium of leading ICT industry association members from over 80 countries/economies.

As the leading recognized voice of the global ICT industry, WITSA aims to drive transformation and grow the industry, given that ICT is the key driver of the global economy: WITSA's members and stakeholders comprise national associations, multinational corporations, institutions and organizations, researchers, developers, manufacturers, software developers, telecommunication companies, suppliers, trainers and integrators of ICT goods and services. As such, they represent a large and obviously vital constituent group for whom the effective balancing of concerns and rights affecting the security, privacy and information capability provided by ICT products and services underpins business development and economic activity.

Context

From an ICT industry perspective, these facts require different measures and considerations to effectively address.

For the purpose of this paper, we will examine the impact of the *Global Skills Gap* and the *Future of Work* from two perspectives: 1. Digitally Developed countries and 2. Digitally Developing countries.

Digitally Developed Countries

Digitally developed countries are those either fully engaged employing digital technologies or in the process of becoming fully engaged; maximizing the benefits of ICT for their citizens and society.

Digitally Developing Countries

Digitally developing countries are those either not engaged or minimally engaged in ICT development; benefiting very little or not at all from ICT's.

NOTE: There is criticism of the use of the term *developing country*. The term implies inferiority of a *developing country* or *undeveloped country* compared to a [developed country](#), which many countries dislike. This paper intends only to use the words developing countries as it applies to ICT development.

NOTE: More than three-fourths of the world's population live in so-called developing countries: nations that may not have a stable economy, energy supply, or advanced technology, and whose population may lack access to jobs, food, water, education, health care, and housing.

Obviously, those countries who have not engaged in ICT development must take different actions than those engaged, if they eventually wish to also receive maximum benefits for ICT.

Digitally Developed Countries

Digitally developed countries face the challenge of hiring and retaining skilled employees to remain competitive. In many cases, they are also pressured by high youth unemployment and aging populations. They are also experiencing dramatic changes in the way work is being performed and where it is being performed. It is critical therefore, that these countries address these issues in a comprehensive and holistic way.

WITSA's RECOMMENDATIONS AND PRINCIPLES FOR DEVELOPED COUNTRIES

WITSA suggests the following recommendations and principles:

1. **Leaders at all levels** of government, industry, academia, institutions and the civil sector must recognize that GLOBALIZATION DRIVEN BY the *Digital Age* is here to stay and that if they wish to remain competitive now and in the future, they **must come to terms with embracing the new age**.
2. As innovations require new skills to be **developed, a close, synergistic relationship between governments, industry and academia needs to exist**. It is not the traditional, cordial relationship that is being recommended. By close relationships it is meant working very closely together on honing in on particular skill-requirements necessary to meet the demands of the *Digital Age*.

3. **Submerging students at a very young age in all aspects of digital technologies, including all Science, Technology, Engineering and Math (STEM) studies.**
4. While innovation remains tightly coupled with STEM subjects. Art + Design are poised to transform our economy in the 21st century just as science and technology has. **We need to add Art + Design to the equation — to transform STEM into STEAM.**
5. A collaborative and comprehensive approach must be taken to **expand access to education and skills training** for all future workforce participants — not just a select few.
6. Steps must be taken by all stakeholders to ensure that young people **learn the soft skills**, such as teamwork, empathy, interpersonal relationships, commitment and work ethics, that they will actually need for all future scenarios.
7. **Governments should refrain from erecting barriers to the free flow of human talent across boundaries.** Countries that place barriers opposing the global exchange of talent are risking the success of their own businesses, economies, and societies. And those that have remained wedded to protectionist measures that curb the mobility of global talent or artificially raise the costs of skilled workers are putting their businesses and other institutions at a distinct disadvantage at home and in the global economy.
8. **Industry should invest in youth by setting up science and math scholarship programs designed to foster an early interest in technology.**
9. **Industry has been working closely with schools, universities, employment agencies and NGOs** to set up innovative programs to supply people with key skills necessary for the digital transformation. Industry has been promoting ICT and STEM careers through their online platforms training people with the skills needed to get into digital jobs. However, industry should look at innovative approaches to further develop workforce programs aiming to improve the pipeline of STEM workers. New and innovative models are needed to adapt to the fast-changing environment, where old actors come together creating added value beyond the traditional cooperation models. The following cooperation models offer a potential to reduce the skills gap.
10. **Industry, academia and government should work towards bridging the gap between digital job opportunities, skills of people seeking digital employment, and digital training opportunities** (through public and private training organizations) by building national repositories, perhaps in the form of dedicated websites.
11. **Government and industry must do a better job at inspiring girls to pursue ICT studies and careers and encourage better gender balance by promoting a stronger role of women.** Industry can play an important role by collaborating with Schools, Universities and Associations in order to promote Digital opportunities and to take all measures needed to facilitate women work placement and integration (i.e. champion female role models; open days in tech businesses; etc.). Industry should promote inclusion initiatives in companies to attract the attention from girls into the tech space (i.e. champion female role models; open days in tech businesses; coding and app development workshops)

Digitally Developing Countries

We must recognize that digital development in developing countries need to focus on providing basic services affecting housing, health, education, communications, clean water and the like. ICT applications need to address these basic needs before providing higher level benefits. Needless to say, the exercise or concern of hiring and retaining skilled ICT workers in a country where information & communications technologies are not being employed makes little sense. These countries may also suffer as the nature work changes. They will most certainly be left out as work is dispersed around the globe.

As their needs differ from so-called developed countries, ICT's in developing countries are having a dramatic impact in addressing basics requirements; enabling a wide range of benefits. There are examples each day benefits ICTs are delivering in nearly all aspects of societies.

WITSA'S RECOMMENDATIONS AND PRINCIPLES FOR DEVELOPING COUNTRIES

1. No different than the developed countries, **leaders at all levels of government, industry, academia, institutions and the civil sector must recognize that the *Digital Age*** is here to stay and that if they wish to be competitive in the future, they must come to terms with embracing the new age.
2. **Developing countries MUST have a *Digital Plan or Digital Agenda***. *At every opportunity as the country develops elements of the plan should be implemented. It should be noted that proven digital agendas are available to developing countries from other governments. Infrastructure will be among the top priorities.*
3. Leaders from industry and government need to work together to **establish and sustain an ICT industry within their nations**.
4. **Governments should seek successful models and examples of private investments** in infrastructure and broadband connectivity.
5. **Science, Technology, Engineering and Math (STEM) curriculum needs to be stressed and imbedded as much as feasible in schools**, in order to prepare future generations for the *Digital Age*.
6. While innovation remains tightly coupled with STEM subjects. Art + Design are poised to transform our economy in the 21st century just as science and technology has. **We need to add Art + Design to the equation — to transform STEM into STEAM.**
7. A collaborative and comprehensive approach must be taken to **expand access to education and skills training** for all future workforce participants — not just a select few.
8. Steps must be taken by all stakeholders to ensure that young people **learn the soft skills**, such as teamwork, empathy, interpersonal relationships, commitment and work ethics, that they will actually need for all future scenarios.
9. **Developing countries can avoid making costly mistakes** in engaging in digital technologies by conferring with those who went through the process of becoming digitally engaged.

10. **Governments and the ICT industry need to form partnerships** to provide maximum benefits for ICT.
11. Governments and educational institutions are encouraged to **take advantage of existing educational resources** available at little or no cost, i.e. Khan Academy.
12. **Revise existing curriculum for teachers and retrain existing teachers** so that they adequately prepare students to compete in a *Digital Economy*.
13. As innovations require new skills to be **developed, a close, synergistic relationship between governments, industry and academia needs to exist**. It is not the traditional, cordial relationship that is being recommended. By close relationships it is meant working very closely together on honing in on particular skill-requirements necessary to meet the demands of the *Digital Age*.
14. **Submerging students at a very young age in all aspects of digital technologies, including all Science, Technology, Engineering and Math (STEM) studies**.
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16. **Industry should invest in youth by setting up science and math scholarship programs** designed to foster an early interest in technology.
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FURTHER READING

- [DIGITALEUROPE AND THE EC'S SKILLS STRATEGY 2016](#) (January 2016)
- [ITI: STEM & America's Future](#) (March 2016)
- [Why Business Leaders Need to Take on The Education Revolution](#) – TechCrunch, December 21, 2015
- [Vocational Education's Global Gap](#) – BBC News, December 16, 2015
- [Closing The Skills Gap](#) – The Bangkok Post, December 21, 2015
- [The School-To-Work Transition Is Broken: Here's Who's Fixing It](#) – Forbes, December 16, 2015
- [Short Term Unemployment Down But Long-Term Skills A Problem](#) – The HR Director, December 11, 2015

- [There Are No Shortages Of “Digital Skills”, Only Of Employers Who Train Their Staff With The Skills They Need. But, Why Don’t They?](#) – Computer Weekly, December 14, 2015
- [“Only High Quality Apprenticeships Can Plug The Skills Gap”](#) – The Daily Telegraph, November 25, 2015
- [Reimagining HR for 2025: Preparing HR For A Changing Workplace](#) – Aon white paper
- [Manchester United and Aon: Commitment to Apprenticeships](#) – Aon.com
- [The Future of Jobs](#) 2020 (World Economic Forum)
- 2016 "[Networked Readiness Index](#)" from the World Economic Forum
- [The trillion-dollar difference](#) (Korn Ferry Institute)
- [Companies are in short supply of cyber security talent](#) (geektime.com)
- [Disrupting Unemployment – The World’s Most Underutilized Resource: People](#) (i4j)
- [The Holy Grail of future work](#) (The Jordan Times)