



# Brainstorming Opportunities and Challenges for Economic Development Arising from the Digital Revolution

Dr. Ajay Krishna Tiwari<sup>1</sup>, Mr. Mudit Tiwari<sup>2</sup>

<sup>1</sup>Academician, Economist and Ph.D. Guide.

<sup>2</sup>M.B.A Student IU University.

## Abstract

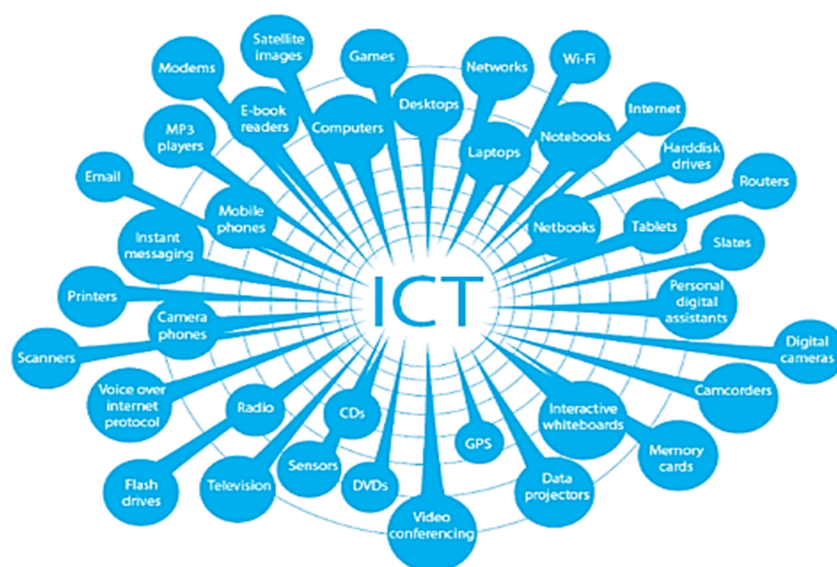
Digital transformation features prominently in the work programs of public authorities around the world, aware of its potential for their economies. OECD countries formulated their objectives at the 2016 Ministerial Meeting on the Digital Economy held in Cancún. To make the most of digital transformation for innovation, growth and social prosperity, they are focusing their efforts on improving the impact of the revolution on the action of public authorities, measuring and establishing an integrated action framework to support overall. -Government viewpoint. Although the implementation of national digital strategies is well underway in the OECD area, progress remains to be made in terms of coordination. In fact, there are only a few countries where coordination of the national digital strategy is entrusted to a senior official or organization dedicated to digital. Despite the lingering effects of the crisis, IT activities and information services are progressing and the outlook is promising.

**Keywords:** Economic growth, digital economy, digital strategy, digital revolution, ICT sector, global economic crisis.



## Introduction

Since the global economic crisis, there has been an overall decline in value added in the information and communications technology (ICT) sector in the OECD area, a development in line with total value added. On the other hand, within the ICT sector, there were definite declines in telecommunication services and manufacturing of computer and electronic equipment, but progress in computer activities and information services, and stability in software publishing. These trends, which are reflected in ICT employment statistics in OECD countries, are expected to be confirmed in the coming years, as the share of venture capital investment in ICT- an indicator of business prospects- has increased. Returning to 2000 peak, the ICT sector remains an essential engine of innovation; It represents the largest share of R&D spending by companies in the OECD region and more than a third of patent filings worldwide. Communications infrastructure and services are being upgraded to cope with the explosion of data.



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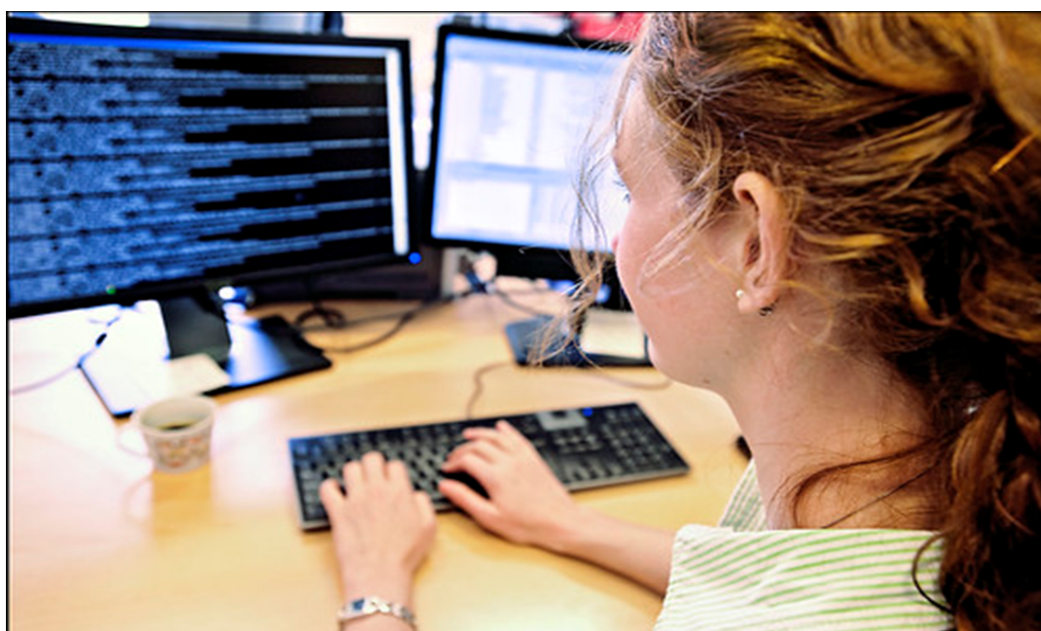
## Competition, innovation and investment in many countries

Communications markets are growing due to demand and the development of regulatory frameworks that promote competition, innovation and investment in many countries. The share of revenues devoted to investment in telecommunications has increased and operators are continuing to deploy optical fiber. Average prices for fixed and mobile broadband have declined, while the number of subscriptions has increased; Mobile data usage has increased rapidly in some countries. The convergence of telecommunications and broadcasting is giving rise to mergers and acquisitions and reforms of regulatory frameworks and institutions. Speeds of one gigabit per second (Gbit/s) have become common, and we are now seeing the first commercial offerings offering 10 Gbit/s, which is enough to support the rapid growth of data, including formally, includes the advent of connected and autonomous. Vehicle.



### ICT use is breaking records

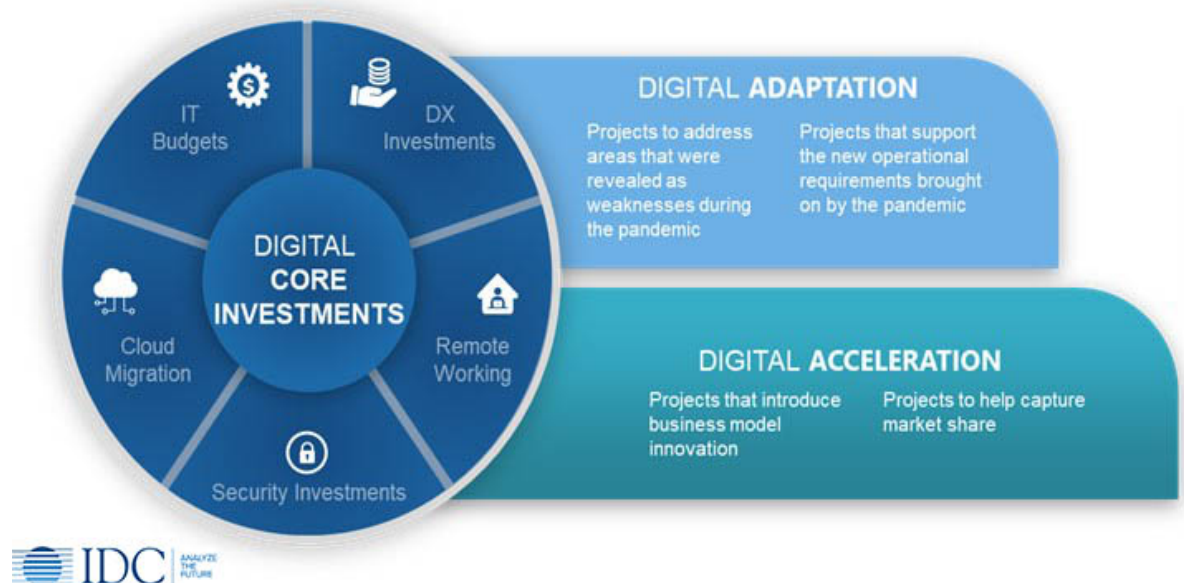
ICT use continues to grow, but is unevenly distributed across countries, businesses and individuals. If, on average, ICT use by individuals is breaking records, disparities persist between countries and social categories, especially in mobile. For more advanced use of the Internet (for example online shopping or banking services). The elderly and less educated people are left even further behind. Public authorities emphasize vocational training, as well as primary or secondary education, and invest as a priority in the purchase of equipment and connectivity of educational establishments. Users are concerned about security and privacy in digital environments, which are two major barriers to Internet use, including among the most educated people. On the business side, SMEs are lagging behind in the use of ICT, whether for basic or more advanced functions. Computing and big data analytics are advancing rapidly, even from relatively low levels. Although the use of robots in production is increasing, it is currently concentrated in a limited number of countries.



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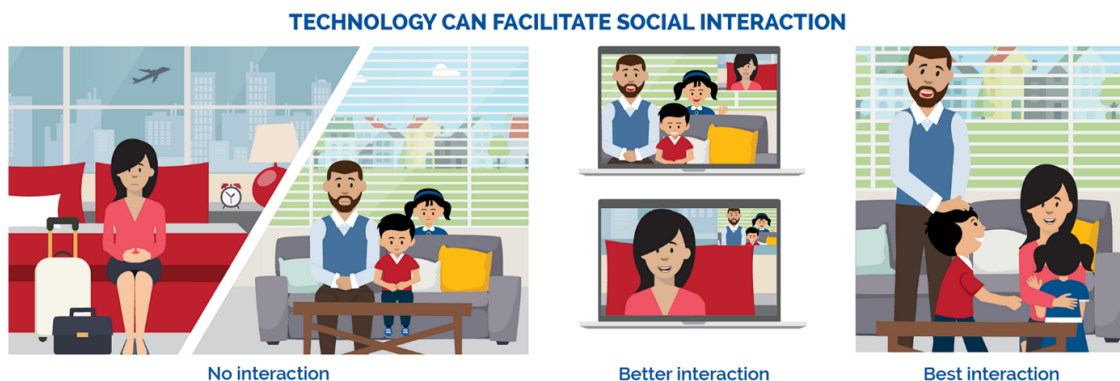
## Policies of digital innovation ICT, intellectual capital and data analysis

Digital innovations and new economic models are changing the game, including in the areas of employment and business. Data-driven innovations, innovative new economic models and digital applications are changing the way science, governance, cities and sectors like health and agriculture operate. Are disrupting. Digital innovation policies place greater emphasis on innovation networks, access to finance and the use (and re-use) of data rather than investments in ICT, intellectual capital and data analysis. Digital transformation results in the destruction and creation of jobs in various sectors, and the emergence of new forms of work and reshaping of business, especially in services. Faced with these upheavals, public authorities in many countries have taken the lead in reviewing their labor laws and trade agreements.



## Effective uses of ICT in daily life

Effective use of ICT in the private and business sector not only strengthens general and specific ICT skills, but also basic skills.



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Cannot be done without copying. Effective use of ICT in the workplace and in daily life requires appropriate skills. "IT staff" appears in second place in the ranking of the ten main types of profiles that companies struggle to recruit, especially in services, even though only a handful of countries (at least in Europe) employ employees. Are facing shortage of. ICT skills. Another observation is that many employees who use ICT on a daily basis do not have sufficient general ICT skills; The same goes for basic skills like problem solving and communication, which workers need to adapt to changing jobs. Some countries are currently implementing programs to align ICT training priorities with expected skills needs; On the other hand, few have adopted a comprehensive ICT skills development strategy to date.

## Digital Security and Privacy

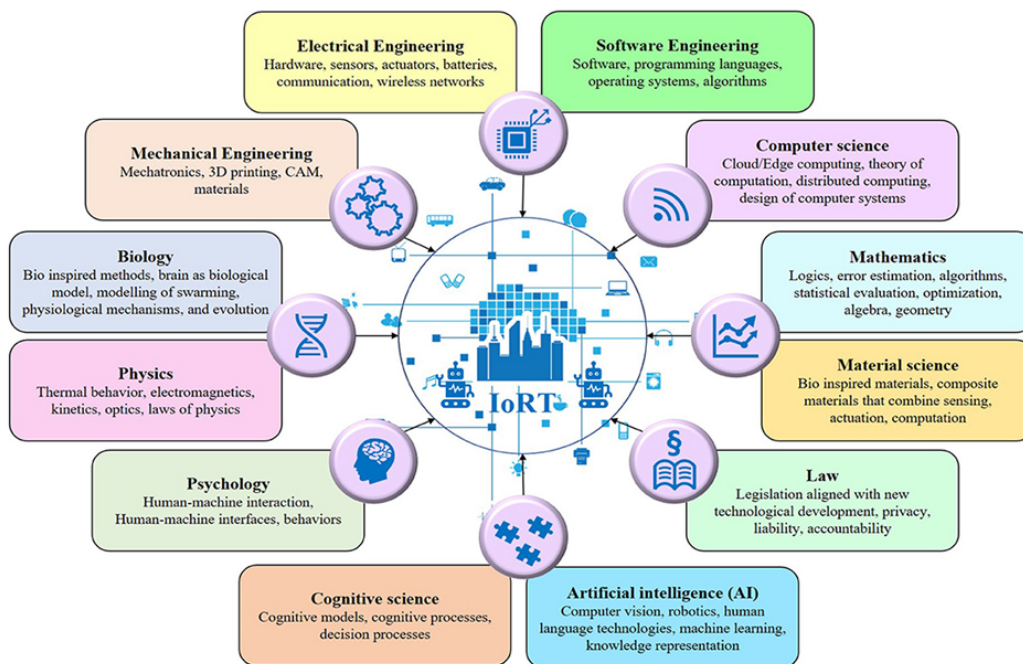
Concerns over digital security and privacy are hindering ICT adoption and business growth, with increasing intensive use of ICT putting businesses and individuals at increased risk in terms of digital security and privacy breaches. SMEs should implement or improve practices specifically designed to manage these risks. While many countries have adopted national digital security strategies, few have done the same to protect privacy. However, privacy risks, along with concerns about online fraud, prevention mechanisms, and the quality of products sold over the Internet, may weaken consumer trust and slow the growth of e-commerce among businesses and individuals. Most consumer protection policies focus on the general issue of trust in e-commerce, and platforms connecting individuals are just beginning to address new issues related to marketplaces.



## Artificial intelligence opens new perspectives

But it also raises important issues in terms of politics and ethics. Under the influence of the generalization of artificial intelligence (AI), machines are now able to perform cognitive tasks while mimicking human behavior. Using machine learning, big data and computing, algorithms can identify patterns of increasing complexity in large data sets and are already surpassing human capabilities in some cognitive tasks. While AI offers the potential for efficiency and productivity gains, it may add political and ethical challenges to the issues already facing public authorities. This is particularly the case with respect to the potential impacts of AI on the future

of work and skills development, or its implications in terms of transparency and oversight, accountability, obligations and security.



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## Blockchain technology

Realizing the potential of blockchain depends on overcoming technical barriers and solving strategic challenges for public policy, as blockchain technology allows transactions to take place without the intervention of a trusted intermediary. For example, Bitcoin, a virtual currency using this technology, operates independently of any central bank or other financial institution. Apart from Bitcoin, blockchain technology is creating opportunities in many sectors ranging from finance to public sector.



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## Conclusion

Education and the Internet of Things. And blockchain technology for good reason: it helps reduce transaction costs, promotes accountability and guarantees the execution of obligations through smart contracts. Realizing this potential still depends, to a large extent, on the ability to overcome technical barriers and address strategic challenges to public policy, in particular: how to enforce the law in the absence of an arbiter, or How and who bears legal responsibility for damages caused by blockchain-based systems? Apart from Bitcoin, blockchain technology is creating opportunities in many sectors ranging from finance to public sector.

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