

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

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IS DIGITALIZATION A KEY TO SUSTAINABILITY? (A REVIEW)

Dr. PAYAL BASSI
ASSOCIATE DIRECTOR
UNIVERSITY SCHOOL OF MANAGEMENT
DESH BHAGAT UNIVERSITY
MANDI GOBINDGARH

Dr. RAJNI SALUJA
ASSOCIATE PROFESSOR
UNIVERSITY SCHOOL OF MANAGEMENT
DESH BHAGAT UNIVERSITY
MANDI GOBINDGARH

ABSTRACT

Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. In September 2015, 193 countries adopted the UN Sustainable Development Goals (SDGs). The 17 SDGs constitute the most ambitious global agenda ever developed for social, economic and environmental advancement of the world. They include the objective to end poverty, abolish hunger, accomplish gender equality, foster equitable economic growth, reduce inequality and address climate change by 2030 or earlier. It is being observed by the sustainable development policy-makers that all countries, from the poorest to the richest face the challenge for achieving a healthy balance between economic, social and environmental pillars of sustainable development through sound policy, technology enabled innovation and socioeconomic transformation. The purpose of the paper is to see that how global economy is undergoing a fundamental structural reformation driven by digital economy. World economy is becoming ever more digital, that growing use of and investment in digital technologies and knowledge based capital is profoundly transforming our societies. The present study is an attempt to focus on the fact that how advances in healthcare, education, communication, provision of basic facilities and services is making life easier for the people. It is predicted that 8.5 billion people will be living dignified lives by 2030. Digital solutions can dose the achievement of SDGs by transforming the way people live and work. The paper will also highlight the hurdles and regulatory barriers in achievement of digital economy. It can be concluded that digital solutions like e-health, e-learning, e-banking, e-governance and many more can play a key role in helping the world achieve the SDGs.

KEYWORDS

digital solutions, sustainable development goals, world economy.

1.0 INTRODUCTION

We are responsible for our coming generations. Whether we want to leave for them polluted air, contaminated waters, poisonous soil, society obsessed with crimes, gender inequalities, malnourishment or fresh air, safe and clean drinking water, fertile soil, crime-free society, gender equalities and security and sufficiency in food choice is ours. Development should not be done at the cost of health, income inequalities, gender discrimination, environment etc. The present paper relates to achievement of sustainable development goals with help of digital solutions. Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. In September 2015, 193 countries adopted the UN Sustainable Development Goals (SDGs). The 17 SDGs constitute the most ambitious global agenda ever developed for social, economic and environmental advancement of the world. They include the objective to end poverty, abolish hunger, accomplish gender equality, foster equitable economic growth, reduce inequality and address climate change by 2030 or earlier. It is being observed by the sustainable development policy-makers that all countries, from the poorest to the richest face the challenge for achieving a healthy balance between economic, social and environmental pillars of sustainable development through sound policy, technology enabled innovation and socioeconomic transformation. The purpose of the paper is to see that how global economy is undergoing a fundamental structural reformation driven by digital economy. Digital technologies are transforming the entire globe. It is predicted that 8.5 billion people will be living dignified lives by 2030. (www.cgap.org). Digital solutions can dose the achievement of SDGs by transforming the way people live and work.

2.0 OBJECTIVES OF THE STUDY

1. To focus on the fact that how digital advances in healthcare, education, communication, provision of basic facilities and services is making life easier for the people.
2. To highlight the hurdles and regulatory barriers in achievement of digital economy.

3.0 DATABASE FOR THE STUDY

The study is secondary based. It is descriptive in nature. The various governmental and non-governmental publications in electronic and non-electronic form are referred. Various reports and journals devoted to subject of digital economy and sustainable development are referred. National and local newspapers and web-sites such as of World Bank, UNO are also referred to. It is a review paper extracted by doing the review of previous studies done on the subject.

4.0 RESULTS & DISCUSSIONS

4.1 STATUS OF THE WORLD TODAY

- Every country has achievement gaps in > 50% of SDGs.
- > 25% of countries have achievement gaps in all 17 SDGs.
- Digital solutions have up to 23 times higher diffusion speed and reach than traditional approaches. (www.cgap.org)

4.2 DIGITAL IMPACT HIGHLIGHTS IN 2030

- Digital solutions indispensable to achieve all 17 SDGs and > 50% of the 169 targets.
- 1.6 billion people benefitting from e-healthcare (target 3.8- Achieving Universal health care)
- 720,000 lives saved and 30 million injuries prevented on the world's roads (target 3.6- Halve deaths and injuries from road accidents)
- US \$ 9 trillion of enabled revenues and cost savings (target 8.1- Sustain per capita economic growth in accordance with national circumstances, and in particular at least 7 percent gross domestic product growth per annum in the least developed countries) (www.cgap.org)

4.3 REASONS FOR DIGITAL SOLUTIONS AS KEY TO SUSTAINABLE DEVELOPMENT

The world has less than 15 years to meet the ambitious sustainable development goals. So there is a need for speed and impact. Digital solutions hold the key for three main reasons:

- Digital solutions can diffuse extremely quickly across all aspects of economy and society- reaching people in any income bracket, virtually anywhere.
- Digital solutions genuinely put people at the heart of products and services, allowing for attractive offerings at reduced costs and improves sustainability.
- Digital solutions make good business sense.

4.4 DIGITAL SOLUTIONS CATALYZES SUSTAINABLE DEVELOPMENT GOALS

Digital solutions are enabling and sustaining new business models all over the world. The basic idea of digital economy is that manufacturing of products, services, life- long learning and innovation are made possible by modern technology, support transmission and processing in the context of market globalization and sustainable development. Digitalization of economies are fundamental changes affecting the relationship between individual, countries, societies and economies. The Industrial internet can make a significant contribution to sustainable development, in particular helping the international community to meet the ambitious SDG agenda by 2030.

TABLE 1: DIGITAL SOLUTIONS THAT CATALYZE SDG ACHIEVEMENT PER YEAR IN 2030 (US \$ trillion)

E-commerce	0.6 trillion
E-work	0.5 trillion
Smart Building	0.2 trillion
E-government	0.1 trillion
E-learning	0.1 trillion
Others*	0.2 trillion

Source: www. cgap.org

*Includes connected private transportation, e-banking, e-government, e-health, real time disaster warnings, smart agriculture, smart conservation, smart energy, smart logistics, smart manufacturing, smart police, smart water management, traffic control & optimization

4.4 PROGRESS TOWARDS ACHIEVING SDGS THROUGH DIGITAL SOLUTIONS

- The very first SDG of ending extreme poverty explicitly mentions the importance of access to financial services. When people are included in the financial system, they are better able to climb out of poverty by investing in business or education. Digital payment services also allow people to collect money from far flung friends and relatives when faced with economic pressure reducing the likelihood that they will fall into poverty. The case in point is Kenya's flagship mobile money program, M-Pesa. It showed that when faced with financial shock users are more likely to receive remittance as compared to no-users.
- The second SDG focus on zero hunger. This can be achieved through smart agriculture. Smart agriculture includes optimized farm management and automated irrigation system, precision agriculture including soil sensors and satellites, integrated real time weather, information traceability and tracking systems. This will increase agricultural productivity while reducing the need for scarce inputs such as water. The case in point is Gamaya, a Swiss company which uses industrial internet technologies to provide solutions in precision agriculture, a farming management technique based on observing, measuring and recording to inter and intra field variability in crops.
- The third SDG is Good health and wellbeing. This can be achieved through e-health for example remote diagnostics, video conferencing, electronic data storage, wearable biosensors, personalized medicine, DNA sequencing etc. This will make health more accessible and affordable and enables better quality. The case in point is Telemedicine which uses ICT networks to overcome geographical barriers to increase rural communities access to health services while decreasing costs and improving diagnosis. Another case in point is Sensor Technology and Analytics to Monitor, Predict and Protect Ebola Patients (STAMP2) which has been tested on EBOLA patients in the United States.
- The fourth SDG is to ensure Quality education. This can be achieved through e-learning which includes video conferencing, advanced data analytics, Massive open online courses (MOOC), open community platforms, recognition software. This will make education more accessible, affordable and of higher quality.
- The fifth SDG is clean water and sanitation. Industrial Internet solutions can improve clean water delivery and sanitation of which 1.2 billion people world-wide are deprived. The case in point is Sarvajal, an Indian social enterprise has developed low cost reverse osmosis technology to provide clean water in rural areas as well as smart meters to remotely monitor the quality and quantity of water.
- Another SDG is Affordable and clean energy. Digital solutions make wide power generation more efficient. The case in point is Vestas, the Danish wind turbine company. This company collects data from its globally situated turbines and analyses it in Denmark to better understand the impact of temperature, wind speeds and air pressure on turbine performance and to make precise service and maintenance schedules. Mkopa, a firm delivering solar based, off grid lightning solutions to people in Africa at incredible 100 percent growth rates and directly contributing to SDG target for improving the access to clean energy. A wireless sensor network is being used in the country to improve water management in poor and semi-arid areas.
- Another SDG is Sustainable cities and communities. The industrial internet also enables smart cities- urban settlements that aim to make a better use of the public resources, increase the quality of the services offered and reduce operational costs. The case in point is Siemens Intelligent Parking Solution. The system uses a combination of ground and overhead sensors to collect real-time parking space availability information while taking vehicle size requirements to account.
- Another SDG is Peace and Justice, Social Institutions. This can be achieved through e-government and smart police for example big data analytics, open government data sets, e-identity, online voting, predictive analytics and algorithms for crime forecasting, augmented reality, drones and robotics and neuroscience. This will reduce crime and enable better participation and transparency and will strengthen people's democratic rights. The case in point is government procurement system in Mexico. Mexico's federal government established 'Compranet' for government procurement as part of its efforts to fight corruption by automating procurement procedures. By facilitating a process of bidding and reverse bidding on line, it seeks to make government purchasing more efficient and transparent. The system allows the public to see what services and products the government is spending its resources on and what companies are providing them with these services.

Digital solutions like e-health, e-learning, e-banking, e-governance and many more can play a key role in helping the world achieve the SDGs.

5.0 BARRIERS AND HURDLES IN ACHIEVING DIGITALIZATION**5.1 REGULATORY BARRIERS FOR DIGITAL SOLUTIONS**

- Inadequate regulatory environment
- Unreliable application of regulation and the rule of law
- Lack of investment and financing incentives
- Limited awareness of ICT's potential among stakeholders for example policy makers. Organizations, NGOs etc.
- Excess taxation on ICT services.

5.2 SUPPLY SIDE HURDLES

- Lack of available capital for financing
- Lack of cross-sector collaborations/partnerships
- Lack of integrated standards across technologies
- Lack of relevant physical infrastructure. e.g. electricity wireless spectrum

5.3 DEMAND SIDE HURDLES

- Low affordability of ICT solutions
- Lack of ICT skills
- Lack of suitable application
- Lack of acceptance digital solutions
- Gender-specific barriers e.g. lower purchasing power, lower literacy rates, mismatch with cultural role, expectations
- Lack of applications in local language.

6.0 CONCLUSIONS

It can be concluded that digital solutions can make a significant contribution to sustainable development, in particular helping the international community to meet the ambitious SDG agenda by 2030. The digitalization is present now in every economic sector and every important domain of society, changing our every-day life (such as shopping, communication, transportation, entertainments, education level and style of consumption), the business models, the way to think and act in policy and practice. People want access to technology for the benefits it can bring to their own lives. When large number of people, voluntarily adopt new digital solutions, automatic, social, economic and environmental benefits flow from them and many of which have direct and indirect bearing on the SDGs.

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