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Pre-Covid Digital Infrastructure

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Abstract

It has taken less than two decades for the commercial internet to go from innovation to indispensable, from fun to fundamental. The rapid growth of the users of digital creative industries – a trend which seems unlikely to change – suggests the potential for continued expansion in the future with strong market growth across the World. Digital connectivity has become critical to societal resilience and business continuity. The crisis and the social distancing measures taken in reaction to it—stay-at-home orders in particular—have made it clear that quality Internet and telephony access are necessary to maintaining social interactions and enabling the continuity of government and the private sector. Individuals have been able to work, attend classes, get medical advice from home, order food and goods, and connect with family and friends via the Internet

Keywords: Covid 19, Digital Infrastructure, Digital Service sector, Government Initiatives

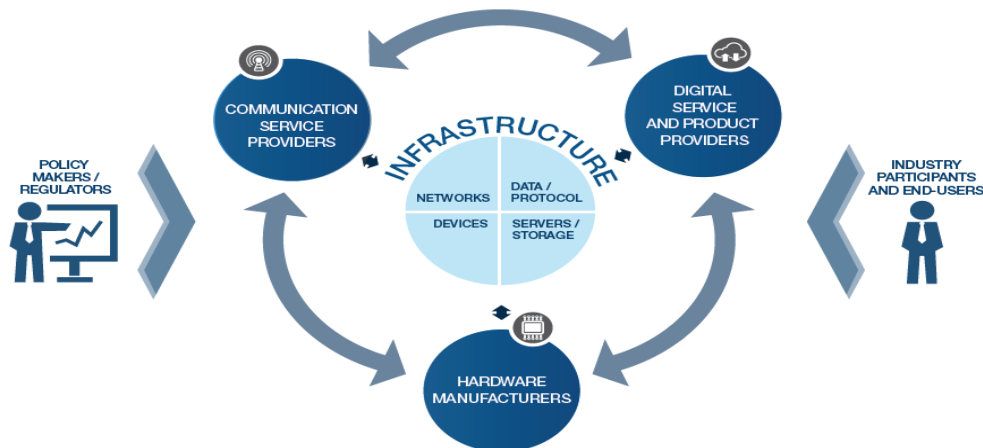
Introduction

Specialized companies and smaller but fast-growing broadband network operators may face survival challenges, leading to more concentrated and therefore less competitive markets, limited availability of open access broadband infrastructure, or less technological innovation. This creates concerns that rural and gender connectivity gaps may widen further in emerging markets—and may slow expansion of 4G and 5G networks.

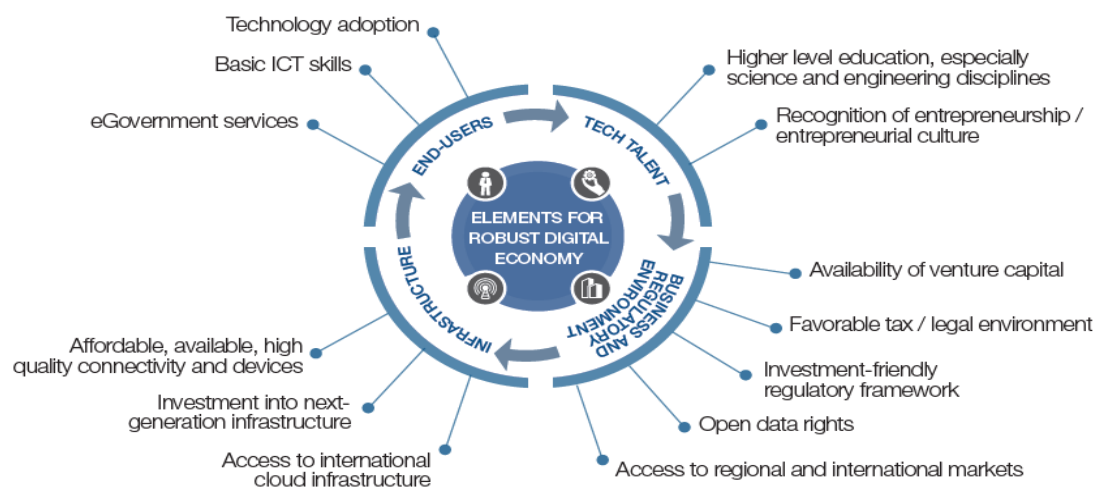
Digitisation and related automation increasingly shape all of our lives, and the firms leading these markets have become dominant players. Digital creative companies transform both traditional creative and non-creative sectors and, at the same time, can help to satisfy the increasing demand for new ‘fused’ skills. This demand comes as a result of rapid technological change, higher client expectations and greater competitive pressures. Digital creative companies and their customers - increasingly seek a ‘fusion’ of technical expertise, creativity and other skills to cope with the challenges they face. This combination of skills and capabilities and its availability within an area is a major success factor in the development of a digital creative cluster.

Skills shortages arising from the fast pace of change in the digital creative sectors is also a potential issue, Specifically in a recent survey mapping innovation and creativity covering firms in all sectors. Less than half of the firms surveyed also indicated that ‘skilled employees are available locally’. Digital service delivery has the potential to revolutionize fields with huge social and economic impact such as healthcare and education. The degree and nature of the challenge vary by region, but the need for improved infrastructure to accommodate fast-growing digital growth is global. Governments also play big parts. Three of the most prominent roles are as policy-makers, regulators and the owners and dispensers of spectrum for mobile networks. Non-governmental organizations (NGOs), industry associations, standards bodies, multistakeholder associations such as the World Wide Web Consortium (W3C), the Internet Corporation for Assigned Names and Numbers (ICANN) and the

International Telecommunication Union (ITU), are key players, too. Together, all of these participants are responsible for the fixed and mobile networks, exchange points, datacenters, devices and network equipment, and platforms and protocols that make the internet work.



The quality, speed and extent of connectivity will be increasingly important factors in business and economic decisions in the future, including where companies decide to expand or locate new facilities. Digital service sectors have evolved along many different paths, but they have certain key attributes in common: adequate digital infrastructure, technology-literate end-users, technology talent with entrepreneurial spirit, and a friendly business environment.



Three opportunities and challenges :

- Digitization for growth, productivity and innovation
- Digitization of Globalization
- Digitization of Work

To fully capture benefits to digital creative sector has grown significantly in terms of both the number of enterprises and sales in recent years although job growth has been significantly more modest. The rapid growth of the users of digital creative industries – a trend which seems unlikely to change – suggests the potential for continued expansion in the future with the strong potential market growth.

Strategic focus of business development remains on the high value manufacturing sector. The digital creative sector remains under the radar and has had little strategic priority. Access to finance was thought to be more difficult, and the broader than elsewhere, making it difficult for businesses to grow. There was also a sense that many small digital creative businesses would not know where to look for investment.

Loss of graduates and talent – there was thought to remain an outflow of talent to cities with more established digital creative sectors. Some interviewees linked this to a lack of high quality skills available in the sector. Premises – a lack of the right kind of space for growing digital creative businesses in urban locations was also cited by many respondents, emphasizing the importance of more developments along the lines of the Riverside plans. Procurement policies - restrictive procurement policies of potential customers, both larger corporations and public authorities, can make it difficult for smaller or younger firms to gain contracts.

Government play big parts. Three of the most prominent roles are as policy-makers, regulators and the owners.

NATIONAL CONVENTION On DIGITAL INITIATIVES FOR HIGHER EDUCATION HAVE INTRODUCED

SWAYAM

- Approve the courses on offer: The list of courses which are being offered for the coming Semester is available on www.swayam.gov.in. Institutions are requested to take approval of the Competent Authority (Academic Council/Senate) for these courses so that students can opt for them, and seek transfer of credits.
- Publicise the courses: The SWAYAM courses shall be publicised by printing posters, WhatsApp messages, Facebook posts and Twitter accounts of the University. The objective is to reach as many people as possible so that they can get benefited by these courses.
- Prepare new courses: If there are talented teachers in the Universities who are willing to place their course on SWAYAM, they should be encouraged. Such proposals may be sent to the National Coordinator for approval and for providing funding to prepare the courses.
- Retrain teachers: All teachers may be asked to use the SWAYAM courses during their own teaching process so that we can have a blended learning process. The flipped classroom model, where the SWAYAM videos are seen at home, and there is a discussion in the class would help in improving the quality of learning.
- Monitoring Cell: Every University should have a Digital Learning Monitoring Cell which reviews the current use of these digital resources and suggests way to improving their utilisation further in the university and the affiliated institutions.

SWAYAM Prabha DTH channels

- Buy Free Dish for accessing SWAYAM Prabha Channels: Every VC may instruct buying of the DD Free Dish from the market (costs about Rs. 1400 one-time cost only) and configure these channels in their office first; and later install in as many class-rooms as possible. Mandate other affiliated colleges: The same message may be given to all the affiliated institutions for setting up these channels and operationalising them immediately.
- Orient the teachers: VCs may hold orientation sessions for all the teachers so that they see and use these channels while teaching their courses.

National digital library

- Join the NDL: All institutions and the affiliated colleges may immediately join the National Digital Library at <https://ndl.iitkgp.ac.in/>. This will help students to access more than 80 lakh digital resources at no cost. Universalise access: Pl ensure that all the students log-in and join the NDL. While doing the class work/assignments, they may be asked to use these resources.
- Digitise your libraries: All books in the libraries may be digitised and shared with the NDL at IIT Kharagpur so that it would add to the digital resources and there is greater sharing of the digital resources by all institutions.

National Academic Depository

- Join the NAD: Every institution should join the NAD which hold all the certificates digitally. All the past certificates/degrees/diplomas issued should also be uploaded on to the NAD. For more details, please see <https://cvl.nad.co.in/NAD/home.action>

Other digital initiatives

- Digital campus: All campus processes like admissions, academic calendar, attendance, assessments, result declaration, administration, pay roll, financial and such other processes shall be computerised.
- Smart Campus: Every campus shall plan for efficient and economical use of water, electricity and waste. Use of solar power and water recycling systems may be planned for, as they would bring sustainability and savings in the long run.
- National Digital Payment Mission: Every institution should move towards a complete digital payment system in their campus covering all transactions by the institution. The digital payment modes like BHIM App should be introduced to all students and commercial establishments on the campus, including the canteens.
- Unnat Bharat Abhiyaan: Every institution to adopt atleast 5 villages and help in translating their knowledge for the use of the rural poor.
- Innovation drives: Students may be encouraged to think out-of-the-box and arrive at solutions that are innovative. For this competitions may be organised for all students covering various areas.

E-CONTENT

- Massive Open Online Courses (MOOCs) are free online courses available for anyone to enroll. MOOCs provide an affordable and flexible way to learn new skills, advance your career and deliver quality educational experiences at scale. MOOC.org is an extension of edX, a leader in online learning and education.
- Nptel : NPTEL provides E-learning through online Web and Video courses in Engineering, Science and humanities streams. The mission of NPTEL is to enhance the quality of Engineering education in the country by providing free online courseware.
- Virtual labs :Objectives of the Virtual Labs to provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars
- Talk to teacher : A-VIEW is an award winning indigenously built multi-modal, multimedia e-learning platform that provides an immersive e-learning experience that is almost as good as a real classroom experience developed by Amrita e-Learning Research Lab.
- E-Yantra : e-Yantra is an initiative to incorporate Robotics into engineering education with the objective of engaging students and teachers through exciting hands-on application of math, computer science, and engineering principles.
- Coursera: It is a social entrepreneurship company that partners with the top universities in the world to offer courses online for anyone to take, for free. (coursera.org, 2012). The initiative is supported by 33 participating universities. Loud Cloud offers e-learning technologies. It has tied up with Centurion University of Technology and Management, Orissa to offer distance education from June 2013. The technology of the company is also being use at Career Education Corp, Grand Canyon University and

Jefferson County School District in Colorado, USA. Presently the company offers its services to 1, 50,000 students in India and US (Economic Times, 2012).

CONCLUSION

The demand is strong in India and worldwide for graduates. The digital economy will not stop or stand still. New technologies and services are already on (digital) drawing boards worldwide. The digital economy will continue to expand and generate growth. The only questions are where and how fast. Lack of investment in infrastructure is an impediment, but barriers are never erected evenly. Since spectrum is the life-blood of wireless networks, the most important step governments can take is releasing more spectrum for mobile use. To attract development capital consistent with promoting the digital creative sector, greater clarity and consistency is necessary in local development strategy and planning.

REFERENCES

- The Internet Economy in the G-20: A Country-by-Country Interactive”.
- “The Mobile Economy Asia Pacific 2013”, 2013.
- India Telecommunications Report Q4 2012”. BMI, 2012.
- <http://mhrd.gov.in/digital-initiatives-higher-education>
- <http://mhrd.gov.in/>
- <https://swayam.gov.in/>
- <http://e-yantra.org/>
- <http://mooc.org/>
- <http://sos-tools.org/>
- <https://www.edx.org/>
- <http://cec.nic.in/E-Content/Pages/default.aspx>
- <http://mhrd.gov.in/e-contents>
- <http://nptel.ac.in/>
- <http://aview.in/>