Report of the

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9-11 December 2022

Theme

Leveraging Techade for Empowering Bharat

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ABBREVIATIONS

AI	Artificial Intelligence
API	Application Programming Interface
APNIC	Asia-Pacific Network Information Centre
ASCII	American Standard Code for Information Interchange
BCCC	Broadcasting Content Complaints Council
BIF	Broadband India Forum
BNPL	Buy Now, Pay Later
CBDC	Central Bank Digital Currency
CCAOI	Cyber Cafe Association of india
CCG	Centre for Communication Governance, National Law University
CCI	Competition Commission of India
CCTLDS	Country Code Top Level Domain
CDAC	Centre for Development of Advanced Computing
CIRP	United Nations Committee for Internet-Related Policies
CoWin	Winning over Covid
CSAM	Child Sex Abuse Material
CSR	Corporate Social Responsibility
DNS	Domain Name System
DPG	Digital Public Goods
DPI	Digital Public Infrastructure
ERNET	Education and Research Network
EU	European Union
FICCI	Federation of Indian Chambers of Commerce & Industry
GDPR	General Data Protection Regulation (EU)
GST	Goods and Services Tax
GTLD	Generic Top Level Domain
IANA	Internet Assigned Numbers Authority
ICANN	Internet Corporation on Assigned Names and Numbers
ICT	Information and Communications Technologies
IDN	Internationalized Domain Names
IDNA	Internationalized Domain Names in Applications
IGF	UN Internet Governance Forum
IIGF	India Internet Governance Forum
ILIA	Indian Language Internet Alliance
IoT	Internet of Things
IP	Intellectual Property, Internet Protocol
ISO	International Organization for Standardization
ISOC	Internet Society
JAM	Jan Dhan accounts-Aadhar-Mobile numbers
JLG	Joint Liability Group
KYC	Know Your Customer/Client
LDH	Letter-Digit-Hyphen
LMIC	Low- and Middle-Income Countries

MAG	Multistakeholder Advisory Group
MEITY	Ministry of Electronics and Information Technology
ML	Machine Learning
MOSIP	Modular Open Source Identity Platform
MSME	Micro, Small and Medium Enterprises
NCMC	National Common Mobility Card
NIC	National Informatics Centre
NIXI	National Internet eXchange of India
NLU	National Law University
ODE	Open Digital Ecosystems
OECD	Organisation for Economic Co-operation and Development
ONDC	Open Network for Digital Commerce
OSG	Online Skill-based Games
OSI	Open Systems Interconnect model
PMRPY	Pradhan Mantri Rojgar Protsahan Yojana
PWD	Person(s) with Disabilities
RBI	Reserve Bank of India
RTI	Right to Information Act
SMC	Social Media Companies
SP-ODE	Social Protection Open Digital Ecosystems
SRO	Self-Regulatory Organization
TCP	Transmission Control Protocol
TRAI	Telecom Regulatory Authority of India
UA	Universal Acceptance
UASG	Universal Acceptance Steering Group
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNFPA	United Nations Population Fund
UPI	Unified Payment Interface
USO	Universal Service Obligation Fund
VC	Venture Capital
VR/XR	Virtual Reality/Extended Reality
YIGF	Youth IGF
YT	Youtube

1. Messages

Message from Chair, IIGF2022

The Second edition of the India Internet Governance Forum was held from 9th to 11th December, 2022 in hybrid mode. Honorable Prime Minister Shri Narendra Modi has declared this decade as a technical decade, techade. Also, India has taken over the presidency of G20 on 1st of December, 2022. The two developments put together underlie the main theme for this particular edition of IIGF 2022 which is 'Leveraging Techade for Empowering Bharat', where Bharat gives greater emphasis to the rural masses of India.

Today, the time has come when internet has become an integral part of all of our life, personal life or professional. There are more than 860 million Broadband users on date which is perhaps the biggest number in the world for any country. We have 1.2 billion telephone users, including mobile users, which is the second highest in the world. India has the highest broadband data consumption per month. But the tariff, whether for the telephone connection or for the data, is the most affordable world over.

This edition of the IIGF had five sub themes on which the discussions and debates were held. The mode was through workshops, fireside chats, flash talks and panel discussions. While the opening and closing and some sessions were in hybrid mode, the others were in virtual mode and participants were given the option of joining in by WebEx or could watch on YouTube.

The proceedings that have been brought out will serve as a record with key takeaways and summaries of all the sessions. I hope these proceedings capture the essence of the India IGF 2022 for posterity.

Anil Kumar Jain
Chair, IIGF 2022

Message from Vice Chair, IIGF 2022

The second edition of the India Internet Governance Forum conference from 9th to 11th December 2022 represented a great step forward in the multi-stakeholder journey to achieve continuously higher levels of Internet Governance in the country. I consider it a great honour to have been associated with the second edition also as one of the Vice Chairs to serve this noble cause in a small way. There was very high enthusiasm from different individuals and entities to submit proposals for workshops and, with the proposals being generally of high quality, we had the pleasant difficulty of stitching to put in place 17 workshops in place of the earlier planned 15. In fact, it was also a pleasure to include some flash talks that had not been planned initially.

The outcomes from all the deliberations in the various sessions from introduction to conclusion are both interesting and extremely useful and these, in my opinion, have been excellently captured by Mr. Satish Babu, Knowledge Committee Chair and his team, in the Proceedings document prepared by them with great care and sincerity. We hope that these proceedings would be of use to policymakers when considering the development of new policies or for changes to existing policies.

There was also tremendous enthusiasm and involvement from the large number of volunteers who flocked in to make the arrangement of the event smooth and successful. Our great thanks to all of them and all the super-committed functional Committees. We are greatly motivated to see the Internet Governance movement growing from strength to strength and look forward to an even more dynamic and fruitful India Internet Governance Conference 2023.

T.V. Ramachandran
Vice Chair, IIGF 2022

Message from Vice Chair, IIGF2022

India has the largest number of Internet users at the lowest cost possible. Today we are hurtling towards a situation where we are going increasingly digital in all spheres. For India, “Techade” refers to the fact that not only will the benefits of technology be reaped by us in India, but we in India will be contributing to that techade for the rest of the world.

Large, tectonic changes happening in our ecosystem are leading to many different developments, ripping apart the fabric of how we live, how we work, how we discuss, how we converse, even how we meet. Massive investments are being made in infrastructure and technology related to the Internet to ensure last mile connectivity. Technological sovereignty is crucial to ensure that all systems are operable, inclusive and accessible, especially in a country as multilingual and diverse as India. It is necessary, therefore, to understand how the Internet should be governed for India.

Further, it is necessary to think the Indian way, identify the Indian problems and see how they can be solved. This was what was done over the three days of the India IGF 2022. This compilation forms the proceedings of the IIGF and it is hoped that they will form a useful repository of material on the various facets of internet governance.

Jaijit Bhattacharya
Vice Chair, IIGF 2022

Message from Chair, Knowledge Committee, IIGF2022

It has been my privilege to be a part of the organizing group of the second India Internet Governance Forum. Together with my colleagues, it has been a significantly rewarding experience in contributing to the event and assist by documenting it for posterity through these proceedings and key takeaways.

There are several challenges in documenting such a diverse, multistakeholder-driven event as there are considerable variations in the points of view of the participants, especially considering that we have had participants from the Government—including the Minister of State—as well as the Industry, the Technical Community and Civil Society. Together with the Editor of this document, we have tried to capture the essence of the sessions. For the Opening Session and Closing Session, we have not attempted to summarize the presentations of the key guest speakers, but are including their speeches in their entirety, so that readers can draw their own conclusions.

Through this document, we have attempted to capture the diversity of IIGF 2022—reflecting the priorities and aspirations of the Internet Governance community that reflects the enormous diversity of India, including linguistic and cultural, demographic, geographic, accessibility & disability, and gender.

I would like to thank Dr Ahana Lakshmi, who not only compiled and edited this document but also joined the event as a rapporteur. I would like to thank all the rapporteurs who voluntarily spent their time contributing to this document. Finally, I would like to thank the IIGF 2022 Chair, Vice Chairs, all my colleagues in all the Committees of IIGF 2022, and the Secretariat, who collectively and collaboratively organized this significantly impactful event. I join my colleagues in looking forward to an Internet that truly belongs to all, and one that contributes to the growth and well-being of the country and all its citizens. Jai Hind!

Satish Babu
Chair, Knowledge Committee, IIGF2022

2. IIGF2022: Key Takeaways

1. Fostering Digital Innovation towards economic progress

a. A number of economic opportunities are emerging as data connectivity penetrates Bharat
b. We need to ensure opportunities for not only the rural population but also disadvantaged urban and rural actors as well
c. Skill- and Capacity-building across the population would be useful to ensure opportunities can be utilized
d. Bharat needs local-language applications with easy-to-use interfaces
e. There is an emerging dominance of digital connectivity in daily life, both personal and professional
f. A multi-lingual internet is an important need for the future, and the Government has already initiated steps toward this
g. To enhance inclusivity, we need to overcome the geographic, financial, and gender divide
h. Inclusivity for digital access to Persons with Disability must be ensured
i. It is necessary to ensure coherence between connectivity and policy
j. Resilient and reliable models of connectivity are required for India's heterogeneity.
k. Two core components of the Techade are digital public infrastructure and digital public goods. Impact at scale is essential. Inclusion is key. Reducing entry barriers is important
l. There is a need to guard against over-regulation and the needs of all stakeholders should be balanced. We cannot lose sight of the benefits brought in by big companies, but at the same time, the rights of small businesses should not be denied. Metrics used in considering dominance in traditional markets are not usable for digital markets
m. The five pillars of the digital economy must be recognized: Digital Infrastructure spanning the Government and Private sectors; Reliable and Interoperable Digital Public Platforms; Digital Financial Services; Digital Skills; and an Enabling Environment that promotes Trust.

2. Public Digital Platforms

a. India is at the forefront of digital payment systems, with 88 billion transactions last year and 120 billion expected this financial year
b. UPI has been the most visible product, but there are also others such as RuPay and FasTag. A large proportion of RuPay cards are under PMRPY.
c. RuPay has a diversity of options for different purposes. It is also an international payment instrument.
d. RuPay has enabled rural women and men to avoid traveling between villages
e. FasTag has been a silent revolution in toll payments, avoiding leakages in cash-based tolling systems

f. With India's G20 Presidency, early use cases such as CoWin, MOSIP, UPI, and RuPay will gather global interest, thus showcasing India's DPG/DPI success story.
g. In SP-ODE, stakeholders also act as SP-ODE innovators allowing them to contribute to the ODE ecosystem and enhance its specificity for different citizens and users; also digital social protection delivery in terms of a role, risk, and opportunities infrastructure can be envisioned
h. Non-traditional forms of exports through DPIs should be recognized
i. Creative options such as using native language speakers for translation services through smartphone apps rather than in-house translators or automatic translation services should be tried for local apps as contextual translation is needed.

3. Reaching the unreached

a. As of now, Rural India drives Internet adoption
b. The government's efforts at policy and regulatory regimes have helped mobile operators contribute to the growth of rural mobile penetration
c. Unfortunately, the rural-urban tele-density gap appears to be widening (based on TRAI data)
d. Bharatnet, started in 2011, has reached over 125,000 villages, but it is not fully utilized
e. High-speed broadband should reach all areas in both urban and rural contexts. Currently, about 69% of the rural population does not have access to high-speed broadband (60% in urban areas)
f. Investment is required to cover these gaps. There are also several new solutions available such as PM-Wani and Freespace Optical Communication
g. We need gender parity in connectivity, and also need connectivity and accessibility devices for Persons with Disabilities. The digital gender divide is not just an access divide, but also a device divide, bandwidth divide, institutional divide, and social divide.
h. About 400-500 million people have poor last-mile connectivity, we shouldn't create new policies (such as on food or health) without connecting everyone first
i. We need not just connectivity, but meaningful connectivity
j. Last-mile connectivity should be available on demand to anyone
k. USO Funds have been deployed well. There may still be a need for assessing the utilization and if there are gaps and leakages in the ecosystem; Grassroots surveys would be useful in assessing how skilling can help small-scale industries and MSMEs.
l. Ensuring last-mile connectivity needs a combination of tech options. Optic fiber is not the only solution—we need a bouquet of solutions
m. In order to promote the multilingual Internet, IDNs should be popularized, local language content created, user interface issues sorted out, rendering issues with some scripts addressed, and Universal Acceptance achieved.

4. Building Trust, Resilience, Safety & Security

a. The theme of the Indian Internet should be: An Open, Safe, Trusted and Accountable Internet. Security must be foundational in the design.
b. Online spaces are becoming toxic for women and sexual minorities. As more companies seek to make workspaces safer, sexual harassment has moved to digital spaces
c. The power of Social Media has to be balanced with accountability. The Government and Social Media companies must act to ensure that women's freedom of expression and rights are upheld in digital spaces
d. Safe spaces for communication and interactions for vulnerable populations help in empowering women, as they gain confidence in dealing with other platforms through such interactions
e. Offline grievance redressal is also critical
f. It is necessary to secure technologies through proper governance of data and appropriate frameworks at the company level, coupled with processes such as audits in order to overcome unintentional and intentional data breaches
g. The Government should create a Cybersecurity stack that both startups and existing companies can comply with, for better security
h. Some data governance challenges do not have simple solutions, and may require a multi-stakeholder consultative process
i. Secured technologies such as end-to-end encryption play a crucial role in securing the Internet, making information secure and trustworthy. This helps to build trust online, which is essential to create an inclusive and empowered digital economy in India
j. There is a need to explore alternative ways to address genuine concerns of law enforcement agencies related to hate speech, unlawful content, security issues, etc.
k. India needs to train more cyber-security experts and also evolve a method of retaining them
l. Training and capacity-building for youth is an important aspect to build resiliency within the community, as youth are often tech ambassadors. Training and capacity-building are also important considerations for Law Enforcement.
m. Global benchmark standards should be integrated into domestic policy legal frameworks
n. User-friendly platforms tend to enhance user trust and should be promoted
o. Continuous innovation is required as issues on online trust are on an exponential rise.

5. Internet Regulation

a. As a critical engine of global economic and technological growth, the world looks up to India for direction in ensuring openness, transparency, trust, and accountability in the digital economy. India, therefore, has a unique opportunity to create regulatory frameworks for different digital artifacts—including DPI, DPGs, and OSGs—that serve as model regulations for the whole world
b. India must consider a principle-based national regulatory framework that is agile, nimble, and resilient to changes in technology and new business models. The framework must also provide

principles and technological standards for preventing user harm, ensuring platform integrity, protection of minors and effective grievance redressal

c. Regulation should be tech-neutral and forward-looking rather than overbearing
d. Increased participation of Indians in global standard-setting processes to ensure emerging technologies are useful to India
e. Metaverse is a convergence of many emerging technologies with high applications in education, skilling, and healthcare. Regulating it will be complex. Safety and security by design will be critical
f. AI poses several regulatory challenges. For instance, there's a need to prevent or reduce biases in algorithms, ensuring fairness, and ensuring human rights. The Government, tech companies, and civil society have to jointly address these
g. The Government needs to play the role of enabler in enforcement but the engagement of the private sector is essential for buy-in
h. Before drafting any regulation, a comprehensive study should be undertaken for identifying any unintended harms that can be caused by the proposed regulation
i. Some reform of policy is required for further progress (e.g. de-licence 6GHz)
j. There are emerging tech opportunities for India. For instance, if India solves the challenge of Internet access for persons with disability, the entire world will benefit
k. Pricing should be considered in a more inclusive way as the costs and consequences are borne most by the most vulnerable
l. The state must maintain a crucial position on the rights of the citizen as they apply to online harms; this means a balance of user safety and platform freedoms. With careful interventions, the state can protect Indians while ensuring that large digital platforms match their promises against misinformation, hate speech, and harassment
m. Between the two global models—a free, open internet and a State-controlled internet—India is closer to the first, although we have Internet shutdowns that adversely impact all stakeholders in some regions.

3. Report of Opening and Closing Sessions

3.1. Opening Session

3.1.1. Summary

The opening session had Shri Anil Kumar Jain, Chair, IIGF 2022 welcoming the gathering and providing an overview of the IIGF theme, 'Leveraging Techade for Empowering Bharat'. He said that IIGF this year had five themes and a variety of formats including workshops, panel discussions, flash talks and fireside chats for discussion on various topics. Ms Tripti Sinha, Board Chair, ICANN, spoke about the importance of Internet governance and the role of ICANN. Smt Asha Nangia, Scientist G and Group Coordinator at MeitY said that IIGF was a multi-stakeholder endeavour considering everyone at par in policy making. Dr Jaijit Bhattacharya, Vice Chair, IIGF 2022, spoke about the importance of Tech Sovereignty. Shri T.V. Ramachandran, Vice Chair, IIGF 2022 spoke about the key points raised by Honourable Minister Shri Ashwani Vaishnaw at the IIGF in 2021.

3.1.2. Full text of the address of Ms. Tripti Sinha

Namaste, hello and welcome to the India Internet governance forum. It's an honor to be here today and speak at India IGF in the country of my birth. This forum offers a critical platform for bringing together a variety of stakeholders to discuss public policy issues related to the Internet.

ICANN's mission is to ensure the stable and secure operation of the Internet's unique identifier systems. ICANN has two pillars to its operations. The first is a technical pillar: ICANN helps make it possible for your device or platform to connect to any other device or platform on the Internet across the globe. We do this through the coordination and administration of the unique identifiers like IP addresses and domain names. The second pillar is policy development. The technical aspects of the Internet's unique identifiers are governed through the ICANN multi-stakeholder model. Through this model, individuals, non-commercial stakeholder groups, industry and governments play important roles and consensus-driven policy making. The ICANN organization monitors and enforces compliance with the obligations prescribed by the consensus policies developed by the global multi-stakeholder community.

ICANN appreciates the Indian government's support for the multi-stakeholder model of Internet Governance and we acknowledge the growth of the broader Internet ecosystem in India which has 800 million users projected to grow to over 900 Million by 2023 compared to just 400 million users in 2018; 5G enablement which was launched in October 2022 by the Prime Minister; and almost 1 billion mobile users with close to 40 percent smartphones. The government's push towards digital inclusion of citizens and the development of platforms like UPI and AADHAAR is noteworthy. It will enable rural India to benefit from the Internet and make it a true digital economy. This resonates with the theme of the India IGF 2022 which is 'Leveraging Techade for Empowering Bharat'.

ICANN as part of its vision for a global Internet is pleased to work with and support the Indian government in reducing the digital divide and is supporting the growth of the multilingual Internet, the

Internationalized Domain Names (IDNs) in all 22 constitutionally recognized languages and Universal Acceptance in India. ICANN works with the multi-stakeholder and local language community to work on twenty-six scripts for the APAC region. Fifteen of those scripts are being used in India. We also will celebrate the first Universal acceptance day in 2023 in India and I look forward to being a part of it with my colleagues from ICANN and all Community stakeholders. IDNs and UA will also provide a strong push for local language enablement and growth of the rural digital economy, one that is in their language, is relevant for them, and is discoverable.

With the UPI, India showed the world how to improve financial inclusion and the digital payments infrastructure. I do foresee India leading the way in the multilingual Internet space as well, being a torchbearer and knowledge repository for the rest of the world, and not only enabling the next billion to come online but the 75 percent of the world does that does not use a Latin script as a native script. In conclusion, ICANN is driven by the public interest and the mission to ensure the stable and secure operation of the Internet's unique identifier systems.

Our vision is to be a champion of the single open and globally interoperable Internet by being the independent trusted multi-stakeholder steward of the Internet's unique identifiers, and by providing an open and collaborative environment where diverse stakeholders come together in the global public interest to secure operational excellence. The stewardship of the IANA functions continuously improve the unique identifier systems, strengthen the security of the domain name system and the DNS root service system, evolve ICANN's governance model to be increasingly effective, transparent and accountable, improve the effectiveness and inclusiveness of ICANN’s multi-stakeholder policy development processes, anticipate and manage the impact of legislation and regulation, and ensure that ICANN is technically robust and financially sustainable.

We encourage all to help build the Internet for the next billion users and continue to expand access to the Internet through IDNs and focus on solving the UA challenge. Platforms like India IGF are critical in engaging academia, civil society, governments, volunteers, industry and the technical community in defining Internet governance. Any changes to it can affect how the Internet operates and potentially results in accessibility problems for all Internet users. This is especially important now when many countries or intergovernmental organizations are deliberating new Internet-related regulations, legislation, resolutions, or initiatives that aim to tackle the many Internet-related issues society faces today such as cyber security, protection of personal data, e-commerce, data locality, Internet access, public safety, and other topics. I thank the team at India IGF for giving me this platform to share my thoughts and I wish all the participants an engaging conference ahead.

3.1.3. Full text of the address of Smt Asha Nangia

Good evening Ladies and Gentlemen, and ma’am Tripti Sinha from ICANN. I am thrilled to be at the opening ceremony of the India Internet Governance Forum, IIGF 2022. IIGF 2022 is a multi-stakeholder platform bringing together representatives from various groups considering all to be at par to discuss

public policy issues related to the Internet. As you are aware, the Internet is very important and so is Internet governance. IIGF 22 is a three-day hybrid event starting from 9th to 11th December 2022. As Mr Jain has already elaborated, there will be multiple activities and multiple panel discussions and workshops during these three days which would be focusing on India Internet governance and the strategies and policies thereafter. The onset of India's e-governance and Internet activities in India has brought a paradigm shift in the way our country is governed. As of date, we have 1.4 billion citizens, 1.3 billion mobile phone users and also we have 800 million Internet users. If we see to it that urban cities have already got Internet users, but now we are focusing on the rural areas where we want that the Internet should reach even the last-mile people sitting in the rural areas. India has become the pre-eminent nation using technology in governance. India stack is a powerful globally recognized symbol of India Innovation with Aadhaar and UPI creating an entire ecosystem of their own. These systems are one of their own kind which are not even existing in the world. An interesting fallout has been that India's innovation ecosystem is now one of the fastest growing in the world. As the Prime Minister said the next decade can be India's tech decade, techade. Welcoming our global friends and counterparts at this forum, we look forward to having an informative and learning dialogue exchange regarding the Internet during these three days that would ensure the growth and development of the nations in all. I wish success to India Internet governance Forum 2022 and the whole team behind this initiative. Thank you everyone, thank you so much.

3.2. Closing Session

3.2.1. Summary

Shri T. Santhosh, Scientist E, MeitY, welcomed the gathering and spoke about the significance of multi-stakeholderism. Mr Dilsher Malhi, Founder, Zupee spoke of the importance of startups and their importance in responding to challenges. Shri N.G. Subramaniam, COO, TCS spoke about the Internet backbone on which most of the innovation is happening and the importance of protecting the core principles of the Internet. Mr Paul Mitchell, Chair of the IGF Multistakeholder Advisory Group pointed out that the structure and approach to the IGF as a whole enables programs like the Indian IGF to focus on issues of the most direct relevance to the local conditions and the Indian IGF topics directly relate to the experience in India. Dr Vint Cerf said that it was necessary to work hard and make the Internet work better and to ensure that freedoms expressed in UDHR are available in the online world as well. Shri Alkesh Kumar Sharma, Secretary, MeitY emphasized enhanced connectivity, skilling, digital literacy, inclusivity and safety. Hon. Minister of State, Shri Rajeev Chandrasekhar, spoke about the importance of an open Internet. He said that consultations like those of the past three days help in taking forward with the necessary guard rails and boundary conditions and enabling environments. A vote of thanks was proposed by Ms. Sarika Gulyani, Director and Head-ICT, Digital Economy & FICCI-ILIA.

3.2.2. Full text of the address by Shri N.G. Subramaniam

At the outset, I want to thank Dr Cerf for giving us the Internet. It has been a pleasure to e-meet with you right now. We had a few guests at home some time back, as conversations go, my contemporary said, ‘Imagine the time we did not have the Internet’, and the children who were listening to it said, ‘what do you mean, you did not have the Internet’. I thought that sums it up all. My son is a toxicologist, and he is

very passionate about protecting endangered species and applying technology to that field. In one of the conversations with the companies at a conference, the other person was curious and asked him, 'who are your connections'? To that, he responded, 'I am connected to the Internet, whom do you want me to engage with?' That kind of puts the Internet in perspective.

Ever since its inception, the Internet has been the backbone of our lives. It has been built on the principles of openness, equality, and seamless extensibility. The governance of these principles has been quite well established while there has always been some debate or the other around it—what are the opportunities to improve those governances and how do we build more inclusive development of this—the Internet—across people, industries, communities, and the government at large. It involves a lot of things especially IP addressing, DNS, routing, and technical innovations—these areas it is all there. It has been proven beyond doubt that it is resilient, it is scalable, and there are always some additions that happen. There are things like Intellectual Property, taxation, and things related to national security—there will always be some discussions as these are individual country's choices and individual country's critical infrastructure and they all need to be discussed with a certain amount of practicality and pragmatism. That is important.

We are in a digital era and everything that is happening now is interactive, intuitive, and pretty much instantaneous. The Internet is the backbone on which much of this digital innovation is happening. There is no denying the fact that the Internet will continue to be the backbone on which we will all realize our potential and aspirations. But in doing so, the challenges we are going to be facing, we are facing and will be facing, will be huge, no doubt about it. Online safety is one of the topics that was discussed. Data security, privacy, and national security, all will require proactive collaboration and the Digital India initiative, if I can say that, is truly accelerating the growth of the Indian economy and is the reference point for many countries, both developed and developing, as we see today.

In a recent survey, more than 82% of the people from India who were surveyed, who responded to the survey, said they cannot live without the Internet. And that 82% is the highest among all the people that responded from different countries. The economic growth of the future no doubt will be driven by data. And it will all be driven by embedded intelligence. Most systems of records, most systems of experience and intelligence are likely to be on the cloud. Being the largest democracy in the world, the ever-growing Internet penetration, the density of the mobile network that we have, our commitment to affordable access, one of the fastest-growing digital economies of the world, and our strength as a software powerhouse—India is well positioned and has the responsibility to not only protect the core principles of the Internet but also to shape its future as each country is grappling with challenges of national security, data privacy, data security and so on. More so on the prevention of criminal activities over the Internet. Dealing with challenges will require a balanced approach, a certain degree of caution, yet pragmatism.

There are a few points I would like to state here:

1. Access to the Internet must not be restricted by discriminatory measures either from service providers or otherwise

2. The principle of net neutrality needs to be dealt with in a fair and reasonable manner

3. Data privacy and data protection regulations cannot be a stumbling block for innovation and should take into consideration the advancement that we see in 5G and 6G technologies and the much talked about the convergence of broadband broadcast and everything else

4. The social platforms and applications cannot be unduly influenced by foreign forces that can work against the interest of national security

5. Let us nurture an open R&D environment and knowledge sharing among the multiple stakeholders including policy definitions and the role of artificial intelligence and machine learning and deep learning to accelerate the safety and prevention of criminal activities on the Internet

6. The multi-stakeholder governance, policies enabling access, and evolving standards across the various layers of infrastructure, access logic, and content security should be formulated with the full involvement of stakeholders from the developing countries as the inclusivity and the needs of these countries are substantially different.

To conclude, let us commit ourselves to a multi-stakeholder model of Internet governance and help to preserve the character of the Internet as an engine of innovation, a vehicle for economic growth, and above all to improve the quality of life and public safety and industry at large.

3.2.3. Full text of the address by Mr Paul Mitchell

Hello. I've just returned from the IGF in Addis Ababa. It was an amazing week with over four thousand registrants from 165 countries and over 300 sessions focused on our theme of ‘A Resilient Internet for a Shared Sustainable and Common Future’ and related sub-themes. It is my honor to chair the multi-stakeholder Advisory Group of the IGF which over the past many months has been responsible for curating the program that took place in Addis. I want to recognize the tremendous effort and collaboration that many have put into the process leading up to this year's meeting.

The second Indian Internet Governance Forum featured two High-Level Panels, two Main Sessions, three Fireside Chats, 17 Workshops, and three Flash Talks based around things directly related to the situation in India and delivered in a hybrid model. This is an important meeting for India as one of the 152 National and Regional IGFs. This meeting enabled participants to engage with other stakeholders on critical topics for global Internet governance. I want to express my thanks and appreciation to the organizers who made this Indian IGF meeting possible. These meetings come at a time when increasingly the world is asking hard questions about Internet governance. The UN system as a whole is increasingly leaning into technology equity issues and recognizing the fully intertwined nature of our shared reliance on a resilient Internet. These IGF meetings are more relevant than ever. The level of interest in digital and Internet governance has never been higher and the selected themes for the Addis meeting reflected the goal of aligning the work of the IGF with other UN work on digital policies including the global digital Contracting Summit on the future.

A hallmark of the IGF process is the flexibility to deal with issues of local importance while the themes for the Addis IGF were global. So the structure and approach of the IGF as a whole enable programs like the Indian IGF to focus on issues of the most direct relevance to the local conditions and the Indian IGF topics directly relate to the experience in India. When the Internet Governance Forum was created as an outcome of the World Summit on the Information Society in 2005, it was an innovation. The IGF was an innovation at the time when we were only just beginning to see the potential of the Internet and digital technologies. Rather than offer top-down government-led digital governance treaty, those pioneers adopted the innovation of the multi-stakeholder model and that has led to the vibrant IGF that we see today, that is grown to include 152 national and regional IGFs complete with an abundance of intersessional activities, dynamic coalitions, best practice forums, and policy networks, and attention to the future with youth's engagement and a parliamentary tract, all innovations developed over the past 17 years resulting in the vibrant events that we are experiencing today.

This year's Indian Internet Governance Forum is an important part of the process. The vibrancy was not assured when the IGF began. It took courage to break through established barriers. Innovation takes courage. Innovation breaks through established barriers to change the game bringing old needs and new weapons more efficiently or it creates new needs or wants that we all know we have. For example, home video recorders, the personal computer, and the smartphone were all innovations in their time and were initially viewed with skepticism. Each has created billions of dollars in value for consumers and industry alike. And of course, there's the Internet.

Innovators frequently face tough challenges, ridicule and doubt. For example Galileo was investigated by the Roman Inquisition as he tried to learn to understand our universe. The Royal Society refused to publish Edward Jenner's important paper on his discovery of smallpox. Scientific American dubbed the Wright Brothers the 'Lying Brothers', ridiculing their success in flying. And the Italian minister of Posts and Telecommunications suggested that Marconi visited an insane asylum when he requested research funding to research wireless technologies. They faced obstacles but they each had vision and passion and overcame them. Galileo's invention led us to the Moon. Edward Jenner's innovation eradicated smallpox thus saving millions of people. The Wright brothers' Innovation shrank the world. Marconi's Innovations became the foundations of modern Wireless Communications that we use on the Internet today. Add to this, the confidence of the Internet innovators who work every day around the world to change the world for the better to achieve digital equity, to apply technologies in the service of solving the planet's hardest challenges.

There were and still are many naysayers when it comes to multi-stakeholder governance. There was no guarantee, but adopting a multi-stakeholder model for governance discussions that recognize the respective roles of governments, the private sector, and civil society has allowed for the norms, rules, and decision-making procedures to evolve and enable the tremendous developments that have taken place over the past nearly two decades. Over time, using this governance model together we have achieved at least a rough consensus around the important principles that aim to sustain the global Internet, reinforcing democratic principles, fundamental freedoms and human rights as reflected in the Universal Declaration of Human Rights.

But, while we have made meaningful progress, much remains to be done. The IGF is continuing its own innovation with the high-level panel and engaging with technology and the global digital compact and the Summit of the Future of the world processes. The Indian IGF has the opportunity to make substantive contributions to the ongoing process of Internet governance. As the second Indian governance forum concludes, I hope that you have been inspired and rejuvenated. Going forward, I hope that you are motivated to build upon and defend the legacy of innovation that has been so important today. In closing I want to thank the organizers of the second Indian Internet governance Forum for their passion and courage to innovate this year and make the Indian IGF successful. Thank you very much.

3.2.4. Full text of the address of Shri Alkesh Kumar Sharma

Distinguished delegates, friends. It is always a matter of great privilege and I am delighted to be here in your midst this afternoon but when you ask me to speak on a topic when I have my Honorable Minister sitting here and Doctor Vint there, I think I will not venture into talking about the Internet and Internet governance. As it happens in government, we always have the team which gives us the talking points, and sometimes both of us end up taking the same set of talking points. So that's another reason that I will not venture into talking too much about it. But then yes, I'm indeed happy that the second India Internet Governance Forum is happening in India. It has been an outstanding achievement for all of us as India's progress in the Internet governance space has been depicted in the past as well as in this IIGF and I think this is a forum where we should annually showcase what we have. And it's also a forum where we should learn from each other what is that we have done. As Dr Vint has said, we should look at the Internet, I know we can't live without it, but then it's sometimes difficult to live with it. And I'll give you an example. I had also had the occasion to serve as Private Secretary to a Minister long ago and that is when the mobile had just started in early 2000. Of course, I had a mobile and then I came to the office and suddenly found I had left my mobile at home. And then I was getting so impatient and everybody started asking what happened. I said I left my mobile at home and my Minister is in her constituency. So you know what happens when you have a proactive Minister like what I have now, and a PS like me, who may call you up every half an hour. So that is what the Internet can do to you. But it speaks volumes for our country's interest in Internet governance and the kind of capacity and the complexity and the continued evolution that we are doing and learning through these workshops. Friends, the Internet stakeholder communities are as vibrant and as diverse and we are constantly working together to achieve the core mandate of how we scale up our digitalization in India. The objective, of course, the Honorable Minister will talk about it; it's about how we continue within the principles of open, safe and trusted, and accountable Internet. I think that's something very close to our minister’s heart and our heart and we must take it forward. The government and other agencies of the country have time and again given life to missions that enshrine multi-stakeholderism, accessibility, accountability, security, and innovation as part of its formidable digital economy plans. From our digital India program to our digital literacy initiative, Skill India Mission which Honorable Minister is leading, our indigenous Covid success story, CoWin, which has become a world story, and all technical progress in building this India is well marked and evolving.

The theme of this year's IIGF I think is quite appropriate: ‘Leveraging Techade for Empowering Bharat’. I think this decade we are calling it the Decade of India. I think we are looking at the major initiatives connecting the unconnected ones as we have been talking about. Looking, it has to be the whole of the government approach. We are moving away from a typical enterprise-based solution to an ecosystem, basically an ecosystem-based architecture. That is where we have to move towards building laws that ensure that there is privacy, protection, safety, and security for our citizens and their data. At the same time, we also ensure that the industry and the economy have to grow. We are also looking at how we build a trillion-dollar digital economy in the next four to five years on multiple phase accounts, on electronics hardware, semiconductors, software solutions, and on e-commerce. These multiple things are going together and we have to all work together on this. I think this is a good occasion and an appropriate Forum to discuss these issues.

I also had the opportunity to be part of Dr Vint’s team and I know that Secretary-General in the high-level leadership panel has spoken about how we create these great minds in digital space and how we create the Internet. In fact Dr Vint you will know that we had the minister from Addis Ababa and when we started talking about security and the safety of the Internet, she spoke about the technology itself, the affordability, the availability, the acceptability. She said we are struggling with another side of the digital divide that you are talking about and there are, economies that don't even have access to an affordable Internet. I think we have to see how we bring about this kind of equality, equity, and egalitarian society where the Internet should come and should help each other in solving multiple problems.

We have done India Global Stack and which we have talked about. We have the Agri stack, we have the health stack, UPI has become one of the world's most transacted systems on financial transactions, we have fintech, and we have online gaming platforms. The multiple things you talk about in this community you all have shown that it can be done and it can be done for the good of the community, good of society. We are going to connect the last and the un-connected ones in the next 500 Days through the best Internet connectivity, broadband connectivity; whichever mode we have to go but we are going to touch them in the next 450 days. That is how the government of India is working.

I know you had high-intensity debates and discussions and interactions in the last two days. A couple of the points which I think the Honourable Minister may also speak about. Like right from fostering digital innovation towards economic progress, import of the multilingual Internet I think is very important, and I'm so happy that we have started working on that under the leadership of the Minister. The digital India Bhashini is already moving in that direction and we'll soon come out with some specific solutions for multiple languages, at least to begin with the Indian languages. Enhance inclusivity to overcome the geographic, financial, and gender divide. I spoke about it at India Stack Global. I think we have to reach the unreached through enhanced connectivity and skilling. Skilling is important. It's not only connectivity, it is also digital literacy. People should know how to use the Internet and we must be building trust, resilience, safety, and security. It has to be an open, safe, trusted, and accountable Internet.

Digital safety we have talked about. One of our Bills is already for consultation in the public domain; I am sure you would have given your suggestions on that. We have 17th as the last date and we are keenly

looking at your suggestions. We will be coming out soon with a couple of other initiatives on online gaming of course. I talked about skill and so we will soon be coming out with some specific regulations on that. Honourable Minister will speak about that and the whole idea is that we must create an inclusive and empowered digital economy in India. And that is where we are looking to work too. We are looking forward to your support, guidance, and feedback, whatever which can help us in building a good initiative on digital India. I am sure the deliberations of this event will lead to further discussion and a way forward to make use of the Internet safe, secure and trusted. And it should be for the welfare of the community at large. I would like to congratulate all the hosts of the event who have successfully organized this event and would like to thank each one of you for inviting me. Thank you.

3.2.5. Full text of the address of Dr Vint Cerf

Thank you all very much for letting me join you. Good afternoon or good evening to you. It's quite early morning here in Washington DC, but it's a pleasure to join you in this closing ceremony. It would be very hard to add much to what's already been said. I have to say that I took notes as I listened to the previous speakers. These points that were made were both inspiring and very encouraging. The thing that I find most wonderfully dramatic about the Indian story and the Internet is that not only have you exported information technology but you've also exported leadership. I'm sure many of you are well aware that some of the largest companies in the United States are now led by Indian CEOs. So thank you for that contribution as well.

As many of you know, I've just returned, as has Paul Mitchell, from the IGF, the International IGF in Addis Ababa where we had, as he said, literally hundreds of meetings and thousands of participants. One thing I will emphasize is that the Secretary General of the United Nations participated, not in person but remotely, in part because of his appointment of the leadership panel to work jointly with the MAG[1] in order to inspire and amplify the messages coming out of both the International IGF and all of the regional ones of which you are a party.

One thing I would like to emphasize is that in the opening session of the IGF in Addis Ababa, there were many speeches made that were very similar to the ones that we just heard, but the one call for Action that I tried to make was that it was time to roll up our sleeves and get to work. We've been admiring the many problems that the Internet has introduced as well as its many opportunities, but it's time for us to make it work better. We are seeking a safer and more secure and affordable and sustainable Internet. We want to assure that transporter data flows are open and free because they're fundamental to the utility of the Internet and the computing capabilities that it offers. And finally, I think we all want to be reassured that the freedoms that the Universal Declaration of Human Rights expresses are available in the online world as well as the offline world that we inhabit.

Among the themes that I noted during the IGF meeting in Addis Ababa, accountability and agency and privacy were very very frequently mentioned, and as they have been in today's speeches as well and I

[1] Multistakeholder Advisory Group – MAG. https://www.intgovforum.org/en/content/about-mag

assume over the several days that you've been meeting. Accountability is really important here and it's not only individuals and institutions but countries need to be held accountable for their behaviors on the Internet. And in order to achieve that objective, I hope you'll recognize that international cooperation is required and also a certain measure of the exposure in the following sense. Absolute anonymity is not your friend if you want to hold parties accountable for their behaviour. And so in spite of the fact that pseudonymity and anonymity have value in the Internet environment, it is essential that we be able to penetrate that veil at need and under the right conditions in order to achieve the accountability that I think we all desire.

The leadership panel met several times during the Addis Ababa IGF and its Charter essentially, I will summarize here, first of all it is to amplify the findings of the IGF including those that are rolled up from the National and Regional IGFs as you're just now concluding in India. All of that needs to roll up into the international event and then amplified by the leadership panel. We want to improve the visibility of IGF. Your work over the last several days is vital not only to India but all to the rest of us as well. We want also, quite frankly, to improve the funding of the IGF Secretariat. It's been running on frankly a shoestring and I think that we all need to recognize the value of the Secretariat has to be supported financially as well. And so that's an important focus for the leadership panel. We certainly hope that the panel members who have networks of their own will use those networks to relay and reinforce the messages coming out of the IGFs of today and the future.

I hope many of you will have an opportunity to participate in the IGF in 2023 in Japan and I want to acknowledge Secretary Sharma's contributions already to the leadership panel. He was the first to produce a written contribution and participated remotely in our deliberations and I appreciate that very very much and look forward to further contributions from him and others.

I wanted to do a little bit of history mining for just a second and so you know old folks like me always like to tell anecdotes. And my anecdote which I think is relevant to your deliberations today is that in 1993, one of my colleagues Peter Kirstein who is sort of the father of the Internet in Europe and I came to India to talk to the ERNET leadership. It was struggling to implement networking in India and ERNET was the focus of attention. But it was trying to use the OSI Protocols of the day and was not having a heck of a lot of success at that. And so Peter and I suggested that in 1993 maybe you should try TCP/IP, it seems to be working okay in other parts of the world, maybe it would work in India as well. And I think your deliberations over the past three days have demonstrated that not only has it worked but you have contributed to it, enhanced it, and grown it; and continued to do so in ways that I'm sure many of us won't even imagine until we see the results.

The last point that I want to make is to echo what Mr Subramaniam said. I could not have said anything better than he did. His observations, his points of concern and consideration should be heard more broadly surely by you and me, but also by others, and so I would like to encourage that his speech be made in written form available for others to read and contemplate. Lastly, let me thank you for the opportunity to participate however remotely. I can tell you that I look forward to a return to India whenever it's possible, partly because my wife has fallen in love with all of your arts and furniture and we have an entire

basement full of Indian artefacts and I'm sure she would like to collect more of them and so I look forward to opportunities to return again and to greet many of you face to face. In the meantime as they say I'll see you on the net.

3.2.6. Full text of the address of Hon Minister Shri Rajeev Chandrasekhar

After that introduction, I think one of the important decisions we must take for future IIGF meetings is to keep the introductions briefer and maybe have a lot more time to have a meaningful discussion on the issues. Let me just first of all, thank you Dr Vinton Cerf, of course a big hero and a poster boy for most of us who've been in tech. And a serious motivation or serious reason to come out on a Sunday and be in a program like this is of course his presence. So, thank you for your contribution and thank you for your service for so many decades and thank you for your words here. Mr Subramaniam, my colleague in the ministry and co-traveller in our efforts to create a better digital future Shri Alkesh Sharma, and of course Dilsher who's representing the entrepreneurship and the energy in our digital economy, and ladies and gentlemen, thank you for being here, thank you all for participating and contributing to this three-day deliberation of the IIGF. So first off to Vinton. I just want to say thank you for protecting India and preventing us from being an OSI island in the early 90s. I did not know you were the reason for it, but thank you for that; otherwise we would have been an outlier in the early 90s and not joined the Internet mainstream as we did. May I suggest that being a good husband is always a good thing and maybe encourage you to visit and help your wife's interests in Indian art and Indian handicrafts. It's always a good thing to be a good husband, I speak from experience. While I know you have more experience in this, I certainly think that is good justification for an India visit. Look, I have gone through the topics discussed at the IIGF and I must congratulate the team at NIXI and the leadership for really pulling off an even better second IIGF compared to the first one. It is interesting, it is important because just a few years ago, we weren't at a time in a place where the multi-stakeholderism of the Internet in India was something that we were aspiring, fighting for, requesting and was not such a natural, easily available framework. A lot a lot of people had to struggle in from the outside to be heard and it is good that we have progressed to this place in time where we are naturally meeting and having this institutional framework, institutional consultative framework to shape the future of the Internet both in India and hopefully contribute to how it is shaped elsewhere in the world as well. It is ironic and you know Dr Cerf mentioned about old men coming up with historical nuggets. Let me share one nugget with you which is that it is in the same room in 2012 that the U.N CIRP (United Nations Committee for Internet-Related Policies) effort by the then government they wanted to hand over the regulation and management of the Internet to a United Nations body called the U.N CIRP. I had written a letter to the government, I raised it in Parliament and there was a there was a session like this where a number of Indian diplomats were championing that move along with China were really flayed by the audience and as a consequence in a few weeks after that India withdrew that position from the U.N CIRP. Then of course Prime Minister Narendra Modi ji in 2014 effectively buried it and said that we believe in an absolutely open Internet. We do not believe that the state or the government must come anywhere near it and therein is the origin of the IIGF and the multi-stakeholderism that we see strongly vibrantly visible in India today.

As Secretary Sharma said, our objectives and our goals for the Indian Internet are very clear and consistent. These types of consultations help us take those forward with the necessary guard rails and boundary conditions and enabling environments. Our objectives are as you know - we are the largest connected nation in the world today, we are the largest presence on the global Internet. We are 800 million Indian users and in three years' time with a combination of 5G and the largest rural Broadband connectivity network project, the Bharatnet, we will have over 1.2 to 1.3 billions constituting the single largest presence on the global Internet.

Our presence is not just as consumers and users. We expect our presence to be not on the innovation side of the Internet as well as on the regulatory and policy making side in the future of the Internet. We clearly see India, the Indian users, the Indian innovators being on the big round table as the future of the Internet is being discussed, debated, shaped and built as we move forward. That is our number one goal. The second goal is we have had tremendous success in the last few years around the innovation side of the Internet with the considerable amount of innovation investments that have created a confidence and energy amongst our young Indians of a kind that has never been seen before. We expect to take that further and we expect that a trillion dollar digital economy will be built in the next four to five years, up from the 300 billion plus that we have today, on the back of all the other opportunities that have been created by government policy. The third is the fact that we believe that the Internet has to include, has to be inclusive. When we say 1.2 billion Indians need to come on the Internet, we don't expect the 1.2 billion Indians who don't know English or Hindi to have to learn English in Hindi to use the Internet and to experience the full power and the empowerment that the Internet represents. That is the point that Secretary Alkeshji mentioned, that we expect to use technologies to be able to offer the Internet and the power of the Internet to every Indian regardless of whether he or she and is English fluent or Hindi fluent.

These are the areas that we are focused on, these are clearly policy things that we have laid out and the multi- stakeholder universe will contribute to it. But also at the same time we believe that the Internet which has been a force for good is seen as a force for good, also has increasingly begun to represent risk ,user harm and criminality. Therefore we have clearly laid out that for the Indian the Internet in particular that the openness aspect of the Internet; that we want to keep the Internet open, we don't want pressure powers, commercial or state, to come in there and in any way distort the very fundamental open choice that the consumers have to both access and content and services and products We believe safety and trust are core issues for us to address, especially because 1.2 billion Indians are going to use the Internet. They're going to be the elderly, they're going to be the students, they're going to be children, they're going to be women, they're going to be the rural, they're going to be urban. Therefore, safety and trust online become very important policy duties on the part of the government to deliver to our citizens, and of course accountability. For too long governments of the world and indeed IGF and most forums have lagged behind these big private platforms big tech platforms in terms of the do's and don'ts and the rule making that are required because we treated them for very long as innovators and innovations, rather than deal with them as innovations as well as those innovations potentially being able to cause harm and create other disruptions to society and people. We believe that these are areas that we have to address. We are slowly and systematically building the jurisprudential, legal, policy frameworks in place. The consultation

and the multi-stakeholder ecosystem that has been built around the Internet in India is helping us, build these policies and build these laws through extensive consultation. To give you an example, the recently notified I.T rules, intermediary rules went through almost three and a half months of public consultation that was diverse. There were young, old, students, experts, so-called experts, self-style experts, industry, consumers, all of them played a role, gave their inputs. We took on board as much as we could and created a framework that we believe is durable and can catalyze the growth of the Internet going forward.

Similarly, you will see we have just launched the as the secretary mentioned, the digital personal data protection bill that will cause deep decisive behavioral changes in the way platforms and intermediaries deal with consumer data, deal with consumers per se, and that behavioral change will be caused by the certain section in the bill that talks about punitive consequences of you misbehaving or misusing personal data. It is a consequence of that clause in the bill. You will also see soon see a digital India act which will supersede and replace the IT act and you will in this room I'm sure multi-stakeholder consultation are aware that the IT Act the act that regulates the Internet, that the act of the law that actually forms the very basis of anybody in technology today in in India is a 22 year old act and I think regardless of how old you are in this room you will you will agree that 22 years in the Internet age is too far too long for a law to remain relevant or being relevant. We will certainly soon, with the same type of consultation, the same type of deep involvement by all stakeholders, build the third leg of this global standard cyber law framework that we hope will catalyze the Indian Internet and indeed the Indian Innovation economy.

I'll just say a last point about inclusion and accessibility to the Internet by the global South, the countries that have not been able to step up and create the same sort of pace of digitization of their economies and the Internetization of their economies. The India stack which is now a tremendously powerful offering that sits on the Internet, that goes all the way from Identity authentication to a very diverse and a rich suite of applications. The Honourable Prime Minister during the G20 presidency of India, during this coming year, has declared that he will be open to India offering that platform, offering the India stack to all of those nations in the global South that want to in a sense transform their economies and their governance models and their citizens to the same type of growth and opportunity that we are seeing in India on the back of the part of the Internet.

I will end there and I will just again thank NIXI and the IIGF. The multi-stakeholder architecture or the multi-stakeholder DNA of the Indian Internet is something that has happened after a lot of effort. It is now in the next few years this multi-stakeholder engagement must really go beyond the intellectual academic discussions that are good, no doubt, and are required as well, but to really addressing some of the challenging issues of ensuring that the Internet grows, innovation grows; but also that the Internet and the innovation remain safe and trusted and accountable for all the bill in digital nagriks that in India will be stakeholders of the Internet. I will leave it at that; thank you for your attention; thank you for your patience thank you, Jai Hind.

4. Reports of High-Level Panels

4.1.Leveraging Techade for Empowering Bharat: How do we do it right

This decade has been identified as a period where technology is the key driver for the growth and development of the country. While urban India has benefited from technology, rural India or Bharat is still to reap the benefits. The different stakeholders, governments, businesses, the technical community, and civil society need to work together to achieve this transition.

Hon. Prime Minister has defined this coming decade as India's decade. An explosion is in the offing as far as digitization is concerned which is a part of the government's Digital India Mission. The various functionaries of the government are working hard at realizing the Digital India aspirations. Hon. Minister Shri Vaishnaw had said earlier, "looking back at the past seven years, we are standing at an inflexion point, we are looking at an India Stack which is second to none, at a situation where in many situations, India is leading the curve, the payment ecosystem in the country is second to none, India's pioneering efforts in that direction". The JAM trinity[2] is working together to extend benefits for targeting very specific pockets of the population that need the assistance from the state; while also leveraging innovation and reaching out to pockets of rural India enabling growth. There are very distinct directions that the government's digital drive is taking towards e-health, digital commerce and agritech and their growth can be limited only by one's imagination. The government says that this big sandbox has been provided for various stakeholders, and it is for the stakeholders to drive the journey forward.

All agree that digital connectivity is dominating our life today. After the Covid-19 pandemic, the importance of digital connectivity has increased and has become all pervasive with banking and finance, retail, manufacturing, transportation, health, agriculture, governance, defence, education; all increasingly relying on information and communications technology. India has taken tremendous steps in penetration of digital connectivity through cellular mobile communications and cell phones have become a primary device for connecting to the Internet. In that context, the future generation of mobile communication technology like 5G will play an extremely important role in terms of influencing the quality of life. While there has been a remarkable improvement in areas such as digital payments and online banking and such financial inclusions and financial transactions, with the proliferation of 5G and the various attributes that the technology has, greater benefits are likely to be seen in providing affordable quality healthcare which is also an important aspect in empowering the country. In a country like India with its large population, the scaling up of traditional healthcare systems has its limitations as it requires not only massive investments but is also time consuming. There is, thus, an opportunity to leverage technology to provide state-of-the-art healthcare in the coming years. The other aspect is a wide landscape of several use cases in a variety of sectors. Increasingly economic sovereignty and national sovereignty are now going to be

[2] JAM (short for Jan Dhan-Aadhaar-Mobile) trinity refers to the government of India initiative to link Jan Dhan accounts, mobile numbers and Aadhaar cards of Indians to plug the leakages of government subsidies.

dictated by the ownership of these technologies and hence it will become important that we do not remain an emerging market but also become a major player in terms of developing and providing technologies in these important areas which will become critical in terms of strategic aspects of our country.

In early business models, requirement of data, expensive and rare at that time, meant that the numbers serviced were relatively small and often used text rather than the Internet to deliver a service or a transaction. For example, many early business models took time and effort to scale and had to use a combination of activities. For example, RedBus partnered with pan shops and kiosks to put up computers where people could buy tickets. Over the last decade there has been a huge change not only in the penetration of the Internet with data with smartphones but also the way Internet data is consumed which has opened a phenomenal opportunity to deliver services across socio-economic strata and across regions and giving last mile access to rural India as well. This has thrown up many interesting models such as for healthcare which may be possible with potential large bandwidth made available when 5G is implemented. Today there is a lot of push by innovators to put up specific health related business models around telemedicine and also for impact investors who are partnering with people on the ground whether they are not-for-profit or they are self-help-groups; to provide services to rural India.

However, there is a digital divide in the type of data that is consumed and the type of data that is accessed. E-commerce is largely accessed by urban middle and upper middle class India, though it is percolating down too with good logistics companies coming up with solutions including partnering with post offices to reach out to small villages. Slow breakthroughs in empowering women are also happening with the use of smartphones and apps in the vernacular. These women are able to generate incomes for themselves as well as sell services to users such as by data tagging. A number of large companies need data tagging to be done in various languages. The data sanctity is maintained, the data belongs to the consumer. They get a royalty on the data tagging that they have done. Thus, while huge opportunities exist, there is still the need to work harder at bridging the digital divide and making sure that all types of people across India have the right use of technology.

India's philosophy when it comes to this techade has two core components—the first being digital public infrastructure (projects like Aadhaar, UPI, the India stack) forming a critical component of India's strategy and the second being digital public goods. These various pieces of digital infrastructure have leveraged digital public goods like Free and Open Source Software and Open Standards. Private sector companies including Meta can play an important role as an ally in India's journey in the techade, especially with regard to digital public goods. Meta has built its own cloud infrastructure and has published all the details of the project (Open Compute) which is still available on the Internet and kept updated. Government departments or entrepreneurs in India that want to build cloud infrastructure can look at the Open Compute for ideas and methods. Meta has also a long run in producing open source software and has contributed to more than 300 Open Source projects. One project is 'No Language Left Behind'. It supports 25 Indic languages which, like many others, are low resource languages. There is a paradigm shift in terms of AI development in they are self-supervised AI models and they are also multi-modal and translation can happen directly from voice to voice without necessarily going through intermediate steps like text or translating from the Indic language to English before retranslating into the

second Indic language. The big open source project that this is building towards is called the Universal Speech Translator. Open standards are also critical in the way the metaverse is being built, to avoid being trapped by a metaverse made by one commercial vendor. Open standards are not just inclusive and support diversity but also help with other pieces of regulatory agenda. Companies like meta and any other company that embraces openness can become an ally in India's journey on the Techade.

While healthcare and agritech are the two most important components in going digital in rural areas, first there has to be enabling of infrastructure in terms of providing an all-pervasive digital connectivity at an affordable price which will make these services universal and affordable. The government has taken several steps in providing digital connectivity to gram panchayats and rural areas in the form of BharatNet. Although BharatNet coverage has increased, more needs to be done to get the full impact of providing the last-mile high throughput broadband connectivity which would really enable agritech to the doorstep of the common rural populace.

Statistics indicate that early-stage VCs are talking mostly about rural Bharat. While connectivity has improved, there is still the challenge of usage and of trust. India Stack has been amazing in terms of giving UPI access; however adoption at scale has to still happen and that is largely because of trust. Another big issue is on the local language apps; while there are a lot of tools available, it is still a challenge to get everything in the local language because the base layer is not in the vernacular. Google tools and others translate but do not contextualize. Transliteration is insufficient. It is not just technology, but the right technology that is needed for any particular segment. It takes longer to get the same kind of output from Bharat than from a more digitally savvy urban consumer which means that investors need to be more patient. Post-Covid, there has been an increased acceptance of digital learning in education. With 5G which will allow images and videos, it can be upscaled to train medical workers especially in Bharat. If the government enables more research grants and supports businesses which are looking at Bharat, and also promotes research into technology, more particularly local languages and contextual technologies which will enable this, investors would be excited to focus more on Bharat in their portfolios.

Across the world and also clarified by the Puttaswamy judgment[3] by the Indian Supreme Court, it is clear that privacy and therefore data protection is a globally accepted human right. The harms that emerge from privacy infringement can be incredibly severe, ranging from threat to life, to bodily harm and significant economic harms and cannot be ignored. However, the right of privacy, like many other rights, is interdependent and interconnected to other rights but also in conflict with other rights, such as right to free speech, right to transparency and rights of the disabled. In Indian law, a beautiful harmonization of these conflicts can be seen. For e.g. in the RTI Act, privacy is one of the twelve exceptions. Thus, there is

[3] Justice K.S. Puttaswamy (Retd.) & Anr. vs. Union of India & Ors. 2017 – India https://privacylibrary.ccgnlud.org/case/justice-ks-puttaswamy-ors-vs-union-of-india-ors#:~:text=The%20nine%20Judge%20Bench%20in,of%20dignity%2C%20autonomy%20and%20liberty

a right to transparency, but privacy is an exception to the right to transparency. The governance imperative and the human rights imperative are balanced by policy makers.

There are ways to make sure that regulations remain technologically neutral and future proof. These are (1) to have expansive definitions, (2) to have principle based definitions and (3) to have co-regulation. Capacity building, is required not only for the users and the people implementing technology but also for those designing technology. Cyberattacks are affecting those less well-informed. Developing applications and interfaces which are more user-friendly and easily accessible is essential because of the increasing complexity of devices and the plethora of services now available digitally. A wider skill building programme across the population, not just rural but urban India too, is required. These are specific challenges in India because not only do people speak different languages but also use the devices differently.

4.2. India's Priorities for the next five years

India has set several ambitious goals for the next few years. India aims to have a trillion dollar economy by 2025 while ensuring digital inclusion and empowerment of all citizens. Subsequently India aims to become the largest economy and play a key role in global decision making processes.

Four pillars may be recognized while identifying priorities for the future. The first is cybersecurity which should be a national and economic security imperative with the development of people-centric cyber policy. Modernizing cyber security defences and protecting government as well as critical infrastructure is essential. Bold changes and significant investments to protect vital institutions that underpin Indian life must be undertaken. This would include advancing things like zero trust architecture, accelerating the movement to secure cloud services and centralizing and streamlining access to data to drive analytics for identifying and managing those risks The second pillar is to move technology policy beyond content moderation. If the government is actually going to intervene to make technology policy that protects people, then people need to be put in the centre. Start by asking what people need, not what platforms are providing (or not providing). The third pillar is not to get into the business of monetizing behaviour but to get into the business of selling the product which is the Indian mind. This is essential for thinking in terms of an economy moving from extracting data from people and monetizing it as if to become a platform economy itself. While there may be some truth in it, there's a lot of trouble in collecting data and then just monetizing it, and that is not the best way forward. The fourth pillar is the importance of climbing the value chain. In the 21st century the nation with the most data scientists, the people who are trained to understand how to actually use these technologies as well as data for the benefit of humanity, are the ones who are going to win over everybody. Today, everyone is thinking about AI, which is basically thinking in terms of data scientists and climbing the value chain. Considering the size of India, climbing the value chain can also make us dominant in the world. This was the thought that established IITs in the early years of our independence that has given the ability to lead in Global Tech. Hence, for climbing this value chain, it is necessary to shape curriculum, schooling, and pathways of human development so that there is a return to the historic position where technology was used to better ordinary

people's lives; and people are kept at the centre of data protection laws and regulations. This will allow the common man to go about their business without being threatened in any way.

India is going towards digital public infrastructure as an efficient way to deliver services. It is highly dependent on telecom and the Internet infrastructure. Keeping the Internet safe is going to take a lot of effort and needs accountability. Unlike in the case of telecom partnerships where there are well defined protocols, there is no traceability and accountability between countries regarding the internet, especially when attacks are made or illegal content uploaded, and hence nothing can be legally enforced between countries yet. With the steady merger between telecom and the Internet infrastructure, telecom and Internet governance have to be looked at together. There is a need to have a bigger picture and multi-stakeholder accountability. This calls for leveraging our intellectual capability and taking a look at the quality of our education systems.

With great technologies come great challenges in multiple dimensions. Safety and security as well as regulation have to be done in such a way that it does not stifle innovation but protects people. A good example is the regulations that India came up with for drone technology which gave a fillip to the entire drone industry. Consequently, there has been an explosion of drone-related innovation. The question is also about innovation for whom. Is it for the sake of innovation or is it for the people of India? There could be ways to optimally utilize AI, for example, to analyze direct benefit transfer data to identify those who actually need it.

The other concern is about new technologies such as quantum computing and metaverse that are coming in. Are they going to be harmful or can they be harnessed to be transformational? For example, students may be able to sit in the best of classrooms and get the best of education thanks to the metaverse. But if they don't have the right access devices, they will be deprived. Hence it is necessary to have tools to ensure technology works for the entire society and not just for the few who have access to it. Technological sovereignty in all aspects is therefore required.

India's priority as of now includes two levers. The first is manufacturing and the hopes of present and future India hinge on this; future manufacturing also includes those around the environment and clean energy. The second is the Internet-based services and products especially after the 5G speed of connectivity has improved with low latency. Some of these products were imagined earlier but the technology to deliver them was not available. But there are many that are not even imagined. The enabling factor would be appropriate regulation. While India has been defensive in the past, it is perhaps time to be bold and take some risks.

The question then is of trust. Rather than trust any one person, the way forward would be to have a distributed kind of trust through a multi-stakeholder approach which would not give too much power in one hand and would also provide collective wisdom. India’s policy decisions are immediately discussed worldwide as it is the largest free market economy. The question is, therefore, who is going to decide the interests of India. Another question is whether India is being forced to look at the standards adopted by a developed economy when it is not yet a developed economy. For this, the best way forward is for Indians

to participate in standards-making bodies to ensure that they have a say. It is not correct to say that India is adopting a western lens for privacy; rather India is adopting our constitutional lens. It is not correct to say Indians don't require privacy or respect privacy; rather, our standards have to be higher. Privacy needs to be contextualized in the framework.

5. Thematic Sessions

5.1.Fostering Digital Innovation towards economic progress

5.1.1. Introduction

The past decade has witnessed unprecedented innovation in the technology landscape in India. With over 60,000 start-ups and 100 unicorns worth nearly US$300 billion, India is the third largest ecosystem for startups globally, and tech-innovation remains one of the cornerstones of India's economic ambitions. As technology becomes ubiquitous, the coming decade is likely to witness mainstreaming of tech driven progress which will be the cornerstone of India's rise towards a five trillion dollar economy.

This sub theme focused on the governance facets of the new and emerging technology including human-centred artificial intelligence, decentralized ledgers, an enabling regulatory and policy ecosystem, and governance of the use of technology in various allied sectors such as agriculture, health, education, commerce and finance. In addition to emerging tech, the disruption of traditional business models with the advent of the 'platform economy', its contribution to the digital economy, and potential pitfalls were explored as were how regulations and policies should be streamlined to ensure startups flourish and remain in India.

Topics relevant to this sub-theme were discussed in two workshops, and two fireside chats and two flash talks over the three days. The following are summaries of the sessions for this sub-theme.

5.1.2. Session Reports

DAY 1

Feminist Perspective on the evolution of responsible AI in India (WK1)

Considering the ability of AI technology to transform economies, the AI revolution holds unparalleled significance for a developing country like India, which has the second-largest population in the world. While recognizing this technology's tremendous potential, it is also important to understand and question the processes involved in the making and functioning of AI. The disproportionately dominant role played by men in the development of this technology leads to algorithms with negligible representation from the other groups. The coded biases then act as hurdles in its responsible and inclusive development and deployment and affect their access to jobs and other empowerment opportunities.

Gender balance is a critical issue, and women face a lot of discrimination, especially in South Asian countries like India; and AI has the potential to widen that gap. In addition, the existing societal perspective of women and their traditional roles has also contributed to widening the gender gaps and pushed companies to come up with bots with female-like features to increase the bot's acceptability as female AI is considered to be more humane. An example is the Lensa AI App. Women's experiences on the app have led to the conclusion that the app has been created considering men's experiences.

At the global level, AI strategies, regulations and even hard laws are being developed, including inculcating the concept of responsible AI. While AI is in the development stage in India, strategies, discussion papers and principles are being developed to understand the technology and its regulation.

The main challenges are that biases in algorithms arise primarily due to the existing societal biases and barriers, existing biases in the datasets and the set of existing biases in each data set. There is an increasing responsibility on the private sector to ensure that human rights, fairness, accountability, etc., get integrated into our algorithms to prevent bias or de-bias of the data.

Hence, for developing responsible AI, free from biases, a cautious approach is required while designing and developing the technology. These will include developing fairness metrics for creating responsible AI, which will require understanding the users and the community and the end goal of the product being developed. Developers would also need to primarily understand at what point the violation or bias took place and at what point the algorithm made mistakes.

It would require bringing people from all backgrounds and communities to contribute to the process of designing and holding proper inclusive stakeholder engagements. Women's participation in stakeholder engagement should be enhanced by encouraging their contribution to the various levels and sectors.

Policy Roadmap for the Development of Metaverse and Web 3.0 (WK3)

The world is moving towards the next generation of the Internet, also popularly known as Web 3.0. It includes the potential application of evolving technologies such as metaverse, blockchain and artificial intelligence, amongst others. Given the deepening Internet penetration in India and the thriving tech and entrepreneurship sector, the country has the potential to become the world leader in Web 3.0. However, while this technology has immense potential for the digital economy, we cannot negate the safety and privacy concerns that are likely to amplify with its growth. In order to develop a regulation that is both effective and sustainable for the growth of the metaverse, it is essential to understand the nuances of this technology, the magnitude of the safety concerns and also the immense potential of growth and innovation for Indian companies which makes it imperative that our laws and policies to govern this space are both effective and progressive.

Metaverse is a convergence of many emerging technologies such as AI, IoT, AR, VR, XR, quantum computing, etc.—each one with its distinct regulatory challenges and consequently a complex area of regulation with different touch points. Metaverse means different things to different people. With the rise of the metaverse, the Internet is expected to be a lot more personal and immersive and is expected to transform life. Social interaction is foremost and with Meta the experience is more intense. It is expected that the creator’s community will see large-scale growth. Industrial Metaverse like Industrial IoT can be defined after policy is charted.

Metaverse will provide an opportunity to users to operate simultaneously in both physical and virtual environments. There are three distinct versions of the metaverse – creator’s metaverse, community metaverse, and industrial metaverse, which will again have different implications on regulations. Some important use cases in the metaverse include applications in education, skilling and healthcare.

There are many regulatory challenges that are likely to come up. From an economic perspective, it could be said that labour, as a factor of production, plays a major role in the metaverse as everything is created by machines or humans. The metaverse challenges conventional economic theories of factors of production, which will have implications on regulatory aspects.

The metaverse will witness an interplay of rights and responsibilities. In Web 2.0, platform accountability was witnessed. The move now is towards user accountability, which will be difficult to fix and ascertain. Operationalization of the metaverse should ideally be carried out in a decentralized and distributed fashion, which in turn would call for new and untested regulatory mechanisms that focus on user accountability. Most challenging would be defining ownership and regulation of intellectual property and navigating co-created products and those with little differences. This is expected to result in a proliferation of product marks.

The way forward therefore would be interoperability across different metaverses operationalised through global standards. Privacy and security would have to be engineered into the design of the metaverse. Safety by design will be critical. Meta's use of personal boundaries and code of conduct for virtual experiences are steps in the right direction.

DAY 2

Role of Startups in Digital Transformation (FC 2)

India is the third largest ecosystem in the world for Startups. This has been enabled by the government's active role in propagating an environment for Startups. The role of investor's confidence, technical advancements and promising policies are recognized by both. There is need for more collaboration with the Government and the government must utilize the mountain of data for innovation in the IT Sector. For the non-IT Segment, ONDC is there in the digital public goods sphere and an improvement in exposure for small Startups is needed. Data security, privacy and awareness aspects should be considered from the get-go, and a Cyber Security Startup Committee could help here. While there are a number of Startups that are working to bring innovations to rural India, more work needs to be done. Startups are expected to contribute about 8-10 Trillion Dollars by 2047 and more inclusion of women is called for. Startups should begin to look at core fundamental sectors and start from ground level solutions, sustainability solutions etc., and build businesses to become job creators. For early stage Startups, focus should be on shortening the learning curve and utilizing solutions that already exist. For some Startups involved in building products, early fundraising might be necessary even before making profits. The primary focus of any Startup should be an active customer base and cooperation amongst Startups is required for creating impact.

Central Bank Digital Currencies and Financial Inclusion: A Systematic Review (Flash Talk 1)

Interest in Central Bank Digital Currencies (CBDCs) has increased in recent years. While the reasons given for its adoption are multifold, one key rationale advocated by proponents is its ability to facilitate financial inclusion. Outcomes from a systematic literature review on the subject are highlighted.

CBDC is a digital fiat currency issued by the Central Bank, which is RBI in India's case. There is significant interest worldwide in CBDCs. The reasons are increasing digitization, diminishing cash demand, Covid-19, and the need for financial inclusion.

The link between CBDCs and their efficacy for financial inclusion is under-researched. There are several benefits of CBDCs: Immutable, without the need for a bank account, scalable and cost-effective. It can provide cash-like safety and anonymity. It can also mitigate criminal activities and can be beneficial to the health of the monetary policy of a country.

However, CBDCs benefits are not absolute. CBDCs designed for financial inclusion may not be as efficient for other purposes. The success rate of CBDCs can be highly variable. Also, CBDCs should complement cash and not displace it.

CBDC can be classified on multiple aspects such as nature of identification, application, autonomy, and extent of intermediation. The Success of CBDCs depends on several factors and there are asymmetric effects across income, gender, and age. There is an inherent conflict between privacy and manageability. While privacy is desirable, absolute privacy may increase money laundering. For instance, permissionless crypto is reportedly being used for money laundering.

CBDCs are important for countries and should co-exist with cash and other digital payment systems for enhanced payment system resilience. Token-based, indirect, permissioned, retail CBDCs are considered appropriate for most contexts. However, we shouldn't indulge in technological solutionism.

Software Patents in India (Flash Talk 3)

Indian patent law, unlike law in countries like the US, Australia and Singapore, specifically excludes business methods, computer programmes *per se*, mathematical methods and algorithms from patentable subject matter. Notwithstanding this statutory position, it is seen that a number of patents have been granted in the area of software and business methods in India.

Patenting of software is problematic. Many elements on a typical website are often patented. In pharma, while patenting a molecule, the boundaries are very clear. In software, these boundaries are not clear. In a rapidly evolving domain such as software, a 20-year protection would be an issue.

The direct cost of patent litigation is about USD 29 Billion. Much of this litigation is carried out by patent trolls who acquire patents just for litigation. Open Source communities have been successful in ensuring innovation is not hampered by software patents. In India, Section 3(k) of the Patents Acts completely excluded computer programs or algorithms. Although the act expressly forbids patents for software, the

several versions of guidelines have created some amount of confusion.

Despite this unambiguous position under the law, there have been many cases of patents for software being granted in India by clever drafting. These irregular patents have been annually in the range of 263-1192 during 2014-15 to 2022. These are against the Law and the Parliament. Unless this is prevented, it may result in software monopolies and problems for startups in India.

DAY 3

Future of Interactive Streaming Commerce (FC 3A)

Three broad mega trends are seen in India today. One is the global mega-offshoring, digitalisation and sustainability. These are setting the scene for economic growth. This new era is expected to bring significant changes and in addition to economic betterment, people are expected to look at entertainment. Gaming is one such important activity and many startups are engaged in this.

Physical limitation of a lot of people in the country to contribute actively to growth has been made possible through digital inclusion. Technology can help in getting more people in the skill task force by contributing their skill and bringing them on to a platform where it is meaningful and helps the country grow. In 2017, large numbers of people from tier 2, tier 3 and tier 4 cities were able to connect to the digital grid using their smartphones thanks to the Reliance Jio network. It was incorrect to expect this new audience to adopt the English language to communicate; rather products which are culturally relevant, which preserve languages and encourage consumption of languages which are largely used, should be brought out. WinZo, for example, was built to address an underserved audience and the starting point was to engage the vernacular market. Multiple languages were introduced by building a tech stack and penetrating very small cities, reaching out to home makers and school teachers to do translation through a smartphone app rather than having in-house translators. This model can enable entry into any country using any language.

In gaming, there is interactive entertainment as a category and builds on real-time technology and some really difficult tech problems are getting solved in this manner. There needs to be clarity between what is gambling and the games that are built on entertainment and social interactions. Today, animation, real-time game technology, gaming content and various computer services that can be exported falls in the spectrum of non-traditional ways of exports and should be recognised as such. With regard to the gaming industry, it is believed that regulatory issues (18-28% GST) can harm small developers as they cannot sustain capital needs; this may lead to forced imports.

5.2.Public Digital Platforms

5.2.1. Introduction

Public Digital platforms (PDPs) enable delivery of critical services such as payments, digital identity, and data at scale, through a collaboration between various actors in the digital economy and in the preferred local language. India's Aadhaar and Unified Payments Interface (UPI)-led financial inclusion is a prominent example of PDPs generating innovation in both the public and private sector. PDPs help to streamline the welfare delivery mechanism and ensure transparency and good governance. PDPs are often built on open-source software, with open application programming interfaces (APIs), open data, and open standards. This allows the 'building blocks' of PDPs to be accessible, promotes transparency, and enables interoperability in digital public infrastructure and services. Despite the advantages, development and large scale deployment of PDPs pose a variety of challenges including privacy and security risks, exacerbation of existing inequities due to access, adoption, and usage constraints and capacity gaps.

There were two workshops and two fireside chats that explored topics under this sub-theme. Summaries from the discussions are provided below.

5.2.2. Session Reports

DAY 1

India to the World: Leading the Agenda on Inclusion through Public Digital Platforms (WK2)

India has emerged as a leader in today's public digital platform movement – with a focus on open source and interoperable innovations alongside efforts to ensure meaningful access to these platforms. Given progress realized domestically, and international interests today, India is focused on leveraging its homegrown digital solutions to support other countries while also deepening its diplomatic engagements. As India takes the helm of the G20 in 2023, it is uniquely positioned to bring the public digital platform discourse into the broader global agenda.

The term 'public goods' comes from economics and has a very deep meaning there. The discourse around public digital goods and infrastructures (with regard to the digital sphere) borrows from some of those senses. It tries to bring about the way these goods and infrastructures are designed, implemented and governed. However, it is necessary to be cautious of the use of the term. The notion of public has a lot to do with being available for public benefit, bringing in notions of who finances it (states, philanthropies) which brings in inclusivity, universality etc. The core of digital public goods is a technological interface or system(s). Goods can be seen as building blocks to infrastructures, goods being the component elements such as exchanges, registries, databases etc. Infrastructure can be understood as a sizable instantiation of these goods. Aadhaar is an example of a public digital infrastructure. Infrastructures are typically aggregated in an institution and governance goes beyond who uses it including questions of design and of inclusion because they're anchored in institutions and legislative frameworks. India is unique as the only country with massive public digital platforms which are being deployed for public service delivery. In the case of E-gov, there was a technology shift, a policy shift and institutionalization

as well as an actor shift enabling improved citizen access to services through technology and DPG. While private digital platforms are about scale, public digital platforms are about empowerment and dignity.

In the case of finance, though UPI is available, it is Google Pay and PhonePe which are the largest players. For inclusivity, the only way is to remove entry barriers. ONDC is a digital public infrastructure and a network that has abstracted the way the different components of an e-commerce supply chain communicate with each other. Lowering the entry barrier to connect into the network allows more people to provide interfaces and gateways to connect to and also solves for the entire range of scales of business and also reduces market power asymmetry that exists between e-commerce platforms and vendors.

Increased conversations are taking place around the benefits of leveraging DPIs and DPGs, interoperability, standards, adoption of visual building blocks etc for last mile service delivery especially in the health sector. There are procurement challenges. Though by definition a lot of the principles for DPGs and DPIs talk about moving away from vendor lock-ins, the procurement cycle for most LMIC requires three bidders, and a consequent requirement of local partners for the deployment, configuration and customization of the platform in line with the needs of the users for that particular context. The result is a reliance on donor funds and inability to transfer the DPI/DPG to the government for ownership and taking it forward. Another challenge is the development of several applications in siloes rather than a more intentional way of thinking through several common use cases.

The prime challenges are time to implement along with patient risk capital. It has to be designed for scale and the design should be focused on the federated structure of the country along with privacy and inclusiveness. The promoting challenge includes the need to collaborate with different actors for which market capacity is needed with the documentation for the DPGs. Implementation challenges include capacity of the state and knowledge at the local level. Other issues relate to notions of transparency and accountability which are embedded in the governance layer that sits alongside the core technology.

An option to avoid vendor lock-in is to engage with academics and communities of coders to build capacity to allow for transference of skills involved in addition to deployment. There are also issues such as openness of the technology embodying the principles of transparency and accountability. Creating a layer of governance which only operates to the degree required and includes the people who are actually the part of that ecosystem as well as certification and audits are required for betterment of the complete ecosystem as are behavioural changes through nudges and soft restrictions.

A Stakeholder Approach to Envisioning Citizen-Centric ODEs (WK4)

Digital infrastructure for the delivery of various essential government services is quickly becoming a reality. The idea of National Open Digital Ecosystems (ODEs) is surfacing across several states and specific domains (social protection, agriculture, health) in the form of digital platforms - powered by citizen registries and capable of connecting several stakeholders. Such ecosystems create value and opportunity for not just its users (citizens) and government service providers (administrators), but also for a spectrum of third party innovators to build on top of the digital infrastructure to create new services, or improve existing ones.

Social Protection Open Digital Ecosystems (SP-ODEs) are social protection tech platforms that deliver welfare benefits to the citizens using interoperable digital infrastructure and offer unified and unfragmented front-end and back-end processes, generate and utilize real time information and provide opportunities for innovation. ODEs can build on India's existing digital public infrastructure such as Aadhaar. Six processes supported by SP-ODEs include identification and enrolment, coordination and orchestration, payments, delivery of benefits and services, product provisioning and grievance redressal. Seven core stakeholders that can be identified in SP-ODE are primary beneficiaries, state authorities (regulators), financial institutions, technical developers, service providers, last mile intermediaries and the knowledge builders. Such systems have to be designed cautiously, as otherwise they have potential to be misused. Key design properties have been identified and include ensuring stakeholders build universally inclusive systems, use responsible data management measures, create efficiencies of time and cost for citizens, and provide grievance redressal systems.

Elements of inclusivity, responsibility, efficiency and accountability and the potential for innovation in SP-ODEs should be seen as drivers for innovation through a layered approach involving policy design, program design and system design. Incentivization and feedback mechanism should be there for private sector involvement with a proper harms and mitigation response such as high penalties for default. In the case of last-mile intermediaries, both formal and less-formal intermediaries should be accommodated while developing ODEs.

India's success in Digital Payments (FC 1B)

A silent revolution in a vastly diverse country used to only cash at the toll booths and tax counters has been FASTag on the highways. The Indian context warranted a low-cost solution that was simple to implement. A key reason for success was commitment to the cause and the persistent support extended by the government. Challenges with the implementation of FASTag include leakages and lack of proper means to monitor and nab defaulters or evaders. Efforts to improve user convenience by developing newer form factors such as key chains and mobile stickers are being planned.

The government is working towards the implementation of National Common Mobility Card (NCMC) using the RuPay infrastructure that would unify transactions across diverse kinds of banks subscribed to by travellers, services vendors and toll booths. Following the success story of Buy Now, Pay Later

(BNPL) schemes, the next step is to democratize credit as it is observed that a large number of debit card customers would like to avail credits up to small limits. To address the need for multilingual interfaces, call centres and chatbots are planned. For difficult to access and poorly connected locations, facilities for offline payment using cards where the terminal and the card could negotiate without the need of the bank to authorize the transaction are being developed.

DAY 3

Digital Platform Infrastructure (FC 3B)

India is ahead of many other nations in being able to create digital platform infrastructure at our population scale and be able to sustain and provide that practically glitch-free. Digital public infrastructures are digital solutions that have been implemented at a population scale for access to various citizen services. The Aadhaar project was conceptualized using biometrics to create identities and has helped in financial inclusion as well as getting access to basic services such as rations or social welfare benefits. Another example is digilocker for verification of credentials.

The United Nations defines digital public goods in their Digital Public Goods Alliance approach paper as any digital solution implemented at a population scale based on Open Standards and is interoperable. In the case of CoWin, the challenge was not only one of scale but also one of administration (to ensure vaccination of a billion plus), of multiple vaccines, different time intervals, doses and so on. This platform is now emerging as a universal vaccination platform where other vaccines are being added and can be tracked. There are examples from other countries such as Estonia and Ukraine. Sharing of digital public experiences in the global community also help in making solutions that are interoperable and adaptable across the world. ONDC is one such that is expected to transform digital commerce and democratize the way e-commerce is done on the Internet.

The G20 digital economy working group’s aim is to bring together all stakeholders to come up with a framework to share experiences with other countries working on the same to ensure that adopting and implementation becomes easier. Launch of India Stack dot global by the Prime Minister has made well known solutions such as aadhaar, UPI, Digilocker as well as others such as the e-sanjeevani and the deeksha learning platform are made available. A toolkit has been made available so that if any other country wants to replicate this project, then a dialogue can be begun for replicating such projects.

As a follow-up of the Indiastack dot global event, India's technology exchange was organised which brought in experts from 60 countries who saw how the projects were implemented and subsequently, the project teams have been approached by various other countries to replicate these projects. It is felt that a toolkit or procurement guidelines need to be drafted to help countries progress. For this, UN's digital public goods Alliance and the World Bank have been showing interest to fast forward this process.

Fintech has been a big beneficiary as they have been able to bring down the cost of acquiring customers by using the KYC modules of aadhaar or digilocker since these API have been made available thus

helping them expand their business. The next such growth can be expected in the health sector going by the way Ayushman Bharat is being built up. Several unicorns can be expected because the basic building blocks of the health registry, the hospital facilities, the protocols, the standards and the tools are being made available as a Sandbox for all entrepreneurs in startup mode to build applications on top so the citizens will have a choice. Similarly, setting up of consent architecture will help in offering public services on a proactive basis as well as credential verification, among other opportunities.

5.3.Reaching the Unreached

5.3.1. Introduction

Although internet penetration has increased in India over the years, there still exist many areas in India which are unreached and untapped. The surge in internet and smartphone usage has fuelled most of the socio-economic growth and development in urban areas, but many rural and remote areas are still unreached. The Digital India campaign has considerably expanded the number of internet connections. India today has 807 million Broadband connections (as per TRAI Monthly subscription data of July 2022 and DoT Monthly Report for July 2022). Approximately 500 million are unique users, as many in the urban areas have access to more than one broadband subscription /connection. Therefore in a country with a 1.35 billion population, almost two thirds of the country is yet to have access to an affordable broadband connection. Also ubiquitous broadband connectivity remains a challenge. Hence, there is a huge potential to provide affordable and ubiquitous broadband connectivity to a large section of the population. A number of alternate technologies (to Mobile Broadband Technologies viz. 4G & 5G) are required to be used to bridge the gap. Technologies such as Public Wifi, Satellite Communications, Free Space Optics, Wireless Fiber (E&V bands) can help fulfill that need. There is also a need to bridge the digital, gender, accessibility and language divides. The Internet must be inclusive for all, encouraging diversity, affordability, availability in local languages, and all websites and browsers should be universally accessible.

In addition to a Main Panel discussion on connecting the unconnected, there were five workshops and a special panel discussion under this theme that looked at the status in the south Asian region. Discussions covered topics such as ensuring accessibility, a focus on last mile connectivity and how to ensure all websites and services are universally accessible in people's preferred language.

5.3.2. Session Reports

DAY 2

Digital Bharat: Connecting the unconnected (MP 1)

There are six billion Internet connections today, but it means that 2 million are unconnected. If it were a world without barriers, this would be a fantastic achievement but when you look at the different countries, the digital divide becomes obvious. There have been several policy attempts to bridge this digital divide and while some have been successful, others have not. The private sector has a big role to play in bridging

this digital divide while the government plays an enabling role. Digital is the new form of infrastructure and data is the new oil. On the Internet, privacy issues have been a major concern.

The three A's of the Internet are accessibility, availability and affordability and it is necessary to focus on quality and not just quantity. Quality includes quality of call as well as quality in terms of data collected. It is important to know whether people have the Internet connections and also what they are doing with the connections. Looking at the mobile usage in Asia among persons with disabilities, it was found that less than half were using mobile phones, and few had smartphones. Even among those that had, they were not turning on the accessibility features because they either did not know about them or did not know how to use them. Hence, it is important to increase awareness and build capacity and also to ensure that standards on accessibility are implemented. It is necessary to think inclusive right from the start rather than applying fixes midway.

Meta has been producing open source toolkits such as React Native that can overcome compliance to standards by building accessibility into the infrastructure. Questions such as worrying about privacy protection when there is no or insufficient access to the network are false dichotomies, but there are no simple solutions and an optimisation approach to solutions is needed.

The digital divide is changing. Post-covid, connectivity issues have improved. Connectivity can be looked at as 'human to mobile to network to another mobile/ web/ App'. The Human-Mobile interface tends to get ignored. There are several nuances such as disability, language and script, data protection, identity etc. These several problems cannot be solved by one single person or entity and the multi-stakeholder approach is the only way.

Over time, it is necessary for everyone to be connected and it is not just access to information but also for business, innovative ideas etc. Government can play the role of enabler and for enforcement but it is necessary to engage private industry. The challenge is how to motivate industry to invest in rural areas when urban returns are much higher. Building connectivity in the rural areas can be by using USO funds or through the different mechanisms of the CSR funds. Efforts will also need to go into maintaining the infrastructure. India being geographically and demographically very diverse, disasters can also impact connectivity. A hybrid model is a way forward using for example, fibre, Wi-Fi and satellite. Fixed terminals in areas prone to disasters may be considered.

Enabling policy, importance of standards development and participation of Indians in the global standards, institutions leading processes of change rather than individuals and development of Universal Acceptance policy through a multi-stakeholder approach are some ways forward for ensuring Digital Bharat. Change needs to be incentivised, and it is necessary to leverage intellectual strength and the strength of the global market.

With respect to showcasing achievements in G-20, some key trends include the many reforms for spreading digital communication and connectivity such as space, satellite etc., rating of buildings for digital connectivity, the data protection bill, activities such as Digital India and Make in India that have

resulted in a number of activities such as startups sending rockets into space and drone surveillance in remote areas and the increased government-industry collaboration.

Future of Digital Lending in India: Next step Forward to Ease the Access to Credit (WK 5)

Access to credit has been one of the major issues for the MSMEs. Lack of working capital and accessing loans from traditional sources have proven difficult for them. Over the course of the last few years, digital lending has picked up immense pace in the sector. Digital lending firms are capitalizing on the need to fill the current gaps created by the traditional lending firms and are reassessing the way credit risk is being looked at. New age digital lending fintech companies have focused on reducing paperwork, turnaround time and overall interest rates.

From the viewpoint of opportunities, digital lending has created greater accessibility in terms of getting easier access to credits for MSMEs and other consumers. The lending firms have focused on reducing paperwork, turnaround time and overall interest rates to get an advantage over traditional lending options. The cost of delivering small amounts of loans for banks is more than the loan amount itself. Digital Lending has overcome these challenges and has made small value loans on a regular basis possible. RBI is open to innovations and promotes startups to come up with innovative products but it needs to be in a streamlined manner where regulated entities take ownership of licensed activities provided by them.

The role of the regulator is seen in the following manner. RBI guidelines on Digital Lending are a step in the right direction. They put accountability while keeping in mind the protection of the consumers. Bad actors in the digital lending space have been a major impediment in the growth of this sector and there is a need to take stringent action against them. There is also a need for greater clarity in guidelines on digital lending especially in the light of multiple regulations leading to multiple interpretations. Providing FAQs in this regard would be very helpful for the industry.

To move forward, it is seen that greater capacity building for law enforcement agencies is extremely important to deal with cases of financial fraud especially in tier 2 and 3 cities of India. A multistakeholder approach with inputs from diverse range of stakeholders is needed. It is also important to widen the stakeholder group to involve consumer bodies and other relevant stakeholders.

My Accessible Content: Skills for a Digital World (WK 7)

India has 340+ million monthly active users across various social media platforms like Facebook, WhatsApp etc. Social media is a preferred medium to communicate from being used by governments to conduct public relations to being used by people for communicating socially. The ability to navigate the digital world is hence a necessary skill and any communication cannot afford to ignore the needs of persons with disabilities. Accessibility enables this.

FICCI's 2022 study notes that 80% of its participants with disabilities use social media for education and training. Despite the high percentage of the group using social media, there is potential to reach many more people in India who are still not able to use social media for their education and communication because of lack of awareness and knowledge about accessibility features and inaccessible content over the platforms.

Experience of visually challenged persons shows that, unlike the one way traditional media, there was opportunity to interact with people across the world, make new friends and communicate with the people with whom they wanted to communicate. For example, social media can be used for disseminating information about life with blindness, use stories from work to sensitize people and for meaningful exchanges through conversations on various topics which were otherwise not possible.

Social media is a great platform to advocate, by directly connecting with people who can make the difference. In another example, difficulty in using Whatsapp was shared in LinkedIn and FaceBook and tagging the appropriate people (who tagged other relevant people) helped in problem solving. Similarly, challenges in accessing banking mobile apps were also solved by interventions through Social Media. The power of social media enables direct connection with the right person in the time of need.

Meta has been constantly working to improve the accessibility of products and diversity and inclusion in the workforce. Some of the cutting edge technology features of Meta making the content accessible for PWD are automated Captioning, AI powered description technology, Automatic Alt Text and MetaXR.

Saksham in collaboration with Meta has initiated a campaign to create awareness that content in social media space should be accessible to all. The two major challenges faced were reaching out to the community out of social media and the community of stakeholders who are not aware that it is accessible to all. Best practices that could be followed by content creators in making social media more accessible for persons with disability were by writing meaningful alts for images, adding subtitles for videos, writing linked texts, structuring content and using hashtags. It was necessary to create a society that is empathetic and compassionate towards the needs of differently abled persons and make content more accessible.

Youth empowerment amidst digital transformations: Opportunities and challenges (WK 10)

India is all set to preside over the G20 summit for 2023. Home to 560 million Internet subscribers, second only to China, India has been balancing between promoting welfare policies for the second largest population and the aspirations to become a 5 trillion-dollar economy by 2024, thus presenting a unique set of challenges for a developing nation. This is an opportunity for Indians, and certainly pumps the aspiration of the youth. Indian youth constitute the largest demographic of the Internet users and as per UNFPA projections, India will continue to have one of the youngest populations in the world till 2030. Being the next generation of Internet users, youth need to be a part of the governance of the Internet and hold centre stage during decision-making processes.

Digital transformation has created many unique opportunities specifically for the youth in India. Remote working opportunities could be an important factor to drive change in employment and expenditure trends in the domestic economy. With the pandemic-led digital shift, products that young entrepreneurs create can now have a worldwide reach. With this, newer challenges like misinformation, the absence of fact-checks, and fake news have come into the picture. This has further created a divergence in people based on their beliefs and scepticism among consumers of social media.

There is a heightened need for cybersecurity because of a sharp uptick in unscrupulous acts involving digital payments. The combination of frictionless and fast systems like UPI, with limited digital literacy among the large population is leading to this worrying trend. There is, therefore, a need for robust systems to ensure the safety of online transactions and other processes, and a greater focus on laying down frameworks for greater cybersecurity.

Importance of accessibility has been heightened by the pandemic-led digital shift which has provided access to learning resources from around the world from the best mentors and institutions for students and young professionals in India. This new-found access to knowledge could prove to be a game-changer in a sense of inclusivity. Disparities in rural areas and gender lines are important to address. Accessibility for neurodivergent individuals was also brought up. With more and more systems shifting online, the isolation of groups that do not have the same level of access to digital infrastructure is a danger. The present moment in the Internet space around the world, and specifically in India, is a convergence of great potential to be tapped into but also numerous challenges to be addressed.

Internationalized Domain Names: Challenges of Universal Acceptance and Opportunities in Digital Economic landscape for Small Businesses (WK 14)

Internationalized Domain Names and Internationalized Emails have been considered to be the vehicles that will usher in the next billion onto the Internet bandwagon. The efforts to bring them to the core discourse have been ongoing at both International as well as National level. However, the kind of success that was expected has not been reached despite many good initiatives. The wider community acceptance to IDNs by the community remains elusive. In a way, most of these efforts have been talking to stakeholders from top-layers of the pyramid who are already on the Internet. It is no surprise that they see IDNs as cosmetic additions than a concrete requirement. On the contrary, the small businesses, which work deeply into one kind of linguistic community and often cater to monolingual customers, can definitely find resonance with the IDNs, if IDNs were to reach them in a way that seem friendlier to them and gives them enough time to trust them to migrate their businesses on them.

Internationalized Domain Names play an important role in ushering in the Multilingual Internet and the role of the Universal Acceptance Initiative for the IDNs. As much as multilingualism is important to digital India, Universal Acceptance (UA) is important for multilingual Internet. NIXI in India allows registration of domain names in 22 official languages. Language has nothing to do for IDN. IDN means a domain name with non-ASCII characters. These domain names are available and can be registered, and hence have email addresses, which is where UA comes into play. UA has five pillars: all the software applications must accept all the domain names and email addresses meaning that all software applications must accept, validate, process, store and display them.

ICANN is committed to enabling a more inclusive Internet by enabling all the other languages or scripts into the DNS system thus enabling the usability of users as well as making the Internet secure and stable. Globally they cover 26 scripts and 400 languages and are now working on making their own system UA ready. This is possible because of multiple working groups and following a multi-stakeholder model as well as pushing through the government structure through the government advisory committee.

UA is a fundamental requirement like Unicode for a multilingual Internet. Since the new GTLD program started, currently there are 1500 top level domains which are operational and these include the ID and CCTLD dot bharat in all 22 Indian languages operated by NIXI. Previously only ASCII characters were permitted like LDH (later digits than hyphen) in the domain name, and the domain names were restricted to eight, restricting to three characters. The Latin script used for writing English exhibits various challenges such as homographs as well as confusingly similar characters. Since ASCII permits only LDH and there are only 38 or 39 characters within, it is simple to validate the email ID or domain name for the ASCII by just using the RegEx pattern. The situation is different in the IDN. The current Unicode Version 15 has about one lakh characters representing 161 scripts with the possibility of having a greater number of confusingly similar characters within the script as well across scripts. Since a very robust and stable policy has been created around the international instrument names by way of the IDNA protocols which take care of all these language nuances, concerns over phishing attacks compromising the DNA system are likely low. Policies are there at the global as well as regional level and there are language level policies as well.

Currently a top-down approach is being followed with IDN. In this, big businesses already connected to the Internet as well as governments that are already providing citizen services can adopt the IDN, which will also facilitate the use by smaller businesses. However, it was the bottom-up approach that worked in the case of the English Internet as it first grew within the English speaking community. With the current data revolution in India, more and more mono language vernacular speakers are currently more into consumption of audios and videos. In every city and town there are established brick and mortar businesses that really do not need the publicity or outreach through the Internet but at the same time there are many small businesses that need online publicity to grow. They can be reached out by pointing to their monolingual user base and helped to showcase their business not only locally but in India and internationally as well. Initiatives that help such efforts to reach out through IDN would be a win-win for both the idea and the ecosystem considering the size of the creator economy in India.

Challenges that are being addressed by ICANN include issues of IDN displaying on the browser but getting converted into Punycode when pasted into social media which is a setback to the user because it is in computer language. For some challenges it is necessary to work at the protocol level while for others, the need was to work with bigtech.

Though there are many websites, YouTube channels etc. in Indian languages, the domain name is always in English. Awareness has to be brought into people about the availability of 22 languages and 10 scripts. Rules have been made in India for IDN in Indian language scripts. All devices like laptops, computers and mobile phones have the facility to input Indian languages. Email applications for more than a decade have been supporting Unicode text and now support the Unicode and email address also but there are many applications that still do not support email address verification in Indian languages. An initiative like Digital Bharat needs to be undertaken and along with the ‘dot bharat’ IDN, the ‘dot in’ domain needs to be given. Documents are available on https://uasg.tech/ that answer a number of queries on IDN and the way forward.

Last-mile Internet connectivity in India (WK 15)

India has the second-largest number of Internet users in the world currently. While digital technologies and services have the power to transform people's lives, connectivity is needed to leverage such opportunities. Despite the large-scale progress in connecting large sections of population, the digital divide persists across age, space, gender, literacy, and income levels. These gaps are most visible across marginalized and vulnerable groups in the country. Meaningful connectivity for everyone becomes imperative in such a scenario. This objective needs to be supported through holistic policy frameworks and a multi-stakeholder (government, private sector, communities) approach towards providing last-mile connectivity to each individual. This must include but not be limited to affordable and user-friendly devices, low-cost services, ubiquitous and universal connectivity.

The rapid expansion of the digital economy is leading to rapid economic growth, expanding social mobility and opportunities, and enabling easy access to government information and services. Therefore, the objective of ensuring no one is left behind in accessing these benefits by providing last mile connectivity becomes of utmost importance.

The absolute number of Internet subscribers in urban and rural India is similar, but the true picture is revealed when the two are compared. The percentage of the population with Internet access in urban areas is 69% whereas in rural areas it is only 37%. A large number of about 400-500 million Indians are without last mile connectivity. There is an urgent need to develop a regular measurement of connectivity to assess where specific interventions are needed.

Connectivity needs to be meaningful and relevant. The Internet speeds even in the metro cities of Mumbai and Delhi are extremely poor as compared to global standards. Backhaul connectivity should be available on demand to further democratize Internet access and provide meaningful and ubiquitous connectivity.

Bharat Net has not been able to achieve expectations; however recent initiatives such as local Udyami have proven the potential for decentralized and ground level efforts in creating demand. Utilization of Bharat Net remains unsatisfactory and Gram Panchayat level policy interventions are needed to help achieve the scheme its full capability. Successful technologies such as PM Wani can supplement last mile connections.

Last mile access needs to become more inclusive for everyone. Large scale gender and urban rural divides exist in access. There's also a need for specialized ICT devices for people with disabilities. Policies need to take into account these divides and design alternatives accordingly. The presidency of the G20 for India is the perfect opportunity to learn from the rest of the world and simultaneously showcase the potential of India's growing Internet story.

DAY 3

Towards a Multilingual Internet: Tools, Content & Enabling Policy in South Asia

Despite national boundaries, languages, dialects and scripts cross borders very easily, and the use of technology to help more users use a language or script of their choice is a common goal for all countries in the region. While technical standards are being developed by communities, adoption of local content and the acceptance of tools such as email internationalization by users, browsers and social media companies have been slow. The development of resources and support across the region vary, based on priorities.

Some progress has been made though challenges remain around supporting a multilingual Internet in South Asia. In Sri Lanka, half the nation's population (total population being 21.6 million) is online and uses Sinhala and Tamil scripts to communicate as required. Also, the 'dot LK' extension is available in both Sinhala and Tamil. Recent elections in the country sparked a greater generation of local-language content online. Use of Sinhala content is on the rise because voice input method is mainly used, and most people use android phones. The older generation is slow to use but their usage is also on the rise. Most used applications are Google maps, Facebook and WhatsApp, while Twitter has its own unique audience.

In Nepal, the government has supported the work on local languages for over 15 years and there has been good progress on tools such as keyboards, spell checking and grammar correction applications. It is also necessary to see the user's perspective, whether the users are comfortable with IDN and local language content. Other issues are about forms that cannot be filled with local language email ids, the use of numericals—Nepal uses lakhs and crores, but the Internet uses millions and billions. Another challenge relates to the calendar: Nepal uses Vikram Samvat whereas the Internet uses the Gregorian calendar. Critical aspects of the language must be coded and rendering issues—caused by hidden characters—need to be resolved.

In India the Government's focus is on building local-language AI engines, data centres and ML tools to make content in local scripts more usable online. A large focus is on serving the academic and health sectors. India has, as per the 2011 census, 121 language groups with 22 listed in the constitution; languages are also shared with adjoining countries. Critical areas of technology development are the need for indigenous algorithms, indigenous data centres and own cost-effective multi-lingual AI. Crazy language use—mixing and casual approach to language are challenges. Technology must be used to help gain control over how languages are used online, and therefore how they can be sustained.

For a multilingual Internet to be firmly established, financial and human resources are required. Governments in the region are allocating funds for this work. Common to all three nations is the fact that start-ups are in the space, building solutions for these markets. There is also scope for countries to partner each other in the effort to build a multilingual Internet for the region.

5.4.Building Trust, Resilience, Safety, and Security

5.4.1. Introduction

With the rapid growth of the Internet and its use becoming central to millions of Indians accessing digital applications & services online, we are also witnessing a rise in cyber-crimes and safety threats. For India to unlock its potential in the coming techade, we need a secure, safe and trusted Internet that will help capitalize on India's demographic dividend without fragmenting the Internet . At the same time, protecting user privacy on the Internet is critical and is also a fundamental right guaranteed by the Supreme Court of India.

Towards this, we need to explore policies and initiatives that enhance India's ability to safeguard its cyberspace from threats and cyber attacks, as well as making the Internet a safer place for everyone, irrespective of their caste, creed or gender. There is a need to address challenges around the Internet's inherent flaws, vulnerabilities from IoT, AI, data veracity and increasing digital fragmentation. There is also a need to enhance cyber hygiene education amongst the masses.

This sub theme had four workshops and a flash talk on the interplay of digital privacy, cybersecurity and online safety for nurturing trust in the Internet ecosystem as well as a Main Panel discussion on building trust online for south Asia.

5.4.2. Session Reports

DAY 2

Secured Technologies for Empowering Bharat and Safe Internet (WK 6)

The Indian government has introduced the Digital India campaign so that citizens are able to access government services electronically. It is also helping improve the Internet infrastructure and create a digitally empowered nation. A key factor in achieving these aims is to ensure that online access is secure and trusted, and citizens can use these services confidently. Especially since in today's digital economy, when even a vegetable seller is selling his ware and receives money online, small businesses are expanding their online markets, people are accessing citizen centric services, and women and girls are getting an opportunity to seek knowledge and get empowered, it is important that their communication and interactions remain safe and secure. Encryption and other security technologies help provide that level of confidence to users.

Studies reveal that consumers even in the remote parts of the country want secured communication. There is overwhelming evidence that encryption has broad economic benefits. The notion of sovereignty in the digital sense can broadly mean (1) protecting citizens through enhanced digital trust allowing free and fair conversation, (2) protecting and enhancing innovation and (3) protecting the nation state because any

measures that undermine security, allow entry points. Thus secure technology is a fundamental building block gluing together the entire system.

While there is awareness about security in the offline mode, there is a tendency to ignore the same in the online mode. The fact is that everything needs security in place. Otherwise, trust is easily eroded and can result in the collapse of the system. The only way to ensure online safety is to use end-to-end encryption. Security design has to be by default and toolkits to understand policy impacts on the Internet are available. Policy and regulations should be facilitative in nature.

There is genuine expectation amongst consumers that their messages are read only by the intended recipient. Most citizens in Bharat are on the fringes. One mistake and people would prefer to get back to non-digital methods. People at the bottom of the pyramid are more vulnerable from the threats online. Women for example are more vulnerable online. Those who are newly online can be easily disenfranchised as a result of online threats. There is also evidence to show intersectionalities even within vulnerability, which means that women, for example, are much more harmed by the consequences of any kind of harm that occurs whether online or offline. Also, the notion of women having much more fragile trust in digital systems means that they may be quicker in preferring to go offline.

Secured technologies such as end-to-end encryption play a crucial role in securing the Internet, making information secure and trustworthy. This helps to build trust online, which is essential to create an inclusive and empowered digital economy in India.

It is in the interest of the nation to promote secured technologies such as end to end encryption, as it not only keeps information secure but also enables innovation and plays a critical role in national security. It is necessary to explore alternative ways to address genuine concerns of law enforcement agencies related to hate speech, unlawful content, security issues, etc. Policies should be facilitative by design and nature and not hindering and should aim to create an enabling environment. Before drafting any regulation, a comprehensive study should be undertaken to identify any unintended harms that can be caused by the proposed regulation. Measures of regulation outside encryption should also be looked at such as what can be done about law enforcement and capacity for metadata analysis. Offline grievance redressal methods are also critical. Regulation needs to grapple around human intent.

There are various innovations to make tech secure and let users use tech with trust. An example is the alert finger mode for triggering an alert especially in forced financial transactions or child abuse. Similarly, options provided to users (e.g. ability to block) are also helpful. Capacity building within vulnerable communities and outreach through community organizations is essential. However, though education is considered key, it is not so easy in practice mainly because of the diversity.

Mitigating risk of secure technologies being leaked has to be done through proper governance frameworks at the firm level, through governance of data access, auditing and capacity building. There is a constant tussle between those who protect and those who try to infiltrate. Data breaches may be intentional or unintentional and to control this, it is necessary to have proper protocols and constantly upgrade.

Security by design and privacy by design should be hardcoded into any regulation being drafted. It is necessary to adopt a multi-stakeholder approach when regulations are being drafted related to security and privacy of users. Education and awareness are important, particularly for those coming online for the first time. Equally, there is a need to ensure there is a solid security-focused foundation for digital technologies.

What's next in Data Protection: Emerging Market for Privacy-tech in India (WK 8)

India is witnessing tremendous growth in digitalisation efforts with technology making its footprint in various sectors. Concomitant to the digitalisation efforts of India, privacy risks and concerns have come to the forefront, where businesses have created a privacy void that needs a fix. Emerging digitalisation trends in the backdrop of privacy void and regulatory developments like the upcoming data protection regime are making a case and market for privacy-tech in India, which has been in business globally for about a decade.

Globally, privacy-tech has aided businesses in complying with data protection regimes and individuals in securing their privacy. In the long term, it has aided in establishing a privacy-first culture, where consumers tend to favour businesses that provide greater individual security.

However, India's privacy-tech industry is notably distinct from the western markets. It is faced with unique challenges due to several structural constraints in addition to specific issues on both demand and supply-side of the market.

The Puttaswamy Judgment[4] declared privacy as being a fundamental right. Cyber threats have become a constant reality. In this context, data protection is not about keeping personal information secret. It is about creating a trusted framework for collection, exchange and use of personal data. Any transaction between two or more parties involves an exchange of essential information between the parties; thus an effective coordination between the demand side and the supply side of data is required in India. India's perspective on privacy tech is different from that in western countries. Low demand from the user's end and constant evolution in the privacy tech framework makes the overall ecosystem strategically complex in India. Challenges from both the supply and demand sides can be identified. A key challenge is the lack of privacy centric culture with businesses looking only at the compliance aspect and not from the value addition privacy tech could bring to protect their customers, thus giving their business a competitive advantage. A second challenge is that businesses are sometimes overwhelmed with large quantities of data. The third challenge is the low demand from the users themselves. Privacy governance has to become part of the leadership and executive and has to be built within the employees. It has to move beyond just compliance.

A number of issues are faced by the low-income households with respect to privacy in India. The biggest consumer protection issues in digital finance are found to be privacy and misuse of personal data. One of the dominant models of microfinance is the Joint Liability Group (JLG) loan. It was found that even in a small tightly knit JLG, the members were unwilling to openly share more than what was required thus

[4]Justice K.S. Puttaswamy (Retd.) & Anr. vs. Union of India & Ors. 2017 – India https://privacylibrary.ccgnlud.org/case/justice-ks-puttaswamy-ors-vs-union-of-india-ors#:~:text=The%20nine%20Judge%20Bench%20in,of%20dignity%2C%20autonomy%20and%20liberty.

showing that privacy needs, contrary to general perception, were quite important in rural areas too. Cyber scamsters are targeting people with very well crafted narratives and tapping into people's biggest insecurities especially with regard to finance and banking. Campaigns are helping in generating awareness of cyber crime but the challenge of distinguishing between a genuine message from a genuine player and a fake message from a fake player continues.

A privacy tech provider's experience indicates that privacy is still a nebulous concept and there are issues of privacy versus secrecy. The mobile number has become a de facto person identifier and with increasing data leaks, consumers feel the need for different identities to deal with different sets of people.

The information exchanged digitally, especially on end to end encrypted platforms, once on the system, is fairly safe. However, if there is a problem with the phone at the end, for example because of a root gate, then no amount of protection can ensure safety. Everyone has a different definition of privacy. Private information has to be distinguished from sensitive information and secret information. Purpose limiting the use of information has to be considered. Privacy is being approached in a roundabout way. People are prepared to give all kinds of information ranging from biometrics to banking data without a second thought if they need something like a visa. Tough legislation is required to get around this but it is not clear what form that would have to take. A set of Indian principles for India are required for India, considering Indian cultural modes and behaviour.

Online Harassment as a tool for exclusion (WK 11)

Targeted online harassment of individuals belonging to minority communities results in squeezing them out of the digital space. This harassment takes multiple forms like sending threatening messages, sexual abuse, doxing etc. Events like Bulli Bai App and Sulli Deals App which "auctioned" women belonging to the Muslim community not only violate their privacy, and objectifies them but also attempts to silence them and push them out of digital spaces. It aims to harass prominent individuals who represent the narratives of these individuals. Such harassment is an extension of the harassment women have to face in the real world when they make an attempt to claim these spaces.

The topic of online harassment of women has been discussed for a long time. An Oxfam study on the number of women using online media showed figures that are depressing. It has not been possible to sufficiently empower women to use digital media. Access to digital media is part of freedom of expression, be it in education, commerce, health or government programs, and women lose out by not accessing digital spaces.

Harassment of women who access online media takes multiple forms. Lawyers, academics, social workers, teachers, and activists, are all impacted. The recent report of auctions of Muslim women's identities online was a severe case of targeted harassment. Tech companies are not coming forward to respond and/or regulate, so relief takes a long time. Law enforcement drags their feet. In short, there is a denial of the problem. Even after 20 years, the talk is still about access, censorship and harassment of women.

Sexual identity minorities and gender minorities experience significant negative experiences. Women are 46% less likely to own mobile phones, and even fewer have access to the Internet. Tech-Sakhi is a platform that deals with cases of abuse. Scams, including financial ones, are common. In one case, more than losing money, the victim was worried about informing her husband.

Sheroes and TechSaki are examples of tech platforms and apps that provide safe spaces for women or support those facing online harassment. Having a protected space makes it possible for victims to share and participate freely. Conversations on the Sheroes platform about sexuality, alternative sexuality, and abuse wouldn't have been possible in other spaces. The anonymity that social media gives magnifies the patriarchy that leads to abusive behaviour. Safe spaces help women to express themselves better, grow and find their voices, because of positive affirmation from other women.

To the question if professionals such as journalists, lawyers, and activists are targeted to silence the victim and to create a barrier to isolate the narrative, the journalist's viewpoint was that usually, the victims are shaken by the abuse: rape threats, death threats, doxing and violation of privacy, leading to a sense of shock and feeling vulnerable, even when they are well-known professionals, thus silencing the individual and also silencing their work of bringing stories to the public domain.

That women still do not have a voice is indicated by the fact that pictures, comments, and trolling make them feel that the anonymity that media provides is not available for them. In a recent case, a student escort who put private pictures on LinkedIn was severely trolled. Women should have a public space where they can express themselves freely. There is still a long way to go for women to express opinions because of fear. Even as a professional, she feels that her professional credibility will be undermined. In India and the world, online spaces are not safe for women, leading to self-censorship and self-questioning. Sadly, a lot of the trolling also comes from other women, the behaviour is not gender-specific. While men may face toxic attention, it is much more severe for women. Unlike male victims, the nature of abuse is far more vicious and is often sexual in nature in the case of women. However, irrespective of the gender of persons who cross these boundaries, the focus needs to be on the consequences.

The controls on social media use for women are severe. A woman or girl's phone is more likely to be checked on who she has called, thus controlling her. Social controls—like community panchayats—still exist. During the pandemic, girls were severely controlled in terms of their access to online classes and digital spaces.

What should the Government and Tech companies do to solve this problem as the current approach is lackadaisical? It is well known that social media companies profit from hate and viciousness as these increase traffic. No action has been seen from the government or Social Media Companies (SMCs). The Government of India has restricted SMCs through guidelines (FB, WhatsApp, YT). These can impact the business of SMCs, so there is pushback from their side. The entire end-user community is powerless. In one case, Human Rights activists were removed from WhatsApp and Twitter, and it was very hard to complain and get redressal. It is believed that only when someone has direct access to the company CEO, that something will happen.

Sheroes has taken harassment seriously, and victims have the freedom to report it. Because Sheroes has strict guidelines that inspire confidence in women, it has become a well-known safe space for women to speak out and express themselves. Sheroes is now partnering with Google to provide digital literacy for women in small towns and villages. As women begin to understand that this is the first step towards financial independence, they become more confident. Gender-safe spaces are therefore important. An example was how a quiet under-confident girl who made paintings on stones discovered the Reliance community bazaar where she began to sell her work. The financial confidence gave her social confidence, leading to confident videos and content on other platforms. She now has recognition from the public. Safe spaces help women to evolve and discover themselves and to negotiate other spaces as well.

A fundamental question is whether the stakeholders such as the government and SMC are able to recognize being violated in online spaces. While the act may not be itself sexual, it may be severely misogynistic.

Companies are now making workplaces free of sexual harassment. Now, sexual harassment has moved from workspaces to digital spaces. There's been a 50% rise in harassment since the pandemic. Pictures are taken from online meetings and misused. When physical spaces are made safer, the abuse has moved to digital spaces. The harassment never ends. Also, quite frequently, the nature of videos of women being circulated through, for example, WhatsApp is very sexist. While women are discovering spaces, there are efforts to “put them in their place”. Stopping harassment would require grassroots-level changes in people’s mindset.

While safe spaces are important, the issue is also about the power that social media has, which will not allow the disempowered, marginalized women on the fringes to move to the centre. The issue is really how these people can manage to get a toehold over some of the power over the media and how the media can be made more accountable.

Standards Ensures Resiliency (WK 16)

The Internet is becoming more and more important for societies and the recent pandemic situation has increased its importance multifold as key services have moved online. The new set of users is from diverse geographical locations being forced to go online. This online movement has created issues of Digital Divide and also issues of trust and availability. The life of the common man is dependent on the availability of the Internet. Poor services and less than optimum Internet delivery infrastructure and bandwidth quality can ensure the resiliency and the availability of the Internet.

There is an increasing level of I.T penetration and networking in almost all areas of life which impacts people economically and socially. If India wants to touch the vision for a five trillion dollar industrialized nation, then we cannot fail to act upon resiliency because increasingly digital India is also giving rise to new threats which must be responded to very quickly and very decisively. Specifically, the danger of having targeted cyber-attacks on IT infrastructures which affects public sector bodies or the operators of critical infrastructures or any other business and organizations. India is among one of the five top

economies to suffer from cybercrimes and different kinds of disruptions. Hence, organizations, systems and critical infrastructures including the Internet need to be made resilient.

It is useful to look at one of the foundational principles of the Internet which was to develop a resilient communication network, safe from disruptions. The Internet has become the lifeline for humanity and its importance was seen during Covid-19 as it helped the world carry on. This system binds the people and all sectors of the economy. The Internet system has remained a decentralized open and a permissionless network of networks which has worked well. A resilient Internet connection is an always on service, providing a certain speed, quality of service levels, reliable against disruptions and maintaining uninterrupted access.

It has various elements such as transit links, fixed networks, fixed access networks, mobile and wireless access networks, satellite networks, optical fiber networks, submarine cables, Internet exchanges, content delivery networks and the worldwide web itself with its vast amount of content and data. Resiliency, therefore, has to do with each of these elements being resilient. It is not only cyberattacks but also physical damage, supply chain issues, cable faults, hardware or software failures and satellite downtimes that can bring down the Internet services.

There are mechanisms to check on the state of the various elements and resiliency of the networks and there are standards and open protocols which keep the services on the Internet relatively secure, safe and trustworthy. There are technical standards as well as community initiatives but currently there is no single and reliable system that tracks measures and provides ready information on whether these various elements of the networks or the online marketplaces, the content sites the social media sites on which humanity depends have deployed any kind of open security standards and protocols which generate the resiliency in the various elements of the network. Hence it is necessary to ensure that we all have a transparent system of standards adoption and implementation.

Measurement is very important to ensure the components are working based on the parameters like uptime, bandwidth and DNS latency. It is also necessary to understand at what level resiliency is required such as through, for example, the use of the Internet resiliency index. For the next generation of the Internet and the kind of bandwidth expected to be needed, it is essential to come up with standardized practices of Internet resiliency in the country. Resiliency can be in terms of an organization, from an economic perspective, from a social perspective and so on. Standardization is important in that it gives the best practices of doing certain things. When an organization combines resiliency and standardization in a single entity, it is seen that they are able to get contracts, provide services in the best possible way and survive changes in the business environment.

The popular standards such as ISO 9001 have been revised to incorporate the resilience aspect. Various IT companies follow ISO 27001 for IIT security and ISO 20000 for IT service management, which have also been revised to incorporate risk assessment and risk management. There are gaps in the standardization as in the provision of Internet services. Recently, the focus has been on providing the standards in the field of systems resilience. This is because no service is provided by a single

organization; there are various organizations cooperating at various levels. The efficacy of the available standards also needs to be examined. Also needed are forensic standards on resilience to identify if things have gone wrong, what has gone wrong and where.

All the network elements that comprise the different ecosystems of the Internet are run by different organizations and individuals. There is a need to think proactively, to analyse, test and identify gaps and vulnerabilities and close them. Resiliency should be seen not only from the technical perspective but also from the organizational perspective and should be the central part of the management strategy. ISO 22316:2017 provides guidance to enhance organizational resilience for any size or type of organization but is not an auditable standard. One area to look into therefore would be to make it a requirement for which every organization has to mandatorily get audited. There is a huge opportunity in terms of research and development in the area of Internet resilience.

Koo: Building Safe Online Space, Fostering Inclusion & Empowering Communities (FT 2)

Koo is an Indian homegrown—but now global—microblogging app that focuses on local languages and local communities. For social media, a major consideration is content moderation. Koo builds language communities where the exchange of thoughts is within these communities. Community guidelines are flexible, but Koo considers that the laws of each country are of paramount importance. Koo avoids placing community policy above local laws, which may prevent freedom of speech. That is flagged by users of the language community and is examined by human moderators. The actions taken include (a) removal of offending content, (b) action on user profile: in the case of repeat offenders or extreme content, the algorithm will reduce visibility of content, (c) block creation ability: the User no longer able to post, but can see other content, and (d) removal of user: in rare cases, such as Child Sexual Abuse Material (CSAM), users are removed.

Freedom of speech is only curtailed based on their action or government/court orders. Users are notified when action is taken for appeal. Appeals are responded to within 15 days. A combination of human and AI tools are used for identifying offensive content. A Report button is provided for users, which goes to human moderators. Automated tools consider sensitive words in each language. Koo works with government organizations and text corpora to identify potential violations. For pictures, Koo uses cloud-based AI tools to identify offending content.

Content for moderation is categorized into several levels. For instance,

Level 1: Terrorism, extremism, CSAM

Level 2: Hate speech, discrimination, violation of Intellectual Property

Level 3: Abuse, spam, fake news

Takedown orders from courts are always implemented immediately. Offensive content is geo-fenced, not promoted for visibility, not found in people's feed, and not searchable. In some cases, content is handed over to law enforcement.

These measures help Koo bring inclusivity to the platform and preserve local communities. Koo aims to be a local platform, in local languages, for local communities, providing the best experience for their content.

DAY 3

Main Panel 2: Building Trust Online for a Digitally Empowered South Asia

With the rapid growth of the Internet and its use becoming central to people across the globe, we are also witnessing a rise in cyber-crimes and safety threats. For countries in South Asia to unlock their potential in the coming times, there is a need for a more secure, safer and trusted Internet. At the same time, protecting user privacy on the Internet is critical. It is necessary for countries within the region to collaborate in harmonizing privacy, cyber security and online safety standards to create a trusted Internet ecosystem and in turn create a digitally empowered South Asia.

As South Asia races towards becoming entirely digitalized, it raises questions of how trustworthy the systems, processes and different players are; how is trust online to be built between citizens and state, between different states and between users and companies. Certain laws and policies allow for this trust to be built while others potentially inhibit it. There are also extenuating circumstances such as developing international standards and the dependence on global supply chains to enable this journey towards digitalization.

In Bangladesh, 90 percent of the startups are digital startups and when individuals see that it is a government supported company, it helps build trust. Ten years ago, buying things on the online space was often linked to the authenticity of the product. Today, the concern is more about misinformation especially across social media. Part of it can be ascribed to digital literacy of the citizens. Most social media servers are not located in Bangladesh as these are global platforms suggesting the following options: should the social media servers forced to be located in Bangladesh or should Bangladesh have its own social media, and if so how to go about it. A data protection Act for Bangladesh is also being prepared.

For South Asia to be digitally empowered, the fundamental pillars of digital economy that will contribute not only to the digital economy but to the overall the trust are: (1) availability, accessibility and affordability of digital infrastructure, (2) digitalization of operations across government and private sectors, (3) reliability and trustworthiness of digital public platforms and their ability to operate in an integrated manner, (4) confidence of people in using fintech and (5) availability of digital skills. Trust has also to be from a consumer’s point of view, ease of access and cyber-security.

Believing that from an economic perspective, trust can be ensured if global benchmark standards are adopted in domestic policy legal framework to interact globally, Sri Lanka has, while formulating the Electronic Transactions Act, upgraded themselves to the UN Electronics Convention. Subsequently it is

seen that other small nations from Asia are now onboarding this. Similarly, they are following the Budapest convention for engaging international standards available and providing tools to empower judiciary to fight cybercrime. In the case of data protection and privacy issues, they are looking at the OECD guidelines and other principles available across the globe, and plan to adopt them in line with global standards.

In Sri Lanka, it was found that the private sector would find it easier to cooperate and collaborate if both the private sector and the government were on the same equal footing. Hence Sri Lanka's Data Protection Act is applicable equally to both private sector and government entities. On data localization, a compromise was reached as principles and policies on the subject are evolving. While the private sector and government-owned business undertakings and government-owned Banks included would have flexibility on cross-border data flow, government entities collecting citizen data pursuant to a legal obligation would be obligated to localize but that's not a mandatory localization requirement. Based on data classification and categorization in consultation with the data protection regulator and the supervisory authorities, they can locate that data in a third country provided that third country has equivalent standards and harmonization with Sri Lankan norms. Sri Lanka is thus in a situation where all partners globally are talking to them because they have managed the right compromise between the international standards.

It is believed that most of the Internet works on trust. But that is really true only if there is trust in the partners. An attitude of respecting others is essential. In addition to user-friendliness of platforms, trust in fintech and availability of a legal / judicial mechanism if something goes wrong is necessary. Another issue with regard to misinformation is that electronic media is much faster than print media and is not regulated and hence, frequently wrong information may be carried. News that is barred from being carried in the print media may be available on social media.

Another point of view is that it is not a digital transformation, it is a transformation in digital technology. It is very difficult to control the new technologies. Having agreed to a multi-stakeholder model of the Internet, it is time that industry comes forward and plays its role as a significant lead player of the multi-stakeholder system. A code of a conduct has to be agreed upon which needs to be followed by industry as well as by the countries in a sacrosanct manner. Trust is not only between states and citizens because currently South Asian laws seem to give carte blanche to the states, granting the state's privacy while expecting accountability from citizens.

The ingenuity of the Internet is that it allows free flow of data. The question is how to account for the different standards, different principles and different cultural values across different territories. India has been trying to evolve a Self-Regulatory Authority (SRO) for the content. It has not been successful because international tech giants have their own model and are opposing it. In other words, any law or regulation will be effective if the tech giants of the world come forward and impose self-discipline around themselves. With regard to online content moderation an SRO is one option while another is taking a more paternalistic approach which India has taken through law by creation of a grievance appellate

committee. The best approach is for tech giants and governments to discuss these issues and come up with a solution together.

While talking about trusting information online and about social media platforms, it is necessary to talk about freedom of speech. Online freedom of speech in South Asia has come under immense criticism and scrutiny from both within South Asia as well as from across the world. A lot of censorship is actually enabled by laws of South Asia's countries. A balance between the two is required. Three strands of legislation that emerge in South Asia and across the world when it comes to regulating content online are online content regulation, privacy legislation and cyber-security legislation or cyber-security strategy. The question of data localization is not yet enshrined in any privacy act though there are notions of trusted geographies.

5.5. Internet Regulation

5.5.1. Introduction

There is a growing need for updating the current internet regulation in India, which is more than two decades old. To this end, the Government of India has stated that a new Digital India framework will replace the Information Technology Act, 2000. There is no doubt that any new framework on internet regulation will play an important role in leveraging India's techade. In addition, the fast adoption of internet technology due to COVID has posed both new challenges and opportunities, and with various offline services going online. In this context, a multi-stakeholder approach is needed to ensure an open, safe and trusted, and accountable internet. Deliberations for this session were through five workshops and a fireside chat as reported in the following section.

5.5.2. Session Reports

DAY 1

Privacy Regulation in India (FC 1A)

There has been a long trail of discussions and debates in diverse spheres of the nation relating to various personal privacy draft legislations in India. The immediate future of privacy regulations in India are important considering the current situation of the Indian market and economy which is witnessing tremendous growth in technology as well as when India has taken over the presidency of the G20 summit.

Though a few initial missteps can be identified, the mood is one of cautious optimism that the promulgation of legislations from the current draft on privacy laws would be the beginning of a new journey. India has been aware of its stature as a rising global superpower and emerging technology hub and therefore the proposed policy frameworks would align with the aforementioned objectives and foster

a vibrant economy to augment the startup ecosystem. India will be better equipped for engaging in multilateral trade agreements when provisions relating to cross-border data flow, definition of jurisdiction, reciprocity, autonomy and sovereignty over data are defined in the new legislation. The influence of these factors was heavily felt in the long-drawn policy discussion processes in the past.

Increase in digital literacy has definitely played a galvanising effect on the startup ecosystem and has spurred the Indian economy. Though the policy framework may feel like a burden in the short run, in the long run it would create a sustainable ecosystem for startups just like the GDPR did for ventures in the European Union. Establishment of a gold standard for privacy that meets the global level would better empower the Indian startups to compete in the international sphere.

The notion of data principles like rights of an individual and conduciveness of technological operability being at odds was unfortunate. These principles are co-existential and mutually aligning rather than being conflicting in nature. Compliance to a better privacy policy would assure transparency as well as accountability and would enable them to gain better customer trust. This in turn would drive their business prospects and would allow them to compete at global levels as well.

By having a framework of codified set of laws concerning data privacy that was previously unavailable, India now has an impetus, and would be well-poised to engage in international discourses such as trade that involve cross-border data flow. These legislations are expected to drive up digital literacy and inclusivity across India.

There was no concrete definition for the term “friendly” in the draft bill. Perhaps it was intentionally left out by the government to enable operational flexibility to incorporate the continuously shifting dynamics in bilateral relationships with countries. The bill only laid down certain principles while leaving the subtle nuances open for operational flexibility depending on geo-political tides. The current draft policy has done away with the differential obligations that depended on the data categories. The bill laid down the guidelines for processing and regulation for personal data while placing the personal data as a wide category.

The promulgation of the bill into a law would be a landmark in the Indian context. It is hoped that the fervour and vigour with which the civil societies, the agencies, and the academia have engaged and interacted with the government during the course of the draft bill would continue.

DAY 2

Digital India Act: Principle-Based Approach to Regulating India's Digital Economy (WK 9)

The new Digital India Act must be agile, pro-competition, pro-innovation, harmonised with sectoral statutes and ensure that the interests of the Indian users are safeguarded. Governments across the world are debating the merits of wider goals-based or principles-based regulations versus narrower rules-based regulations for the digital economy. The former requires thoughtful calibration and state capacity for enforcement, but is more resilient to changes in technology and business models. The latter allows for easier enforcement but is rigid and disallows innovation. Given the ever-evolving nature of technology, it is imperative that India's digital economy is provided with a principle-based legislative and regulatory framework that enables market creation and consumer safety.

It is necessary for legislation to provide safe harbour for technology innovation while balancing the consumer interests. The IT Act of 2000 promulgated during the times of analog signals and Web 1.0 was outmoded in the current transformative times when Web 3.0 is on the horizon. Innovations are driven by need, and the evolution of technologies has increasingly blurred the distinctions between various digital services. Hence, it is essential that model legislations capable of encompassing all kinds of use cases pertaining to current technology evolution must be envisioned. The dynamic subordinate legislations as well as co-regulatory or self-regulatory models must be built into the Digital India Act (DIA) citing precedents such as Broadcasting Content Complaints Council (BCCC) as the government may not always be in a position to supervise the emerging technologies.

Institutionalization of principles such as accountability and transparency should be built into the DIA and the regulations must conform to international standards to provide an added advantage for technology startups in a globalized market. It was essential to define problems that the DIA must expect to address as the principal objective of DIA was to guarantee an open, safe, and accountable Internet. The use of regulatory sandboxes could be promoted. A regulatory sandbox can be visualized as a controlled environment with a closed set of cohort user groups and a sanitized dataset for a limited period. Such regulatory sandboxes ensure that entrepreneurs are provided with an opportunity to deploy their innovation while ensuring the ability to observe how the product behaves, to visualize its key performance indicators, and to evaluate if a product is harmful to the public or not. Successful incorporation of provisions to ensure co-regulatory and safe sandboxing models into the DIA is expected to go a long way in building trust.

Co-regulatory or self-regulatory models cannot be effective in the long run unless there is a positive shift in the attitude of the masses to comply with regulations even when there is a minimum inertia from the law or the government. The need for government micro-oversight to achieve compliance could be reduced by educating entities about regulation and evoking interest in self-regulation as well as by introducing the incentives of having implemented the regulatory measures to enhance industry consensus and adherence. It was necessary for building trust while framing legislation. There are challenges of compliance when the entities need to come to terms with different regulatory bodies and different technologies.

Today, the kind of intersectionality that exists in the digital domain makes it impossible to view education, medicine, or governance without the telecommunication facet. Hence there was a necessity for clear delineation of principles or objectives when setting out to define regulations; this conceptual clarity was found wanting with the current draft of the telecommunication bill.

Digital technology was playing roles such as creator of new solutions, distributor of solutions, as well as serving in healthcare, agriculture, education, governance and the goal of digital technology in these sectors must be clearly envisioned. Cyberattacks had transformed from profit-oriented small-scale attacks to nation state-backed attacks that intend to destroy, degrade, or deflect situations as well as to perform cyber espionage activities. A possible rise in intellectual property infringements could be expected with the multifold rise in the number of intellectual properties with the democratization of digital technology. The growing capability of digital technology to influence the opinion and perspective of the masses has to be noted as well.

Accountability and deterrence must be built into the act to clearly communicate the significant penalizations that the violating entities must face if breach of regulation takes place. A globalized, interoperable set of standards and clarity on reciprocal sharing of data with foreign countries would be good for the Indian digital space.

Considering the draft telecommunication bill, it is essential to recognise the need for flexibility considering the dynamic nature of evolving technology. The protection of consumers, the network and the national interest may be considered the three non-negotiable principles for any regulation and must form the basis for defining an evolving regulation approach where regulations are constantly revisited rather than having rigid, ex ante regulations.

Consumer awareness had to be significantly improved. Digital technology is extremely powerful and India as a nation can lose out on a terrific opportunity if a conducive environment is not provided. DIA must be user-first, easy to implement, and harmonizing; subtle nuances like “one size does not fit all” and that everything is intertwined, must also be considered while framing the regulations.

Online safety combat: Exploring the journey of self-regulation in India (WK 12)

Online safety combat is a contentious point of discussion in the Indian tech regulatory landscape. Given the volatile trajectory of regulation, it is an opportune moment for the government, social media/messaging platforms, and societies to invest in understanding online harms and building measures to address them effectively. Globally, we are witnessing a shift in the approach of regulating social media/messaging companies, moving towards enhancing their accountability in online safety combat through self-regulation. Online harms combat by tech entities in countries like Australia, New Zealand, UK and Singapore suggest patterns of self-regulation, and a growing relationship between intermediaries and state bodies.

The state must maintain a crucial position on the rights of the citizen as they apply to online harms; this means a balance of user safety and platform freedoms. With careful interference, the state can protect Indians while ensuring that large scale digital platforms match their promises as bastions against

misinformation, hate and harassment. But undue interference can weaken user freedoms and shackle platform responsibility-creation.

Institutions and architectures that are dedicated solely to user needs of trust and safety must be considered in the light of the extensive movement towards platform self-regulation in the absence of external assessors and evaluators in India. It is not enough to have ministries and law enforcement agencies; standard-setting boards such as for Trust and Safety infrastructure are also required.

Self-regulation and other stakeholders: What makes online harms in India a contentious space is the way such harms directly correlate with offline social infrastructures of gender, age, orientation and class. Vulnerable communities in real life continue to be marginalized online, calling for a greater cognizance of the specific ways that online harms target Indian minorities, women, children and economically-weaker sections. For platform self-regulation to be effective, there has to be a layered, differentiating and incremental approach to increasing user empowerment, privacy measures and safety that reflects the commitment of platforms to be moving in the light of the different speeds and safeguards that different Indian digital users require. Partnerships with CSOs and law enforcement must also yield more specific interventions than merely product level features and campaigns. Specific tools have to be developed for the thinking, acting and reporting facets of a user on a platform. Additionally, the policy space can inform the entire landscape on the demarcations and guardrails of self-regulation, the appropriate zone for the platform and for the industry, vis a vis the state and other stakeholders.

Leveraging Competition Policy for growth of Digital Markets (WK 13)

The growth of digital markets in the country has been driven by increasing Internet penetration, rising scalability of startups and an enabling regulatory framework. The extant Indian antitrust law, for instance, has strengthened digital markets by allowing pro-competitive mergers and giving new digital business models like cab aggregators freedom to innovate. However, the rapid growth of digital markets has also come with its own fair share of challenges. For instance, the multi-sided nature of digital markets makes it challenging for countries to adequately address the anti-competitive concerns. To deal with such peculiar challenges of emerging digital markets, India is tailoring its current laws and contemplating future tools.

For instance, the Competition Amendment Bill, 2022 which has been referred to the Finance Committee contains provisions that would equip the Competition Commission of India to deal with the digital markets. However, to supplement these remarkable measures, it is required that the basic antitrust principles that suited traditional markets are evolved to cover the intricacies of digital markets and further their growth and innovation.

A key challenge faced by the Competition Commission of India is grappling with balancing interests of different stakeholders. For example, in one case, while individual end customers benefitted, small businesses were affected while in another case, local app developers were affected when big tech came in. Hence, though in general, the focus is on ensuring that there is no measurable harm to the end consumer, it may not be the right parameter to measure.

The CCI has consistently attempted to balance the interests of the stakeholders. The Act facilitated tech growth in India through some statutes such as de minimis and within the framework of the law itself

which helped the tech ecosystem. The investments in the startups has not required the rigors of merger control, which has provided easy clearances to investments in the startups. On the enforcement side, in the initial orders, the CCI also took a calibrated approach and exercised restraint from having a regulatory overreach letting the market play out. In the early days, the online marketplace was treated in the same way as offline markets. More recently, there has been a change in the policy at the CCI and they are taking cognizance of the global big tech as well as local big tech. The consumer base is different in India and what may be wisdom in the US or EU does not necessarily make sense here.

The development of competition policy has taken time. There are many challenges in the competition landscape. It is difficult to delineate digital markets, these markets have multi-sided platforms and the customer bases are complex and users are interacting with one another. The question therefore is defining the metrics for computing market power of dominance because the way it is done for traditional markets is not usable in digital markets. Tech markets are dynamic, market power is transient in nature and very prone to disruption. These issues are relevant at the policy stage. The ecosystem in India is very robust because it has benefited from these provisions. Investment comes into the startups from the big global big tech companies. There is a need to recognize merger criteria and look at merger control in digital markets.

From an economics point of view, for competition analysis, traditional tests for traditional markets may not work for digital markets. CCI has not used the SSNIP[5] test consistently and has been using its own ad hoc criteria for varied cases.

It is not necessarily true that the tech sector is vulnerable to disruption as what has been seen is that the tech sector in most cases is characterized by persisting dominance of very large firms who use all kinds of strategies which are yet to be tested in India to preserve their dominance. It is also becoming true that all tech players cannot be looked at in the same way; rather sophisticated economic analysis is required to examine the situation.

It is necessary to see what kind of bill is tabled and how it will affect the landscape. Foreign tech should neither be discouraged nor thought of as the only way to provide solutions if Indian companies don't come to speed. It is necessary to work hard and invest in capacity. CCI judgments need to be strongly factual and watertight, lest they are overturned. In short, the way forward is to guard against overregulation and wait and watch, looking at case law closely, balancing the needs of all stakeholders, and making sure that India has a framework for growth of digital markets suited to our own policy and market realities.

[5] Small but Significant and Non-transitory Increase in Price.

DAY 3

Digital Governance and Technological Standards for Responsible Gaming (WK 17)

As already highlighted by the Hon'ble PM, India has the potential to be a global leader in game development. The country is already transitioning from a net importer of global gaming titles to a global exporter of content and IP. By 2025, India's online gaming industry is expected to reach ~USD 5 Bn, accounting for roughly 1.7% of the global market. Furthermore, by 2025, India is expected to house over 70 crore online gamers. Today, there are already over 1,000 online gaming startups in India and over 15,000 game developers. Given the immense potential online skill gaming industry offers, as a driver of economic growth through revenue generation, investments and employment, it is essential that the industry is provided with a principle-based regulatory framework that ensures structured growth and user protection. The framework must provide for technical standards for responsible gaming such as platform integrity, player protection, privacy and KYC.

The Online Skill Gaming (OSG) industry has emerged as a key component of India's digital economy. In the coming few years, it has the potential to become a high growth driver for economic growth, attracting investments and creating employment. The OSG industry in India, however, is still in its infancy and requires a uniform and robust regulatory framework to ensure it continues to grow and becomes globally competitive.

Today, over 50% of the global gaming market is driven primarily by the U.S and China. India, therefore, requires a regulatory framework that empowers Indian startups and entrepreneurs to develop world-class IP and, thereby, play a much greater role in the global growth story of OSG. As a critical engine of global economic and technological growth, India is being looked at by the world for direction on ensuring openness, transparency, trust and accountability in the digital economy. India, therefore, has a unique opportunity to create a regulatory framework for OSG that serves as a model law for the world.

A number of recommendations on regulation of the Online Skill Gaming Industry are mooted. Given the size, scale and the dynamic nature of the OSG industry, India must consider a principle-based national regulatory framework that is agile, nimble and resilient to changes in technology and new business models. Such a framework must, first and foremost, focus on clearly defining the OSG industry by categorically distinguishing games of skill from games of chance i.e. betting and gambling. This clarity is key to protecting and promoting Indian OSG startups, while prohibiting unscrupulous platforms.

Self-Regulatory organizations, or SROs, can play a critical role in this regulatory framework by providing requisite technical expertise and support to the Union Government in areas of administration, monitoring and compliance. The regulations must also provide principles and technological standards for preventing user harm, ensuring platform integrity, protection of minors and effective grievance redressal.

6. Appendices

6.1. Program Schedule (from the Website)

The program schedule on the website needs to be updated

6.2. IIGF Committees (from the Website)

S No	Name of Committee	Members of Committee
1	**Coordination & Organizing Committee**	• Shri Anil Kumar Jain, Chairman, NIXI • Shri T V Ramachandran, Vice Chairman, BIF • Dr. Jaijit Bhattacharya, Vice Chairman, C-DEP • Prof. Rajat Moona, Vice Chairman, IIT G • Smt. Amrita Choudhury, CCAOI • Shri Ajay Data • Shri T Santhosh, MeitY • Shri Anupam Agarwal, IIFON • Shri Satish Babu, inSIG • Smt. Seema Khanna, NIC • Smt. Sarika Guliani, FICCI • Shri Mahesh Kulkarni • Shri Santanu Acharya, NIXI • Shri Shubham Saran, NIXI
2	**The Secretariat**	• **Mentor** – Dr. Jaijit Bhattacharya, C-DEP • **Chair** - Shri Shubham Saran, NIXI • **Members-** • Dr. R K Mitra • Shri. Sharad Venkatraman, C-DEP • Smt. Akanksha Dey C-DEP
3	**Finance Committee**	• **Chair** - Shri Santanu Acharya,NIXI • **Members** - • Shri. T.V.Ramachandran, BIF • Shri. Deepika Panwar • Shri. Nitin Sharma

S No	Name of Committee	Members of Committee
		• Shri. Arvind Chaudhari • Shri. Arun Mukherjee, BIF Shri Nitin SharmaShri Arvind Chaudhuri
4	**Pre-IIFG22 Events Committee**	• **Chair** - Dr. Ajay Data • Dr. Jaijit Bhattacharya, C-DEP
5	**Regional Language Committee**	• **Chair** - Shri. Mahesh Kulkarni, EVARIS SYSTEMS LLP • **Co-Chair** - Smt. Sarika Gulyani, FICCI • **Members**: • Dr. U.V. Pavanaja, Vice Chair, UASG, ICANN, • Shri. Nitin Wali, ICANN • Shri. Sandeep Nulkar • Shri. Akshat Joshi, ThinkTrans • Shri. Aman Masjide, Radix • Shri Harish Chowdhary, • Shri Jay Paudyal, ISOC Delhi
6	**Sponsorship Committee**	• **Chair** - Shri. T.V. Ramachandran, BIF • **Members** - • Shri. Shantanu Acharya, NIXI • Smt. Deepika Panwar • Shr. Nitin Sharma • Shri. Arvind Chaudhari • Shri. Arun Mukarji, BIF
7	**Theme Committee**	• **Chair** - Smt. Amrita Choudhury, CCAOI • **Co-Chair** - Shri. Deepak Mishra, ICRIER • **Members** - • Shri. Anupam Agrawal, IIFON • Smt. Avinash Kaur, MeitY • Shri. Anand Raje ISOC Kolkata • Shri. Debashish Bhattacharya BIF • Smt. Deepti Menon, MeitY

S No	Name of Committee	Members of Committee
		• Shri. Devanshu, MeitY • Dr Govind ISOC Delhi • Smt. Ihita G, YIGF India • Smt. Isha Suri, CIS • Dr. Jaijit Bhattacharya • Shri. Kazim Rizvi, The Dialogue • Shri. K Mohan Raidu ISOC Hyderabad • Shri. Mohit Batra, MeitY • Smt. Nidhi SIngh, CCG NLU • Shri. Pradeep Kumar Verma, MeitY • Smt. Prerna Kapoor, Chase India • Shri. Samiran Gupta, Twitter • Shri. Satish Babu, inSIG • Smt. Shiva Kanwar, ICRIER • Shri. Shiva Upadhyay, CDAC Delhi • Smt. Shveta Kokash ISOC Mumbai • Shri. Snehashish Ghosh Meta • Shri. Srinivas Chendi APNIC • Dr. Sudha Bhuvaneswari ISOC Chennai • Shri. Sunil Abraham, Meta • Shri. T Santhosh, MeitY • Shri. T V Ramachandran, BIF • Smt. Zainab Bawa, Hasgeek
8	**Reception Committee**	• **Chair** - Shri Anupam Agarwal, IIFON • **Members** - • Shri Arun Mukarji, BIF • Shri Anand Gupta, BIF • Smt. Neema S Kumar, BIF • Smt. Amrita Choudhury, CCAOI • Shri Satish Babu, inSIG • Shri Sushanta Sinha, ISOC Kolkata
9	**International Relations Committee**	• **Chair** - Shri Shubham SaranEmail - shubham@nixi.in • **Members** - • Smt. Amrita Choudhury, CCAOI

S No	Name of Committee	Members of Committee
		• Smt. Avinash Kaur, MeitY • Shri Shubham Saran, NIXI
10	**Marketing Committee**	• **Chair** - Shri Shubham Saran, NIXI • **Members** - • Shri Nitin Wali, ICANN • Dr. Shiv Kumar, BIF • Shri Pankaj Bansal, NIXI
11	**Knowledge Committee**	• **Chair** - Shri Satish Babu, inSIG • Smt. Ahana Lakshmi • Shri Anand R Nair, inSIG • Smt. Deepti Menon, CDAC • Smt. Maitreyee Manglurkar, inSIG • Smt. Mini Ulanat, CUSAT • Shri Rishab Dhaniya, NIXI • Shri S BalaKrishnan, inSIG • Smt. Tilottama Goswami, inSIG