IGF
Internet Governance Forum

Dynamic Coalition on Internet & Jobs

Internet & JOBS

A REPORT BY
DYNAMIC COALITION ON INTERNET & JOBS

2020

Disclaimer

- This report is based on an online survey

- The results may be biased as a result of the reach of the survey

- The findings are the views of author and not of the IGF

Table of Contents

Message from
The Chair of the Dynamic Coalition

Dear Reader,

Greetings from the Dynamic Coalition on Internet & Jobs.

With COVID-19, we all have realized the importance of the Internet and the significance of soft infrastructure. Internet is used for finding jobs and for delivering on them. This highlights the importance of digital inclusion and the Right to Internet. The Internet is no more a luxury but a basic necessity. Also, the Gig economy has arrived. The world has moved from four walls to fire walls and jobs have become tasks, work stations have transformed to work space and office is where the Internet is!! This report gives us a sense of the direction in which the world is converging.

This report is our first attempt and will have its share of shortfalls. I look forward to your suggestions. We will ensure that the suggestions are incorporated and that the subsequent reports will be much deeper and wide and with more practical examples and tips of leveraging the Internet for building vibrant societies and robust economies.

I personally wish to thank IGF Secretariat, and especially Mr. Chengetai Masango, IGF Programme and Technology Manager, for his tremendous support. I invite you to join the Dynamic Coalition to further our goal of leveraging the internet for creating jobs. I wish to thank the team at HealthMinds, Dr. Crystal Leitao, Sharvari Indulekar and Sunitha Biswas for their assistance in completing this report.

Wish you a happy and prosperous new year.

Prof. Rajendra Pratap Gupta
Chair
Dynamic Coalition on 'Internet & Jobs'
Internet Governance Forum
Email: president@dmai.org.in

About **IGF**

The Internet Governance Forum (IGF) serves to bring people together from various stakeholder groups as equals, in discussions on public policy issues relating to the Internet. While there is no negotiated outcome, the IGF informs and inspires those with policy-making power in both the public and private sectors. At their annual meeting delegates discuss, exchange information and share good practices with each other. The IGF facilitates a common understanding of how to maximize Internet opportunities and address risks and challenges that arise.

In the resolution adopted by the UN General Assembly on 16 December 2015, (70/125) 'Outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society', the existing mandate of the IGF as set out in paragraphs 72 to 78 of the Tunis Agenda was extended for another 10 years.

IGF Mandate

Paragraph 72 of the Tunis Agenda:

72. We ask the UN Secretary-General, in an open and inclusive process, to convene, by the second quarter of 2006, a meeting of the new forum for multi-stakeholder policy dialogue—called the Internet Governance Forum (IGF). The mandate of the Forum is to:

- Discuss public policy issues related to key elements of Internet governance in order to foster the sustainability, robustness, security, stability and development of the Internet;

- Facilitate discourse between bodies dealing with different cross-cutting international public policies regarding the Internet and discuss issues that do not fall within the scope of any existing body;

- Interface with appropriate inter-governmental organizations and other institutions on matters under their purview;

- Facilitate the exchange of information and best practices, and in this regard make full use of the expertise of the academic, scientific and technical communities;

- Advise all stakeholders in proposing ways and means to accelerate the availability and affordability of the Internet in the developing world;

- Strengthen and enhance the engagement of stakeholders in existing and/or future Internet governance mechanisms, particularly those from developing countries;

- Identify emerging issues, bring them to the attention of the relevant bodies and the general public, and, where appropriate, make recommendations;

- Contribute to capacity building for Internet governance in developing countries, drawing fully on local sources of knowledge and expertise;

- Promote and assess, on an ongoing basis, the embodiment of WSIS principles in Internet governance processes;

- Discuss, inter alia, issues relating to critical Internet resources;

- Help to find solutions to the issues arising from the use and misuse of the Internet, of particular concern to everyday users;

- Publish its proceedings

United Nations

Secretariat of the Internet Governance Forum (**IGF**)

Villa Bocage
Palais des Nations,
CH-1211 Geneva 10
Switzerland

igf@un.org
+41 (0) 229 173 411

For more information, please visit: https://www.intgovforum.org/

About the Dynamic Coalition on
Internet & Jobs

Dynamic Coalition on Internet and Jobs (DC-Jobs)

Introduction

The Internet is the fourth most impactful invention in human history after - the fire, the wheel, the electricity; and yet, we have barely scratched the potential of what Internet can deliver. As we move ahead with technologies and tools built to leverage the Internet, scepticism is gaining ground on the potential impact of the Internet on taking away jobs.

This Dynamic Coalition on 'Internet & Jobs' has come from the realization of the need for sustainable and responsible automation, and the potential of the Internet to create jobs and boost the local economies. It is a result of the initiatives taken by Prof. Rajendra Pratap Gupta at the IGF, since 2018 when it was held in Paris and then, in 2019, at Berlin.

Our goals

- To create jobs across sectors and geographies, through a multi-stakeholder, ecosystem approach of: Connect, Coordinate, Activate, Train, and Enable
- To help people realize the human resource and entrepreneurial potential of the Internet across the globe

Action Plan

- We will come out with an annual report on 'Internet & Jobs' capturing the opportunities, best practices, and success stories, to inspire people to leverage the Internet to build local economies and connect them to the global opportunities
- Organize online and offline workshops on how local communities can leverage the Internet for a better life
- Showcase our real-life stories and brain-storm ideas and innovations at the local IGF and annual IGF meetings

Mailing List

Join the mailing list by emailing : dc-jobs@intgovforum.org

For more information, please visit: https://www.intgovforum.org/multilingual/content/dynamic-coalition-on-internet-jobs-dc-jobs

Dynamic Coalition Chair: Prof. Rajendra Pratap Gupta

Email: president@dmai.org.in

A new world is taking over humanity and it is the digital

Introduction

Over the last few decades, advancement in internet technologies has enhanced the availability and ease of the employment sector. The wide reach of Internet has impacted the employment and entrepreneurship and current market scenario, and this remains to be fully understood to leverage the full potential. Through our annual report "Internet & Jobs," we aim to shed light on the influence of the Internet on current employment and entrepreneurship scenario. For this purpose, an online survey was conducted using a questionnaire shared on the IGF Facebook and Twitter handles, and using other platforms like LinkedIn besides emailers. Implementing convenience random sampling, nearly 207 countries were included in the survey, of which participants from 71 countries responded to the survey and data obtained from their responses were analyzed and interpreted.

National and global employment and entrepreneurship is undergoing a transition at high frequency. Various companies and organizations are growing increasingly reliable on digital innovation and technology to fulfil the growing demands. Subsequently, offices and workplaces are becoming nimble, going beyond the typical office environment. To gain sustainable fierce advantage, companies have been integrating and upgrading their data resources to construct efficient optimal business intelligence strategies. Owing to the amalgamation of mobile computing devices, high-speed uninterrupted wireless connectivity, and various services and applications, corporate and employment sectors have been witnessing a novel significant era. As work experience eventually entails a network of people and places instead of some central locations, the focus of several companies will be on standardizing seamless online working experience through optimal improvised internet consumption. The first survey on 'Internet & Jobs' attempts to understand various facets associated with the Internet, employment and entrepreneurship and makes recommendations based on the survey to leverage the full potential of the internet.

PARTICIPANT'S PROFILE AND COUNTRY-WISE DISTRIBUTION

The participants responding to the survey were from 71 countries across in six continents, including Asia, Africa, North America, South America, Oceania, and Europe, as mentioned below in Table 1.

Table 1: Distribution of Participants According to Continent

Continent	% of participants
Africa	22.24%
Asia	41.04%
Europe	15.94%
North America	14.97%
South America	4.35%
Oceania	1.44%

Table 2 represents the countries from which the participants responded.

Table 2: Participant Countries

Countries		
1. Algeria	25. India	49. Portugal
2. Argentina	26. Indonesia	50. Russian Federation
3. Australia	27. Iran (Islamic Republic of)	51. Rwanda
4. Austria	28. Ireland	52. Serbia
5. Bangladesh	29. Israel	53. Singapore
6. Benin	30. Italy	54. South Africa
7. Botswana	31. Japan	55. South Sudan
8. Brunei Darussalam	32. Jordan	56. Spain
9. Cameroon	33. Kenya	57. Sri Lanka
10. Canada	34. Kiribati	58. Sweden
11. Chile	35. Kuwait	59. Switzerland
12. China	36. Lao People's Democratic Republic	60. The former Yugoslav Republic of Macedonia
13. Colombia	37. Lebanon	61. Togo
14. Costa Rica	38. Luxembourg	62. Trinidad and Tobago
15. Côte D'Ivoire	39. Madagascar	63. Tunisia
16. Czech Republic	40. Malaysia	64. Turkey
17. United Arab Emirates	41. Mauritius	65. Democratic Republic of the Congo
18. Egypt	42. Mongolia	66. Uganda
19. Estonia	43. Myanmar	67. United Kingdom of Great Britain and Northern Ireland
20. Ethiopia	44. Nigeria	68. United Republic of Tanzania
21. Fiji	45. Oman	69. United States of America
22. Germany	46. Pakistan	70. Venezuela (Bolivarian Republic of)
23. Ghana	47. Philippines	71. Zambia
24. Honduras	48. Poland	

INTERNET USERS AND AGE

Among the participants, 42.51% were in the age group of 25–40 years; followed by 28.50%, 41–50 years; 19.81%, 51–60 years; 5.80%, >60 years; and 3%, 19–24 years, as depicted in Figure 1.

Figure 1: Distribution of Age
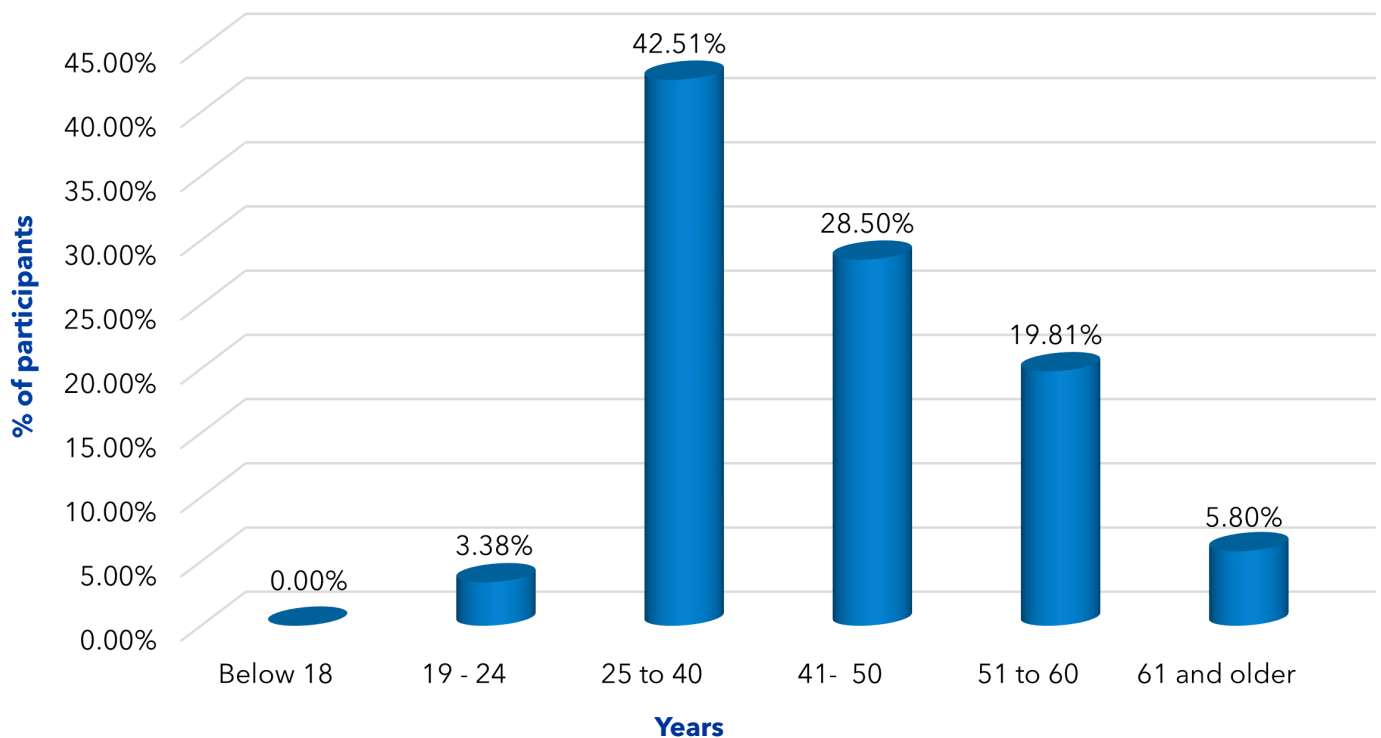
Maximum population responding to the survey was in the age group of 25–40 years, followed by 41–60 years. The age group of 25–60 years is the working population group suggesting that the appropriate sample responded to our survey. The survey findings suggest that the Internet is used mainly for employment purposes, jobs or businesses alike. However, the major drawback of increasing internet dependency and the new normal in the employment sector is the age factor, i.e., mounting differences between generations who grew without Internet and who grew in the digital era. This leads to older generations requiring adapting to new work cultures to better comprehend the importance of technological era and net-generation. Additionally, despite the increase in adoption of Internet and digital technologies, significant challenges, such as digital exclusion, remain to be addressed. This exclusion is often observed when a person is unemployed, looking for jobs, does not know to operate Internet, or does not have any access to internet-providing services and devices, e.g., people living in remote rural areas. Thus, government and private organizations should strategize to support digitally excluded people to access Internet by availing them basic Internet and digital services.[1, 2]

As depicted in Figure 2, it was reported that maximum number of participants (28.99%) spent >10 hours daily across all devices to access Internet.

**Figure 2: Distribution of Duration of Daily Internet Usage**
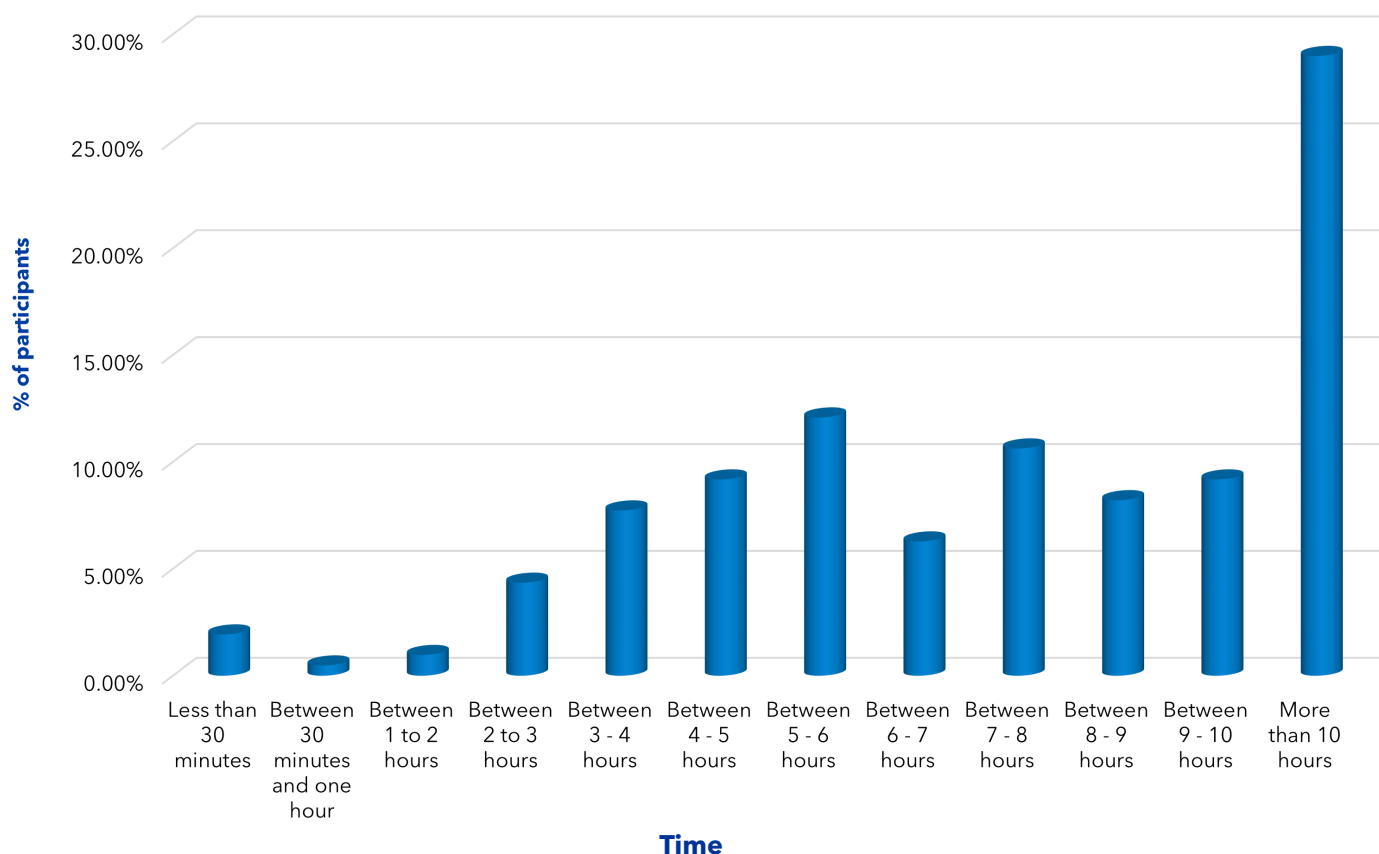
Majority of the population spends >7 hours daily on the Internet, suggesting that people are dependent on Internet for their jobs and businesses.

Work from home is the new development, and the 'right to internet' needs to be factored as a must have soft infrastructure. Internet is the new highway of 21st century to achieve economic growth.

INTERNET AND WORKING STATUS

As shown in Figure 3, in the survey, of all the internet users, 71.50% were working full time, whereas 14.01% were working part time. 7.73% were freelancers, i.e., not employed yet looking for paid work, 5.31% were students, and 1.45% were unemployed and not looking for any paid work. This highlights that Internet plays significant role in the employment sector as compared to other subject areas of the study.

**Figure 3: Distribution of Study Subjects According to Working Status**
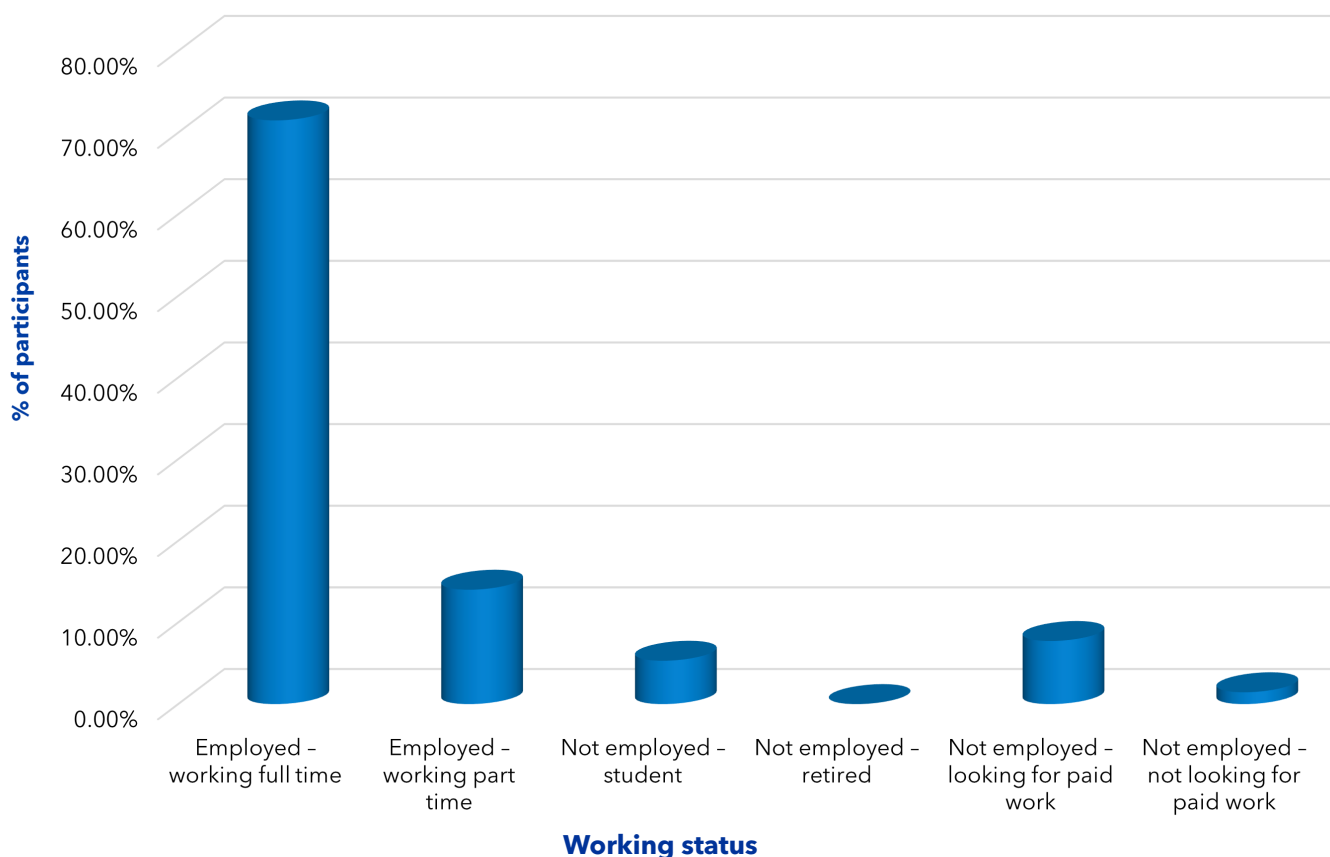
The data suggests that people working full-time are more dependent on the Internet than others, and thus, they need to ensure constant access to Internet or technology using digital devices and broadband/ Wi-Fi services. Part-time workers and freelancers are also dependent on the Internet and technology for finding work and completing projects. Content creation and blogging are taking shape as new careers, which is exclusively based on Internet and social media applications. Such online professions have been a great source of income through collaborations between multiple bloggers. This further suggests that the growing dependency of people on the Internet is helping create new occupations. Additionally, 7.73% participants who were unemployed used the Internet to find jobs, which goes to show that the Internet is also useful as a job portal. The use of Internet is surely to be intensified in the future considering its practical applications for employment purposes.

> Growing dependency of people on the Internet is helping create new occupations.

INTERNET ACCESS

The survey suggests that internet consumption is maximum (84.06%) in the form of broadband or Wi-Fi services at home, whereas 51.21% people access Internet via such services at their workplaces or offices (Figure 4). Additionally, 65.70% people use mobile data for accessing Internet.

Figure 4: Distribution of Different Internet Access Types
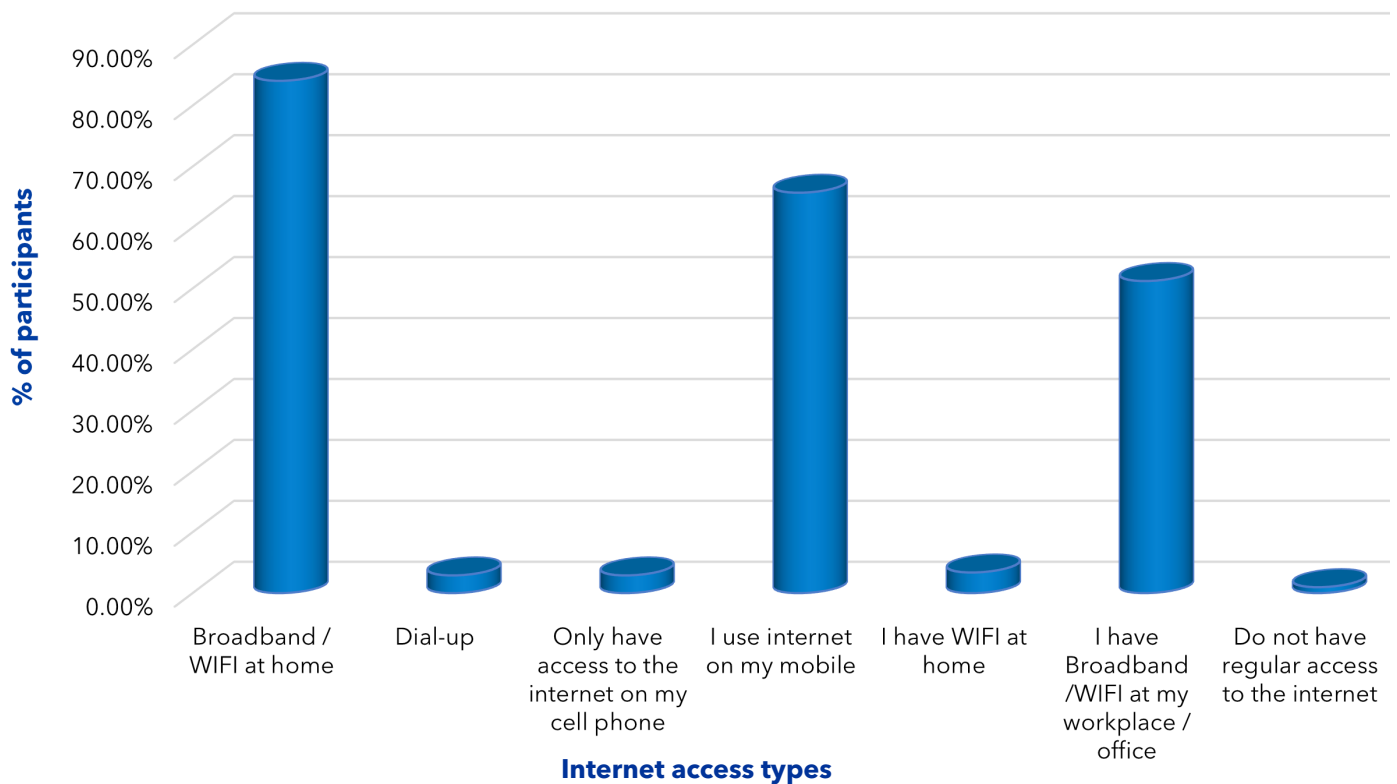
Places of internet access

Broadband/Wi-Fi services at home are the most common form of internet connection used. This means that Wi-Fi services have come to be extremely preferred and widely available. One router with effective internet package provides sufficient high-speed and -quality Internet to multiple users in one apartment. As opposed to the internet cable connection (preferred before the introduction of broadband services) requiring one stagnant location, laptops and other digital devices can be carried around when connected to Wi-Fi. Even at various workplaces, Wi-Fi services are preferred as they provide sufficient quality of Internet with considerably high speed for allowing multiple employees to work together effectively and optimally.

Additionally, majority of people are dependent on mobile data. Smart phones have advanced in technological terms. Considering their convenience and portability, they can be potential next-generation laptops. This shows that majority of the people are satisfied with mobile internet service providers. Smart phones and digital devices have brought everyone within reach despite any distance.

Video conferences allow people globally to meet on a virtual basis, and information and data can be easily transferred/exchanged online. This demands new paradigms and novel standard working protocols to combat complexities of bringing people together online. This puts forth a vision of virtual corporate world where employees from any part of the world could be available 24/7. Notably, there are positive and negative implications of the effect of Internet on the employment sector. In positive regard, work-extending technologies allow increased flexibility of when and where to work and induce enhanced productivity due to client-oriented approach. In negative regard, this extended flexibility can invade into personal lives with increased managerial expectations. Nevertheless, to these implications, other benefits of Internet for work-related purposes can be added, including global accessible connections, access to various working cultures, and wide reach of social media platforms.[2]

TYPES OF INTERNET ACCESS

The most preferred internet type has been broadband/Wi-Fi services, followed by mobile data. Dial-up connections are the least preferred. This could be due to connection speed with broadband/Wi-Fi is nearly 100 times better than that with dial-up connection. Files can be downloaded within seconds–minutes instead of hours. Additionally, these preferred services do not interfere with telephone lines. Once internet packs are renewed, Internet is always available. With wireless services, multiple devices can access Internet simultaneously. Based on service provider, the Internet can be accessed within the range of Wi-Fi, hotspot, or dongle. Such connections are secure and consistent. On the other hand, mobile data connection is preferred considering its benefits to users. Mobile internet connections offer customization and incorporation of various quality-analyzing tools to minimize error. Cloud services offer safe storage space and backup for universal access.

The data suggest that broadband Internet has played a crucial role in the job market, even in the times of pandemic. The current pattern of employment sector has drastically changed due to the internet and ongoing pandemic crisis. This poses opportunities as well as challenges. The COVID-19 pandemic has remarkably affected the global and Indian employment sector; ultimately, several economies have slowed down or collapsed after enforcement of strict lockdown scenarios, giving ways to unprecedented recession. Nevertheless, due to availability of the Internet, the employment sector is thriving and shifting to Tier 2 and 3 cities, i.e., cities outside information technology and business process outsourcing hubs. This hypothesizes that jobs are now becoming independent of location or restricted office premises and reaching beyond large cities to small towns.[2-4]

INTERNET AND THE NEW-NORMAL

Considering various locations for availing access to Internet as presented in Figure 5, 95.17% and 84.54% people accessed Internet at home and workplaces, respectively. This was followed by 57.49% people who accessed Internet at an outside location and 47.83% people who accessed Internet at a café or coffee shop. Moreover, 36.23%, 35.75%, 27.54%, 22.22%, 13.53%, and 6.76% people accessed Internet at a friend's home, free public Wi-Fi, school/college/university, library, bookstore, and others, respectively.

Figure 5: Distribution of Places for Using Internet
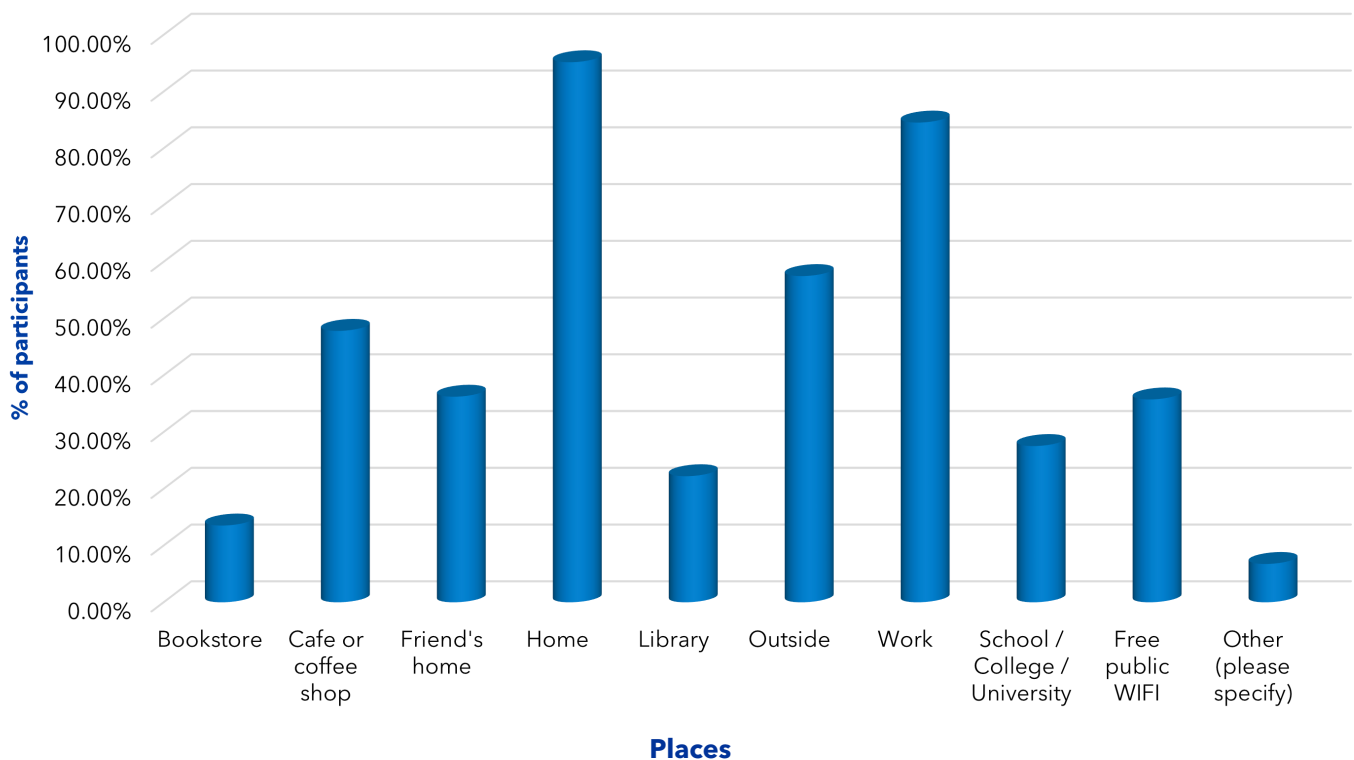
It can be observed that more people use the Internet at home than at office or any other outside place, suggesting that the paradigm of work and corporate world is going beyond typical fixed office locations to home. This could be due to the new normal that is demanding people to work from home, which is in turn preferred due to the availability of uninterrupted Wi-Fi, which is often of high-quality and -speed as compared to the Wi-Fi provided at offices or cafes that is demanded to be shared with multiple users, hindering its speed and quality. Along with employment sector, many courses are being conducted online, such as online classes for students, which are currently preferred at home. This also shows that since the Internet has reached the doorsteps, activities like attending the office, medical consultations, pursuing degrees and education, and shopping to ordering food have moved online.

> It can be observed that more people use the Internet at home than at office or any other outside place.

To adapt to the new normal, majority people have been working full/part-time from home or from any places having internet connectivity and broadband/Wi-Fi services. Differences could be made between people working "at home" and "from home," i.e., working from anywhere while keeping "home" as a base. Collectively, this new normal has been changing the concept of workplaces to workspaces. Such new remote working strategies are growingly prevalent worldwide as they create new employment opportunities for people, especially those working part-time or in gig economy. However, to some extent, remote working culture poses challenges of separating personal and professional lives and issues in terms of limited informal learning about fellow colleagues and organizational workflow. Virtual learning however seems to be the potential promising solution to such problems.[2]

Although part-time workers and freelancers, i.e., gig workers, have been greatly affected by the pandemic, companies are strategizing ways to meet project deadlines and have been looking forward to outsourcing work to complete deliverables. This new trend might set in modern work patterns where remote working would be largely upscaled and accepted. Firms would be more focused on hiring gig workers to complete tasks with best deals possible. Gig working has been opening new doors for crowdsourcing and shared/collaborative economy. Considering the shrinking patterns of skilled professionals and advancing digital era endorsing remote/mobile working, gig economy is likely to gain significant attention for optimized work management in the near future.[5]

> This new trend might set in modern work patterns where remote working would be largely upscaled and accepted.

QUALITY, SPEED, AND AFFORDABILITY OF INTERNET

The survey findings reveal that 44.44% internet users reported to have sufficient internet packs due to their fewer daily requirements, whereas 55.56% people found their data pack to be limited due to high requirements of their daily activities. Additionally, 53.14% participants reported to have high quality of Internet; 36.71%, average quality of Internet; and 10.14%, low quality of Internet. Over the last few decades, speed and efficiency of the Internet have greatly improved, and continue to do so owing to advancing technological inventions.

> **55.56% people found their data pack to be limited due to high requirements of their daily activities.**

Today, people have become more productive in their work than before as Internet and technology have substantially enhanced the rate of production and speed at which data transfer or overall business occurs. In this survey, >50% participants reported to have high quality internet. This could be because smart phones and laptops have already become integral parts of daily life owing to their technological advancements and user benefits. Current 3G and 4G technologies allow network service providers to greatly improve voice capacity, quality and speed of Internet, and data transmission rates owing to their high speed, reduced latency, increased bandwidth carrying capacity, and low costs of services. Such 3G and 4G broadband capacities and wireless services have helped establish a platform for the latest innovative telephony, i.e., new applications and social media websites. However, it cannot be overlooked that nearly 36.71% and 10.14% users did report to have average and low quality of Internet, respectively. This could have been due to many reasons, such as transfer technology, location, number of people sharing same internet connection, and devices with outdated technology used for accessing Internet, misuse of data package, junk software, low bandwidth, improper network configuration, and poor cable choice.

> **In this survey, >50% participants reported to have high quality internet.**

Internet performance

Apart from uploading and downloading facilities, various connection metrics, such as jitter, latency, and packet loss impact the quality, speed, and reliability of several applications, such as voice over internet protocol (VoIP) and video streaming. The quality of internet connection and speed at which data can be transmitted/exchanged are crucial because applications like VoIP services that require broadband Internet to function need to be delivered precisely and in real-time for reliable performance. Average–poor quality bandwidth results in low call/video call quality, buffering, chopping/overlapping conversations or video calls, pixelated videos, and/or dropped calls. In terms of employment sector, poor quality internet and low speed can lead to frustration at work, reduced productivity, and missed opportunities. In fixed broadband network services, the prime aspect affecting the quality and speed of Internet is the technology utilized for data transfer. Fiber-optic and cable networks offer high-quality and high-speed connection, whereas authentic digital subscriber lines, provided through telephone network connection, have restricted

maximum data transfer quality and speed. The quality and speed of Internet also depend on the distance between one's device and network centralizer. The more the distance between one's place of internet access and the broadband centralizer of internet operator, the slower speed and lower quality of available Internet. Also, it should be noted that number of devices at one place or connected to the same internet connection as well as multiple concurrent phone/video calls or streaming applications can effectively hamper the strength of bandwidth, ultimately affecting the quality and speed of Internet.[6]

As depicted in Figure 6, the main reason of internet consumption is education and research purposes as reported by 84.54% participants. 66.18% and 56.52% participants required Internet as their jobs and businesses are dependent on it, respectively, whereas 50.72% participants irrespective of their job status used Internet for finding and securing jobs.

> 66.18% and 56.52% participants required Internet as their jobs and businesses are dependent on it, respectively, whereas 50.72% participants irrespective of their job status used Internet for finding and securing jobs.

Figure 6: Reasons for Internet Consumption
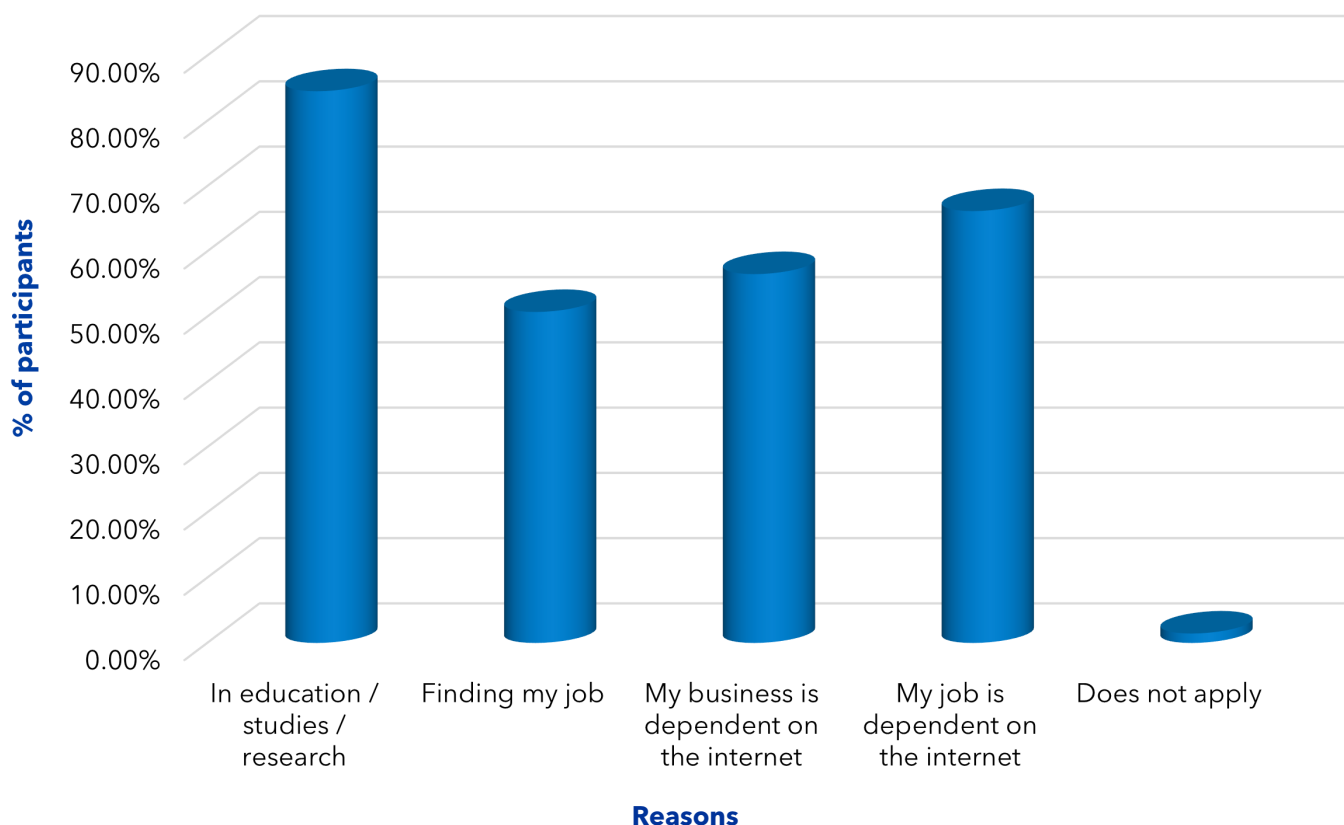
One of the biggest utilizations of global internet consumption is educational and research purposes. Until now, the learning pattern has been passive wherein students were required to be physically present in class, despite the distance between the school and students' residence. Ultimately, teachers were the

transmitters of knowledge and information. Nevertheless, in today's digital era, the Internet is playing a significant role in transforming the face of education going beyond school and college premises. The Internet, world wide web, new software, and networked multimedia packages are allowing students to study from home. While this is likely to make evaluation of students' performance more challenging, it will make learning much more exciting and individualized. Reportedly, students having control on their learning and study subjects are more motivated to study than others. There are a lot of benefits of online education, such as flexibility over fixed schedule, reduced cost of commuting, global networking opportunities, online databases for documentation and storage instead of having to carry books everywhere, online access to expertise and specialized degree courses.

> Not just jobs are moving away from office, education is also moving from the four walls of the Class.

Owing to the proliferation of the Internet, the future of online education looks promising as it avails education to larger proportion of population than before, even in remote places.

Not just jobs are moving away from office, education is also moving from the four walls of the Class.

INTERNET AND JOB HUNT

Internet has been beneficial for jobseekers and it offers variety of tools and applications to find jobs, compare various postings, and apply to multiple and most suitable jobs. One can also avail information about any company to be sure before applying. Additionally, professional job-oriented websites, such as LinkedIn, Facebook's BranchOut, and Naukri.com lets one create professional profiles and accounts to search for jobs and meet industry experts who can give career counselling and advice. Headhunters use such sites to conduct candidate search for filling several posts. Such sites are easily accessible via laptops and smart phones one one's fingertips. Moreover, various job boards allow job hunt by locations, salary, type of the post, and title. The Internet and digital devices have made it much easier to search jobs online rather than personally visiting companies for job applications and regular follow-ups after interview.[7]

> Internet not only helping to get a job but also, doing it.

Internet not only helping to get a job but also, doing it.

INTERNET AND SOCIAL MEDIA

As observed in Figure 7, it was reported that all participants (100%) used social media for multiple purposes, wherein LinkedIn was the most widely used platform with 91.79% users, followed by Facebook (78.26% users), Twitter (67.63%), and Instagram (57.49%). Also, Pinterest, WeChat, and Tumbler were used by 18.84%, 9.18%, and 3.38% users, whereas 13.53% users were reported to use other platforms as well.

Figure 7: Distribution of Social Media Platforms
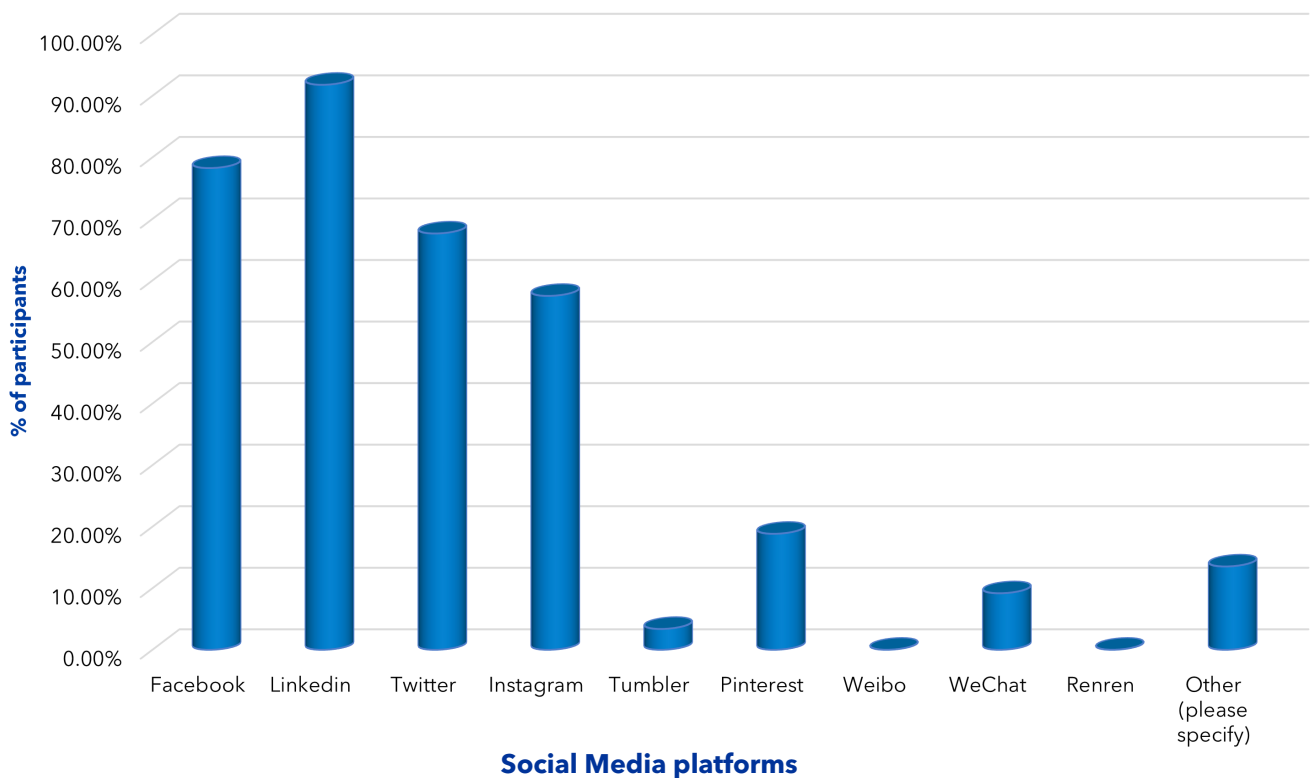
LinkedIn is the most used website for job hunt. It allows members to create their online résumés and list current and previous job roles, skills, and education. It helps grow connections in one's field and beyond. Considering that many people use Internet to look for and secure jobs, LinkedIn has been a reliable source for the same and benchmark for professional networking. However, it was reported that Facebook, Twitter, and Instagram are also highly used platforms. Although these applications have not been designed for job hunt, they provide great way to showcase one's talent through content creation and blogging. Such sites can also help bring attention and customer traffic to one's business brand and discover novel ideas and trends. Ultimately, online applications have become cornerstones of new entrepreneurial ventures and businesses. However, there could be another concern that people working full- or part-time could be indulging in social media, such as Facebook and Instagram, to take a break from work. The corporate management is familiar with employees spending time during work hours on their personal activities. Such issues have generated ethical, legal, and productivity concerns, and measures need to be taken by companies and employees to make ends meet.

Along with the growing Internet and network services, social media has become a global necessity. It is a great platform to showcase talent to engage with audience, whereas companies have been using it as a marketing tool to engage with customers and jobseekers. Social media is being widely used in recruitment and human resource engagements as it allows senior management to recognize and differentiate between active and passive candidates and engage with established personalities in the industry. In terms of employee onboarding, companies review one's LinkedIn, Twitter, and Facebook accounts to get beyond the words on a resume. Hence, keeping one's online presence and profiles up to date is a must to thrive in the present technological competitive world. Thus, being actively involved in industry-related conversations and posts, building personal and social networks, and enhancing visibility within one's field through social media websites have great potential to endorse one's candidacy.[8]

> Social media has become a global necessity.

UTILITY, PERCEPTION, AND ROLE OF INTERNET

Internet and technology have drastically changed the mode of communication in today's world, significantly impacting employment and business sectors. Contrastingly, the Internet has also created numerous issues, which seem to intensify as the technology progresses. Thus, one needs to be aware of the role of Internet and the advantages and disadvantages associated with it.

Benefits of Internet

Today, a lot of people working full-time and part-time are dependent on Internet owing to its technological progression. Nevertheless, apart from constant access to high-speed and high-quality broadband/Wi-Fi services and availability of latest digital devices, there could be other reasons why people are growingly dependent on Internet for their jobs and businesses. In terms of jobs, better work–life balance has been reported with flexible remote-working schedules. Be it running errands or attending online fitness classes, a lot can be done while working from home. Working from home cuts down on cost of commute and time and energy invested in travelling to office daily. Time saved on commute can be better invested in prioritizing and optimizing work, maintaining mental–physical health, getting extra sleep, working out, spending time with family, and better managing the day. Additionally, in remote working scenarios, Internet provides location independency, improved inclusivity of employees, decreased expenditure, and positive environmental impact and sustainability. These could be the reasons that people are growing increasingly dependent on Internet for their jobs.

On the other hand, with the incorporation of Internet, businesses are being completely dependent on the web. With various communication tools, such as Gmail, Zoom app, and instant messaging apps, an ability of any business to communicate with its employees and customers has drastically evolved. Businesses are encouraging employees to work from home using devices and equipment provided by the company. This telecommunication allows businesses to reduce their costs as less office space and less utilities are required for daily operations and management. Due to Internet, businesses are no more dependent on local market and customer bases for survival, as with online ordering and delivery system, businesses can reach in all parts of the world. Moreover, including internet services in advertising and marketing budget expands a business' ability to tap larger customer market. Through websites and search engine optimization services, businesses can strengthen their online presence and outreach to customers.[9]

The Internet also allows to monitor customer needs via surveys, questionnaires, feedback forms, and comments on a business website. Due to Internet, collaborating with other businesses and industry experts for increased profit margins has become convenient and simplified. The Internet also helps businesses to gain novel product ideas and marketing perspectives to effectively compete with other brands. If any business is looking to expand its locations and physical presence, Internet can be used to understand optimum locations, local population needs, etc. Thus, it is evident that businesses are growing more and more dependent on the Internet and will continue to do so in the future considering the consistently evolving technologies.

The use of Internet effectively helps save time and money for quick and affordable data transformation/ exchange. Considering the new normal of working from home, colleagues, managers, and business

partners can be contacted in fast and efficient manner through face-to-face communication technology, such as video conferencing. Remote working also reduces cost of office.

Broadband contributes to creating jobs in various industries and geographies, while being a key factor in capital-labor substitution in some cases. Broadband construction programs generate direct, indirect, and induced jobs under attractive multipliers. Deployment of broadband in developing countries allows them to attract employment from industrialized economies, whereas Broadband internet in developed countries leads to the establishment of new businesses. This subsequently results in job creation. Companies can rely on broadband to deploy distribution channels in remote unserved geographies, leading to additional job creation. System analysts, computer programmers, web designers, and hardware–software designers are few of the positions created by advancing information communication technology.

Internet has been a critical attributing factor of economic growth and globalization by eliminating geographical and language boundaries in terms of foreign trade and capital investment.

Numerous computer programs can be easily shared with people from different generations worldwide. Crucial information, including health, education, business, corporate, and environmental issues and facts can be easily accessed with an internet connection. This effectively eliminates cultural and generation gap by allowing sharing of views and ideas.

Internet also provides a broad spectrum for employee recruitment. Using Internet for recruitment purposes helps results in budget saving as it eliminates the need of extra personnel for recruitment purposes and ensures less expenditure on marketing and advertisement of any job postings and selection process. Another great advantage of the Internet in recruitment process is that hiring authorities can comprehend personalities of candidates based on their social profiles, such as LinkedIn, Facebook, and Twitter, which helps recruiters gain insights about values and background of the candidate to determine if they would a good fit. This ultimately avails larger talent pool of candidates as they can now apply from anywhere in the world due to Internet.[10]

The other side

Although the Internet has contributed to the growth in several sectors, it has led to unemployment through outsourcing and downsizing. Although the Internet has made regular life easier, fast, and convenient, privacy problems remain. From email hacking to mobile signal interception, private information needs to be secured and protected in every case. Given that technology is constantly evolving, job security also remains to be another substantial problem. This implies that employees need to adapt to new changing internet patterns and learn digital skills to thrive in the competition.

BARRIERS FOR INTERNET ACCESS

The following Table 3 describes merits and demerits of internet consumption based on the utilization of potential opportunities offered by the Internet and participants' point of view.

Table 3: Merits and Demerits of Internet Consumption

When it comes to being ready for using the full potential (opportunities) the Internet has to offer, I think	% of Respondents
I need more training and skills and my country has the desired courses to offer	33.82%
I need more training and skills, but my country DOES NOT offer the desired courses	15.94%
Internet is expensive in my country, and so, I will not be able to utilize the opportunities the Internet has to offer	12.56%
My country needs a conducive policy ecosystem to leverage the full potential of Internet	33.33%
I am not aware of the opportunities Internet offers but I would like to learn about it	12.56%
I do not think the Internet creates jobs and business opportunities	1.93%
I am looking forward to starting a business in Internet related products and services	28.50%
I am already running a business which deals in Internet related products and services	33.82%

The findings of the survey indicate the need to have more courses and training programs for digital economy as only 33.82 % believe that the country has the desired courses. This is more important given that 28.50% are of the respondents are considering to start a business in Internet related products and services and 33.82% of the people are already running a business dealing in Internet related products and services.

It is interesting to note that almost 33.33% of the participants felt that the government needs to have a conducive policy ecosystem to leverage the full potential of Internet while *12.5% still felt the Internet was expensive in their country*. At this point of time, where the Internet is not a luxury and quite factually a necessity it is surprising that it is still expensive in few regions. In such regions the productive usability of the Internet then becomes limited, diminishing progress in a way. Conducive government policies including the 'Right to internet' will help leverage the full potential of Internet for jobs and the economy.

> 12.5% still felt the Internet was expensive in their country.

COVID-19: IMPACT OF THE PANDEMIC AND INTERNET

Considering the impact of COVID-19 pandemic on internet usage in employment sector, it was reported that 49.76% participants worked exclusively online during the pandemic. *In 27.54% cases, organization moved part of work or employees to work from home. In 12.08% cases, COVID-19 did not impact organizations or employees, whereas in 5.80% cases, participants reported to have lost their jobs.*

Along with the economic development and globalization, technological progress has been a substantial driving force for structural alterations in the employment sector. The consequences of extending internet industry have been felt in every occupation. Since the past two decades, growing trend in access to and utilization of the Internet has been remarkably influencing the availability and exchange of labor market information and impacting guidance services for jobseekers, students, and training & employment purposes.[2] Despite many advancements, the lack of digital skills and current issues associated with internet usage, such as limited availability and poor quality, are amplifying digital divides as the job market is increasingly demanding digital skills. In the current highly competitive job front, internet skills are basic requirements of every applicant. Reportedly, people with high level education find it easier to utilize Internet to their maximum benefits and fulfil their dreams.[2,11] Thus, while recession is fueling up uncertainties in the job security and salary markets, tech-savvy generation must boost its skills and capabilities to lead broader technology roles as and when opportunities present.[4] Considering this, it is crucial for users to learn and develop digital skills to optimize the utility of Internet for accessing high-quality information and discriminating between biased and non-biased informational sources for better decision-making. Thus, educating children at young age and youth with appropriate knowledge of Internet and digital innovation before entering the job market is a must. Governments, educational institutes, and industries should prioritize skill development and youth empowerment for thriving in the digital competitive economy.[2, 11]

> Internet skills are basic requirements of every applicant.

The ongoing pandemic has stirred several drastic changes in global work culture. The concept of work and a workplace has evolved dynamically in a way that many traditional and modern companies have had to adapt to it to thrive in the business. Since the implementation of new normal of remote working, mainly from home, a lot of changes have been observed in the employment and business sector. People can integrate work like with home life. Online meetings have come to be the new normal. With the introduction of novel work cultures, businesses and companies should define social experiences for building efficient working teams.

Considering women empowerment and the novel trend of working from the comfort of home, offices are hiring female candidates more than male candidates.[12] During the recent lockdown, many companies have reportedly strategized and implemented employee management programs, such as virtual gaming, virtual social gatherings, and parties, which have come to be an exciting trend to boost employee satisfaction and ultimately lead to enhanced productivity. Employees are also being motivated to up-skill themselves through several online courses associated with their profession or hobbies. In line with this,

companies are stimulating employees and providing them incentives for pursuing hobbies to retain job satisfaction working virtually. Additionally, virtual bonding is allowing many employees to feel emotionally closer to colleagues, leading to reduced communication gap between employees themselves and senior management.[12]

Video communications and virtual work-mode are benefitting several sectors, such as healthcare, education, finance, and small–medium and large businesses to evolve, grow, and excel in their services. In the year 2020, owing to lockdown and adapting to the Internet, a plethora of small–medium-scaled business entrepreneurs, such as yoga teachers, music instructors, chefs, therapists, and accountants, launched, maintained, and grew their businesses by working online to connect with customers worldwide. Seeing the efficiency of the work-from-home model, it is likely that post-COVID-19, hybrid work culture would be introduced to maintain equity, wherein people would be required to work for home for nearly 1–3 days/week to balance their efficiencies achieved with remote working experience with the advantages of social interaction at their workplace. It has been observed more tasks can be accomplished when working remotely without any reduction in productivity or quality of work. Many employees have experienced and appreciate flexibility associated with remote working, especially those needing to invest long hours in commute from home to office and back. Although bandwidth costs for internet services have been an addition into monthly expenses, employees are saving lot of time and money on commutation. Employees tend to learn things faster on their own and manage their day better when they do not have physical support of colleagues. Although this may somehow hamper the effective bonding between colleagues, this way of working has helped substantially in increased productivity and ultimately getting more work done.[13]

> It is likely that post-COVID-19, hybrid work culture would be introduced to maintain equity, wherein people would be required to work for home for nearly 1–3 days/week to balance their efficiencies achieved with remote working experience.

However, along with pros, the new normal of working has several cons associated with it. One major con is remote working has changed the office timings, and it is no more 9 to 5. Employees can be contacted at any time for work. Face-to-face interactions are required, as opposed to virtual interaction, to build employee relations, facilitate effective training and collaborations, solve complex challenges with colleagues together as a team and be creative to generate new business ideas. The prolonged hours invested in remote working significantly extend the day, diffuse work–life boundaries, and influences one's mental well-being.[13]

Nevertheless, the expansion of new work culture is likely to release white-collar jobs from restricted time frame and fixed locations of offices and change authentic unspecified jobs toward more specific contract-based work models. An increased number of teleworkers would be considered as a major step toward supporting the elderly, handicapped people, and women to be independent; the categories consist of majority of the population and thus their financial independence will ultimately boost the local and national economies.

Loss of jobs

In terms of employment, the COVID-19 pandemic has gravely impacted formal and informal employment sectors globally, especially domestic workers engaging in informal work for earning daily wages. One of the greatest impacts on domestic workers is the reduction in working hours, leading to reduction in pay, and in majority of cases, loss of jobs owing to fear of contracting the virus and limited mobility due to lockdown measures. Nearly 76% domestic workers affected due to COVID-19 pandemic have been informal employment sector, implying that they were registered for social security and were subsequently noneligible for unemployment-associated insurance. Although during the ongoing pandemic, several countries issued income support for workers in informal employment, such support was rarely accessible to domestic workers due to variety of reasons. The loss of income and lack of any income support and social security have resulted in increased poverty among this informal working class. In countries that imposed 'complete lockdown', nearly 90% domestic workers in informal employment and 50% workers in formal employment have been significantly affected such that they do not possess access to benefits provided as compensation for reduction in working hours and loss of jobs. There are no income replacement strategies for informal employment workers, whereas pensions are being provided for covering formal employment workers for loss of pay but not for loss of jobs or unemployment. In countries that imposed 'partial lockdown', nearly 90% domestic workers in informal employment and 25% workers in formal employment have been largely impacted. On the other hand, in countries that imposed 'weak lockdown', 33% domestic workers in informal employment and 10% domestic workers in formal employment have been largely impacted.[14, 15] Loss of income and jobs has been reportedly more severe for women than men. Additionally, constantly growing burden of unpaid healthcare due to the pandemic has significantly impacted women. This hinders the progress of gender equality so far such that the progress can be reversed. Of note, the current pandemic has highlighted the increased violence and harassment against women during the crisis.[14]

Nevertheless, to combat the ongoing crisis, many countries have implemented a wide spectrum of emergency measures for supporting and maintaining liquidity, despite mandatory restrictions on businesses, employment and quarantine activity. These measures include short-time work and wage subsidy schemes financed by government. Such schemes aim to allow firms, which have been facing economic crisis, to receive support for availing wages of those working reduced hours, ultimately forestalling large-scale unemployment surge. Additionally, the extent of health coverage, sickness-related benefits, and paid–sick–care leaves in several countries have helped protect and secure jobs, incomes, and health of workers.[14]

So, while white collar jobs will adjust to the new reality, we have to find ways to safe-guard the blue-collared workers and people who earn daily to survive doing jobs which cannot be accomplished just online. But certainly, Internet and technology can optimize the search, delivery and upskilling needed for such professions.

LEVERAGING THE INTERNET

In the current digital age where Internet is dominating almost every aspect of life, people should optimize ways to leverage the Internet. There are multiple ways through which businesses and companies can leverage the Internet for their financial growth. Businesses can reach out to multiple venders for procuring supplies at great deals and reach out to clients in any part of the world. The Internet of things (IoT) is promising enough to drive high level of digital adoption throughout consumer industries, manufacturing sector, supply chain management, and other aspects. This in turn leads to operational excellence, generation of novel revenue models, enhancement of employee management, and ultimately superior customer experience. Internet can also be leveraged for effective business by developing a firm' logistic system, pricing and managing online transactions, optimizing communication to key consumer markets, achieving business excellence through customer service, establishing business-to-business relationships and partnerships for competitively selling products in the market, and strengthening the chain of values and business virtues through trending web-based strategies and effective communication.

The Internet has been one crucial element for economic growth. Over the last decade, the Internet's contribution to GDP has grown exponentially. This implies that small–medium-sized enterprises and businesses have been receiving performance boost from Internet. The Internet can also be leveraged through modernization of authentic activities. Along with bringing in substantial value shifts between various global economy sectors, the Internet has tremendous potential to benefit any industry for which internet skill and policy ecosystems should be in place. Developing countries and those with restricted capabilities for transforming digital data into digital intelligence and business opportunities should have in place national development strategies for encouraging digital upgrading in data value chains and ultimately to upgrade national capacities for refining data. This demands national policies to be launched for dealing with risks associated with the extension of digital data and ensuring information safety and privacy. Such policies should also cover the provision of internet access for enhancing digital skills for people hit by job loss, such as those with low income, women, and underrepresented minorities. For data privacy and safety, legislations should be drafted by reviewing and amending existing legislation and stringent enforcement against cybercrimes such as cyber bullying, trolling, misuse, and manipulation of social media by political parties for their benefit. Additionally, government policies and incentives for fast and inexpensive internet access to all.

For effective implementation of these policies, government can also include digital skill learning into institutional curriculum of various national and state boards, schools, and colleges.

CASE STUDIES

1. HELP Grant for Transformational Projects

HELP Grant (network of high-level government leaders, experts, and practitioners) was launched with an objective of identifying and catalyzing e-transformation projects and fee-based engagements of significant impact in several countries working toward leveraging high-end technologies and policy approaches, including Open Data, cybersecurity, microwork, cloud computing, big data analytics, and open innovation for financial growth, poverty curtailment, and citizen engagement. The established network promotes benefits that can be brought out by implementing information and communication technology (ICT) for socioeconomic development. The grant has facilitated the development of the network of chief information officers and open data by co-financing the expert participation of World Bank in key Open Data and e-government events, including European Regional Meeting of the Open Government Partnership in Dubrovnik, Croatia (September 2012); Open Knowledge Festival in Helsinki, Finland (September 2012); UN Public Service Awards Forum in Manama, Bahrain (June 2013); Open Knowledge Conference in Geneva, Switzerland (September 2013); Global e-Government Forum in Seoul, Korea (October 2013); and Global CIO Forum in Helsinki, Finland (May 2013).[16]

2. BANGLADESH: Leveraging Internet for Jobs

A project was launched with an objective of creating an economically viable model for several mobile applications, which would be considered as a brand-new service delivery channel in Bangladesh. The project facilitated the development of useful practical high-level architecture for further establishing a common mobile service delivery platform that could be shared by private and public sectors across the country. The government built this architecture under the Leveraging ICT project (P122201) with an e-Government component. The architecture has been identified by stakeholders as the most crucial subsequent step for leveraging mobile applications for national-level public service delivery. Additionally, the project delivered a top-notch timely output and it leveraged extensive expertise from Korea and received immense consultation-associated support from the National Information Society Agency and National IT Industry Promotion Agency of Korea.[16]

With the advancing rapid digitalization, Bangladesh is focusing mainly on the country's digital economy with a point of view of digital outsourcing. Freelancing has recently come to be a popular convenient promising occupation for many citizens. The facility of easy internet access in urban and rural localities and several government and non-government initiatives launched for promoting freelancing have attributed to the growing economy and novel work lifestyles. Consequently, Bangladesh is now known as the second-largest supplier of online labor. Nearly 500,000 freelancers are currently active and working on a regularly basis, generating nearly $100 million annually.[17]

Bangladesh has addressed the challenge of unemployment with the help of the internet. Women, including those highly educated, are likely to sacrifice their careers for family responsibilities. However, these people can easily resume their careers by taking some IT training and freelancing online as these options provide the opportunity to work from home. Regarding the quality of work, Bangladesh's female freelancers are reportedly gaining higher credibility than their male counterparts. Nevertheless, several challenges remain that hinder the growth of this industry. The scarcity of power supply is one of the grave issues in Bangladesh. Freelancing work requires one to be highly concentrated, which is usually not feasible due to the frequent power cuts. Lack of quality internet services and high broadband prices are often faced by

rural masses and those living in remote areas. Lack of a convenient payment system is another persistent issue faced by this fast-growing industry. Moreover, women's participation in freelancing/gig working sector, although increasing gradually, is not sufficiently high.[17]

3. COLOMBIA: Tailoring Technology Solutions for Urban Challenges

The Korean Trust Fund program was launched in Colombia with an objective of developing customized technology solutions for solving urban challenges and creating an appropriate environment for smart cities. Three Colombian cities, namely Barranquilla, Cali, and Manizales, were included in this program. Particularly, the objectives of the program have been as follows: 1) to remodeling e-government back-office for supporting smart city environment; 2) to develop smart applications in cities for executing the implications of ICT tools for enhanced efficiency of municipal public service delivery; 3) to fabricate exchange of smart applications and begin a network of practitioners in smart cities; and 4) to build national-level consensus for strategizing the plan of action for effective implementation of national Smart Cities Strategy. The program has remarkably modernized the mindset towards technology by spreading awareness among mayors and city leaders regarding the various ways in which ICTs help deliver better services to citizens; and establishing capacity among city officials in leveraging existing ICTs to improve quality of life.[16]

4. INDONESIA: Enabling Key Factors for e-Government

The Government of Indonesia is building multiple national- and sub-national-level programs for offering services to the business community and public through e-Government. The programs include an education portal, electronic ID card program, e-Procurement, online tax payment, and a national single window. Long-term programs are also underway, such as for the development of multiple stakeholders, development partners, and the private sector. On the other hand, short-term impacts of the program have been as follows: (1) Comprehensive assessment of challenges and constraints pertaining to government-level e-Transformation in Indonesia and engagement of multiagency counterpart team; (2) Identification of various options for practical implementation; (3) Contribution to Indonesia's medium-term development planning process, existing fiber-optic connectivity to 364 kabupaten/kota districts/municipalities, etc.; (4) Engagement of public–private sector for discussing government network issues and options; (5) Sharing international expertise and practices, with keen focus on Korean security and experiences; and (6) Informing other World Bank support programs in terms of governance/public sector reform and urban development. Main outputs of the program include development of secure dedicated high-speed network of government communications; integration of government voice and video communications; consolidation of Government data centers for providing a secure environment for government data resources, applications, and provide additional business continuity and disaster recovery capacity; virtualization of applications and storage into an efficient ICT operational environment; and implementation of government cloud using appropriate business models.[16]

5. NIGERIA: Supporting Job Creation and Citizen Engagement

Since 2011, after the establishment of Ministry of Communication Technology, Nigeria has been making substantial progress in boost its ICT agenda. The government developed an ICT Policy in 2012, a National Broadband Development Plan in 2013, and an e-Government Strategy that is currently underway. Instead of building technologies and solutions, Nigerian government has been focused on laying out reusable ICT solutions, which can be effectively replicated. Nigeria plays an important role in the overall development of digital Africa. The World Bank has leveraged the Korean Trust Fund to partner with the Nigerian government on areas, such as developing an Open Government technology framework, leveraging virtualized job opportunities for endorsing job creation and employment opportunities, promoting a telecom Policy Dialogue, and assistance the launch of Federal Open Data Initiative.[16]

SUCCESS STORIES

As the months of pandemic pass, businesses and companies have been reportedly engaging in several inspiring ways to thrive and promote their businesses and serve their communities, despite significant challenges. Due to the global lockdown with COVID-19 pandemic, scientists have collaborated online from various parts of the world to add to the knowledge of the novel virus, and various online tie-ups and collaborations can be seen to keep the employment sector running and functional in every way possible.

New business models have emerged to leverage the Internet, one of them being crowdsourcing. It is based on an open model and leverages digital technology for facilitating establishment of value and transfer of potential by and to public. In crowdsourcing, results can be delivered much quicker than traditional or conventional methods. AirBnB, OYO rooms, Amazon, Facebook, Linkedin, Wikipedia, TripAdvisor, Waze, and Zooniverse are few of the examples of successful crowdsourcing. On these platforms, end-users contribute to create and capture values. Precisely, in Wikipedia, the crowd writes, updates, and edits entries associated with general encyclopedia. In TripAdvisor, people review hotels, restaurants, and travel destinations and write detailed review for public knowledge as to how to reach, what to explore, what things to do, etc. In such leveraging technique, the owner of virtual platform gains value, and the benefits are availed to a social community. Similar to crowdsourcing, co-creation demands inputs and participation from confined limited individuals or experts and does not compulsorily encompass a crowd. Owing to the data from mobile devices, Internet, and Internet of things, more and more companies and businesses are becoming data-driven and internet-based. Additionally, businesses are optimizing the data provided through the open data programs and schemes and government. The business of sharing relies on customers having access to goods or various services through a reliable intermediary, as mentioned above. Business model innovation through Internet and ICT can effectively provide various means for local contextualization. This could be achieved by empowering citizens and modernizing and updating private sector and government services. Government and private sectors should ensure interests of stakeholders and the development and establishment of several new novel businesses. Government policy makers should strategize and implement effective policies in collaboration with private sector to enhance and ensure trust of end-users so that they utilize new ICT-driven services without being afraid of cyber threats.[18]

There are several success stories of businesses and enterprises that managed to survive the pandemic by adapting to online services and facilities. They indeed boosted the local and national economies and put forth various prospects of virtual financial growth. A few examples are

1) **Uber:** Established in 2009 by Travis Kalanick and Garrett Camp, Uber is a ride-sharing company originally launched to address grave taxi problems in San Francisco, USA. Uber app was launched to connect riders and local drivers. Considering its high convenience in terms of taxi and poorly funded public transport services, the service gradually expanded to New York in the year 2010. Since then, the company has extended into various communities worldwide. Consequently, Uber has rapidly expanded the business into international markets.[19]

2) **Alibaba:** Alibaba is China's the biggest e-commerce company that has three prime websites, namely Taobao, Tmall, and Alibaba.com, with millions of users, merchants, and businesses. Alibaba.com is a business-to-business website, connecting manufacturers and buyers globally.

Taobao is like eBay or Amazon. It connects businesses and consumers worldwide. Tmall.com is a marketplace established for the betterment of China's middle-class people, and it focuses on large multinational brands.[20]

3) **Manic Mermaid of Tacoma:** This is a part art gallery and part gift shop located in Washington, DC, USA, were subjected to close down their storefront due to the global lockdown. Nevertheless, to combat the economic crisis, the shop regularly hosted live shows on social media sites, such as Instagram, where viewers were allowed to shop virtually.[21]

4) **Kennay Farms:** This is a sixth-generation distillery in Rochelle, Illinois, USA. Considering the impact of lockdown on the business, the distillery joined the fight against COVID-19 by producing hand sanitizers, instead of traditional bourbon, and donating them online to local healthcare, fire, and police facilities. Switching over to hand sanitizer production was a thoughtful way of protecting local community while staying in the business during the lockdown.[21]

5) **Tribe SF:** Tribe SF is a gym in San Francisco avail virtual classes, online fitness challenges, and online personal training sessions to members for keeping them engaged and motivated. They have created a social group on Facebook and a page on Instagram for workout enthusiasts and tagged gym members for keeping the business running amid the lockdown. As a response, gym members reportedly used various props for workout challenges, such as wine bottles, succulents, or rice bags as substitutes for weights.[21]

6) **Enhancing Digital Government and Economy (EDGE) Project:** This project has recently been launched in Bangladesh and aims to create nearly 100,000 job opportunities, especially encompassing women empowerment, and train the youth regarding digital–disruptive technological advancement. The EDGE project aims to improvise cybersecurity, establish resiliency for potential future crises, and enable the government to function online for delivering and availing crucial public services to citizens and businesses. Moreover, to mitigate vulnerabilities and challenged brought by the COVID-19 pandemic and prepare for the Fourth Industrial Revolution, EDGE will assist digitalize small–medium enterprises and several strategic industries.[22]

7) **Jumia:** With an aim of connecting African consumers and entrepreneurs to achieve greater heights in business world, Jumia was launched in 2012 in Nigeria. It is working towards linking e-commerce sites in Africa to establish a platform where small, medium, and large African companies link with potential market. This is likely to create a modernized ecosystem bypassing the middleman. Jumia has grown to be popular in nearly 23 African countries among more than half a million sellers. Jumia is a hub for products and services across the retail, food and hospitality, talent recruitment, concierge, and the hotel and catering industries. Additionally, it has been upskilling and providing employment for several residents of Africa qualified in areas, including Engineering, information technology, online marketing, and web development.[23]

8) **Raddish Kids:** Considering the closures of schools and educational institutes due to the pandemic, a team of Raddish Kids, a culinary club, brought families together around food and avail practical learning experience to kids and children. The club donated around 50,000 cooking kits in order to promote a series of cook-along classes on Facebook Live.[21]

9) **Couch concert series:** Due to COVID-19, a New York-based musician Ludovica Burtone had to stop teaching music. However, she stated hosting online concerts from home. Her online

presence brought her more remote work, from teaching music to producing music to several new music collaborations. She currently offers her services online, which include music classes, remote recordings, and original compositions.[21]

10) **Paytm Mall:** Recently, Paytm Mall collaborated with nearly 10,000 grocery stores, enterprises, and several small-scale businesses, especially the ones affected due to global pandemic and lockdown, for availing hyperlocal deliveries. Paytm Mall aims to enable small businesses by permitting them to sell fundamentals online through company's logistics chain services.[24]

11) **Shopmatic:** This is a technology firm based on Singapore. It supplies e-commerce solutions to small-scale businesses and enterprises. Launched with an aim to empower aspiring entrepreneurs by providing digital footprint, Shopmatic has recently collaborated with Octopus, a retail management solutions company in Singapore, for disrupting the retail market in Asia–Pacific with services that address the gaps existing for offline businesses by encouraging them to go online.[24]

12) **Instamojo:** Instamojo is a digital payment startup based in Bangalore. It has launched an initiative for pharmacies, physical stores, and logistics companies for helping deliver fundamentals during the lockdown imposed due to COVID-19 pandemic. The startup offers Priority KYC for the services to be available online in >5 minutes. In spite of the lockdown, Instamojo managed to acquire 1,500 merchants per day without any advertising.[24]

13) **Zoom:** Founded in 2011 by MR. Eric Yuan, Zoom was initiated with a seed funding of $3 million. In April 2019, the funding was raised to $840 million in initial public offering. In the ongoing pandemic, where majority of companies and businesses have asked their employees to work from home and even laid off many, this App has come to be extremely popular with a promising future. The business model offers several products for letting people connect via audio, video, and chat. Zoom Rooms and Workspaces are used by large scale organizations to conduct virtual meetings.[25]

WHAT NEXT?

The Internet promises a bright future and new potential opportunities to employees, employers and governments. Utilizing Internet for recruitments and standard work processes offers substantial benefits, such as effective budget management for employers and easy application processes via job portals for jobseekers. Thus, to optimize the benefits of Internet in the employment sector, government and educational institutions should prioritize digital skills and technological education to encourage students at early age to effectively use the Internet. Internet services should be improvised and made widely available to even remote locations to endorse healthy workspaces and working strategies that go beyond 9-to-5 restrictions. The benefits of using Internet can be maximized when internet skills are used along with effective problem solving and networking capacity to secure higher job posting or launch new business models with potential to produce employment opportunities.[2]

Conclusively, social media and the Internet are valuable tools if used optimally. The Internet is transforming job search, recruitment, and hiring processes by posting about vacancies online to extend the reach of employee search in easy cost-friendly manner. The Internet allows jobseekers to take up more active job roles. Young generations and people with high-level qualifications are highly likely to utilize internet services for job hunt, whereas older generations and those in manual occupations are less likely to be dependent on the Internet. This signifies the importance of increasing access to the Internet and skill development for optimized use.[2] The number of professionals and occupations dependent on the Internet is increasing substantially. Government and any private companies need to take measures to ensure that individuals have the ability and access to use the Internet or educate them regarding the same if need be.[2] Considering that the Internet is not unidirectional, measures need to be taken to combat inequalities in internet access and its quality and to customize interventions to particular demands of internet non-users. Retrenchment in public expenditure and progressing digitization agenda underline the need for such active measures.

1. Internet for Seniors and Women: Since Internet is relatively latest and constantly evolving concept, it is evidently more difficult for older generations to get accustomed to use Internet in their regular activities than the 21st-century millennial. Thus, special skilling programs focusing on educating technology illiterate people to bridge the gap and improve optimization of Internet and digital devices for the betterment of society. Several upskilling programs can also be put in place to ensure that people are aware of upgradation and advancing internet-associated services to be able to adapt to evolving technology faster than before. Special skilling programs can be provided for women as well. They can also be provided with opportunities for work from home as they can and deliver in various roles.

2. Reaching the unreached. Connecting the remotest parts and people staying in areas with poor connectivity. For remote locations where Internet is tremendously scare, government and private organizations should strategize to support digitally excluded people to access Internet by availing them basic Internet and digital services.

    Enabling policy ecosystem for leveraging the full potential of Internet while addressing the issues of health, privacy and security

3. Digital Occupational & Exposure Health Guidelines: Considering that majority of the people are using digital devices to access Internet for >7 hours/day, government or private companies should strategize and implement measures to curtail the prolonged screen exposure to avoid any health problems, such as eye pain, headache, neck–shoulder ache, computer vision syndrome, and back pain. Such measures would ultimately help maintain or increase productivity of employees working.

    So, Digital Occupational and Exposure guidelines are a must have and the WHO must work on it. Else, we will have serious health issues starting from kids to people of all age groups.

4. Affordable video conference solutions should be launched and promoted by the stakeholders mostly the governments in developing world.

5. Conducive government policies are still lacking in some countries, need to be implemented globally. In some regions, the productive usability of the Internet then becomes limited, diminishing progress in a way.

6. Sustainable automation should be made the new SDG#18.

    Internet has also attributed to the loss of jobs due to outsourcing and downsizing of work. This implies that employees need to adapt to new changing internet patterns and learn digital skills to thrive in the competition, highlighting the need of effective training modules to be arranged by the government, private companies, and educational institutes for educating millennials in terms of optimizing the Internet for individual financial stability and national–international economic growth. Since the introduction of new normal that mainly requires employees to work from home and businesses to function online, a framework for sustainable automation needs to be proposed and executed to ensure that introduction of internet-associated services in various sectors would not lead to mass unemployment.

> Sustainable automation should be made the new SDG#18.

REFERENCES

1. Service Futures. How new technologies will impact our workplaces towards 2020. Accessed on December 12, 2020. Available from: https://www.servicefutures.com/new-technology-will-impact-workplaces-towards-2020.

2. Nominet Trust. Employment and the Internet. Accessed on December 12, 2020. Available from: https://socialtechtrust.org/wp-content/uploads/2017/11/NT-SoA-4-Employment-and-the-internet-1.pdf.

3. Bhuller M, Kostol A, Vigtel T. How broadband Internet affects labor market matching. Available at SSRN 3507360. 2019 Dec 19.

4. Analytics India Magazine. Impact on Jobs across Emerging Technologies During the Current Pandemic Crisis | By AIM & Jigsaw Academy. Accessed on December 12, 2020. Available from: https://analyticsindiamag.com/impact-on-jobs-across-emerging-technologies-during-the-current-pandemic-crisis-by-aim-jigsaw-academy/.

5. PYMNTS.com. COVID-19's Impact on The Gig Economy. Accessed on December 12, 2020. Available from: https://www.pymnts.com/gig-economy/2020/covid-19-impact-gig-economy/.

6. FusionConnect. VoIP Test - VoIP Quality Test Tool. Accessed on December 28, 2020. Available from: https://www.fusionconnect.com/speed-test-plus/voip-test/

7. Pew Research Center. Internet and Job Seeking. 2015. Accessed on December 23, 2020. Available from: https://www.pewresearch.org/internet/2015/11/19/1-the-internet-and-job-seeking/

8. Kane partners. The Importance of Social Media in Today's Job Market. 2017. Accessed on December 12, 2020. Available from: https://kanepartners.net/the-importance-of-social-media-in-todays-job-market/.

9. Hathway. Which is better, a Wi-Fi connection or a broadband? 2019. Accessed on December 23, 2020. Available from: https://www.hathway.com/About/Blog?type=Which-is-better-a-Wi-Fi-connection-or-a-broadband

10. Impact of broadband on the economy. Research to Date and Policy Issues April 2012. Accessed on December 23, 2020. Available from: https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf

11. Internet society. Internet and Jobs: What Do Young People Think of the Future of Work? 25 July 2018. Accessed on December 12, 2020. Available from: https://www.internetsociety.org/blog/2018/07/internet-and-jobs-what-do-young-people-think-of-the-future-of-work/.

12. Financial express. Redefining new work culture during COVID-19: Workplaces need to create better experience. October 26, 2020. Accessed on December 12, 2020. Available from: https://www.financialexpress.com/jobs/redefining-new-work-culture-during-covid-19-workplaces-need-to-create-better-experience/2114158/.

13. BBC. Coronavirus: How the world of work may change forever. Accessed on December 12, 2020. Available from: https://www.bbc.com/worklife/article/20201023-coronavirus-how-will-the-pandemic-change-the-way-we-work.

14. OECD. The impact of the COVID-19 pandemic on jobs and incomes in G20 economies. Accessed on December 12, 2020. Available from: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_756331.pdf.

15. International labor organization. Factsheet Impact of the COVID-19 crisis on loss of jobs and hours among domestic workers. June 15, 2020. Accessed on December 12, 2020. Available from: https://www.ilo.org/global/topics/domestic-workers/publications/factsheets/WCMS_747961/lang--en/index.htm.

16. World Bank Group. SOME SUCCESS STORIES FROM THE ICT4D KTF. Accessed on December 12, 2020. Available from: https://www.worldbank.org/content/dam/Worldbank/Brief/TAI/ICT_KTFBrochure.pdf.

17. World Economic Forum. How the digital economy is shaping a new Bangladesh. June 19, 2019. Accessed on December 28, 2020. Available from: https://www.weforum.org/agenda/2019/06/how-the-digital-economy-is-shaping-a-new-bangladesh/.

18. ICT4SDG. ICT-centric economic growth, innovation and job creation. Accessed on December 12, 2020. Available from: https://www.itu.int/dms_pub/itu-d/opb/gen/D-GEN-ICT_SDGS.01-2017-PDF-E.pdf.

19. Single Grain. 10 Lessons Startups Can Learn from Uber's Growth. Accessed on December 12, 2020. Available from: https://www.singlegrain.com/blog-posts/business/10-lessons-startups-can-learn-ubers-growth/.

20. WSJ. What is Alibaba? Accessed on December 12, 2020. Available from: https://graphics.wsj.com/alibaba/.

21. Facebook for business. 5 Real Stories About Adapting to Do Business Online. April 30, 2020. Acessed on December 12, 2020. Available from: https://www.facebook.com/business/news/5-real-stories-about-adapting-to-do-business-online.

22. The World Bank. Bangladesh: Enhancing Digital Government and Economy Project. June 19, 2020. Accessed on December 12, 2020. Available from: https://www.worldbank.org/en/news/loans-credits/2020/06/19/bangladesh-enhancing-digital-government-and-economy-project.

23. She Leads Africa. 5 top e-commerce platforms in Africa. Accessed on December 12, 2020. Available from: https://sheleadsafrica.org/growth-of-ecommerce/.

24. Yourstory. 5 companies enabling offline businesses to go online amid the coronavirus crisis. May 9, 2020. Accessed on December 12, 2020. Available from: https://yourstory.com/2020/05/5-companies-enabling-offline-businesses-online-coronavirus.

25. HustlerTalks. Zoom Business Model and success story, funding and growth. Accessed on January 5, 2021. Available from: https://hustlertalks.com/zoom-business-model-and-funding-success-story/

FOLLOW OUR WORK AND COLLABORATE

IGF Internet Governance Forum

Dynamic Coalition on Internet & Jobs

https://twitter.com/Internetandjobs

https://www.facebook.com/Internetandjobs/

https://www.linkedin.com/groups/12411244/

https://www.instagram.com/internetandjobs/

**This report was released on 31st December 2020
Mumbai, India**

IGF Internet
Governance
Forum

Dynamic Coalition on Internet & Jobs

This report was released on 31st December 2020
Mumbai, India