

## A STUDY ON ROLE OF ICT FOR SUSTAINABLE DEVELOPMENT

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### **Abstract:**

*Information and Communication Technology has a significant role in consumption of global resource and greenhouse gas (GHG) emissions , particularly due to strong growth rates. Yet, wise use of ICT can support other domains in allay (e.g. in reducing GHG emissions and resource consumption), monitoring of resources and environmental impacts and adaptation to unavoidable changes. This article gives an overview on various practices used to reduce the direct impact of ICT in these way of sustainable growth. The main focus however, is on the fact that ICT has a strong advantage properly applied in other fields and can grow from being part of the problem to becoming part of the solution. Finally, it briefly summarise the potential of ICT to support education, public awareness and in finding a analytical approach which will effectively help the decision makers in using ICT in such sustainable development.*

**Keywords:** Sustainable development, Information and communication technology

### **Introduction**

ICTs stand for information and communication technologies which means the way were we get information, use those information and communicate the information..It can be hereby defined, as a “diverse set of technological tools and resources that are used to communicate, and to create, disseminate, store, and manage information.”It is the conduit that passes information and knowledge to individuals in order to get them economically and socially empowered. In the modern economic context information and communication technology is seen as an important factor of production of a knowledge-driven (new) economy. Many researches states that knowledge, innovation and technological improvement become important factor for socio- economic growth. Further more modern growth theory highlights the importance of knowledge and technology for sustainable growth. Technological advances in the past few decades have highly increased the competitive nature of the modern economic business world. Companies have used software, computers and the Internet to transform and innovate their businesses from local pace of business to national and global market conditions. Many companies have responded to these changes by automating their business processes and capturing industry-related information and using it to their

convenience and advantage. Technology has also compelled businesses to remain flexible to such changes, adapting their operations to newer and better technological perspective.

Sustainable development has been defined in several ways, but the most obviously quoted definition is that "Sustainable development is development that satisfies the needs of the present without compromising the ability of future generations to meet their own needs."

### **I. Evolution of ICT Infrastructure Industry in India**

The evolution of Indian ICT can be traced in three phases: ie. during early 90s mid 90s, and post-90.

#### **Stage 1: Prior to 1980**

In the first phase, Indian IT sector was initially started with hardware products and services and software industry did literally not emerge in India until 1960. Government protected the hardware sector through high tariff barriers ie. The Import tariffs were high to 135% on hardware and 100% on software. Even the exporters were not eligible for bank finance and licensing. In the west, there was a greater demand for software development as the inbuilt software with which the systems were insufficient to perform all the operational activities accurately. So, to earn more foreign exchange, the Indian Government found out the potential of software sector. In 1972, the government formulated a new software export scheme, in which it was decided to import hardware and export software. TCS Ltd. became the first company to accept such scheme. In 1974, the software export was started in India.

**Stage 2 1980 to 1990** : During this phase, in spite of government initiatives, the software exports could not be reached at the expected level because of two reasons.

(i) First, the export of software was dependent on the imports of hardware and the procedural aspects were too ponderous.

(ii) Secondly, there were no proper infrastructural facilities for software development. In order to encourage more participants in this sector, it was necessary to reduce all tariff measures like import duty and to simplify import and export procedure.

To overcome the stated problem, a new software policy was formulated. According to this policy, and as a result the import procedure was simplified and the import duty for import on hardware for software developers was reduced. In 1986, the government took some promising corrective measures to develop IT sector. As a result, Indian Government software policy and liberalized the IT sector. According to this policy, the imports of hardware were de-licensed and were also made duty free for exporters. This policy has reduced a number of entry barriers making the growth in this sector more certain.

**Stage 3- 1990 to 2000:** This stage has witnessed more vibrant competition in the IT sector. During this period, there were some remarkable changes in Indian economy, including trade liberalization, relaxation in the entry barriers, opening up of Indian economy for foreign investments and devaluation of rupee. Due to the liberalization, foreign direct investment flow started increasing and more multinational companies were established in India

**Stage 4 Post 2000:** The global issues like year 2000 software problem(Y2K), the dotcom crash and the recession in the US economy left no option for many US firms to utilize the services of the Indian market firms. This helped in placing the Indian IT industry on the global map. Post 2002-2003, the industry had marked a robust growth rate. During this stage, there was an increase in the Indian client base, large sized contracts and a strong global delivery model.

## **2.2 Telecommunication sector in India**

India has one of the fastest growing telecommunications sectors with over 1.1 billion users and connections. It is the second largest in the world. The communication services available in the country are comparable to the best in the world and major technology improvements like 3G, 4G/LTE have been adopted in line with the developed economies. The sector continues to grow rapidly and is amongst the largest contributors to the Indian economy's GDP and is also one of the significant contributors to FDI in India. The foundation of this landmark growth has been possible only through a substantial Information, Communications and Technology (ICT) infrastructure across India.

As a result, Indian IT Industry's contribution to the world's information technology sector is of highest standing.

## **II. ICT and Sustainable Development**

The report of The International Chamber of Commerce ICC has recently indicated the role of ICT in Sustainable development process in its Policy statement. This policy statement will illustrate how ICT is equipping populations with tools to relieve poverty, access education, provide healthcare and reduce CO2 emissions.

The diagram below represents an overview of the components that are needed to leverage ICT for sustainable economic development and their inter-relationship.

The above diagram represents that each of these components can impact the potential of ICT to be leveraged for societal benefit

- The center layer being the infrastructure, applications and services, and user engagement it highlights the foundational role of ICT and how the different ICT

functions are built on top of each other to deliver more value to users.

- The multi-coloured ring represents the different policy issues (economic, technical, social/cultural, governance) that arise through the use and development of ICT. These issues can be overlapping and hence need expertise advice to get it addressed effectively.
- The ring around the policy issues represents the stakeholder groups that should collaborate to address evolving policy issues at hand.
- The outer layer represents sustainable development opportunity

#### **IV. Conclusion**

Thus from the above analysis it can be concluded that ICT industry has contributed a lots in promoting the economic growth of the nation through employment generation, direct GDP contribution and exports revenue generation, playing a significant role in the development of the country. In addition, this sector has played a prominent role in emergence of new services, Workforce transformation and Business innovation. ICT has also helped to the rise of entrepreneurship, by making it much easier for self-starters to access best practices, marketing legal and regulatory information and investment resources. As the internet provides the new ways of reaching out, approaching and serving to customers though which it helps to improve efficiency, increasing competition and streamline business processes. Therefore it demands for major initiatives by the government to help ICT industry to grow even more rapidly as it is one of the key drivers of the economic growth of the nation.

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