Committee: Security Council
Issue: Promoting trust and confidence in ICTs through international cooperation
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Introduction

As the years go by and humanity continues its constant pursuit of progress, technology has in turn expanded its role in society at large. Computers are found in most households, smartphones have quickly become a necessity in the developed world and the cloud is being adopted everywhere it can. Technological developments around the world have heralded in an age of extreme interconnectedness, opening doors for countless advances in every facet of society. Despite this fact, there is a noticeable disparity in adoption of new technologies between developed and developing nations. In some instances, the failure to adopt stems simply from a lack of ability to do so. In other cases, however, there is simply not enough confidence in the benefits of information and communication technologies to cause a raise in demand for them. By focusing on international cooperation in the field of ICTs, it is possible for the nations of the world to witness the effects that they have on society and thereby foster growth in the industry on a global scale, allowing for unprecedented levels of societal development.

A. Key Words (Definitions)

ICT: The term Information and Communications Technology (ICT) refers to technologies that serve the purposes of unifying different means of communications (namely telecommunications and computers) as well as facilitating the storage, transmission, accessibility and manipulation of data and information.

Internet: A global system of interconnected computer networks allowing for communication between multiple seperate computers via the use of the TCP/IP suite.

TCP/IP Suite: Stands for “Transmission Control Protocol/Internet Protocol. This suite is a set of guidelines through which communications are made over the Internet. It governs how information is packaged before being sent off to another computer, and its standardized nature ensures that the Internet is able to function in a universal manner.

Web: A means through which users of the internet can access organized banks of data via the use of URLs and hypertext. The Web is typically accessed through the use of an Internet browser and a search engine.

Internet of Things: A system by which multiple computing devices can communicate with each other without the need for human involvement in the process. The most prominent example of the IoT in action is in the concept of the smart home, in which appliances, lighting, security cameras, heating and entertainment centers are all controlled by a single device such as a smartphone or tablet.

Overview of the Issue

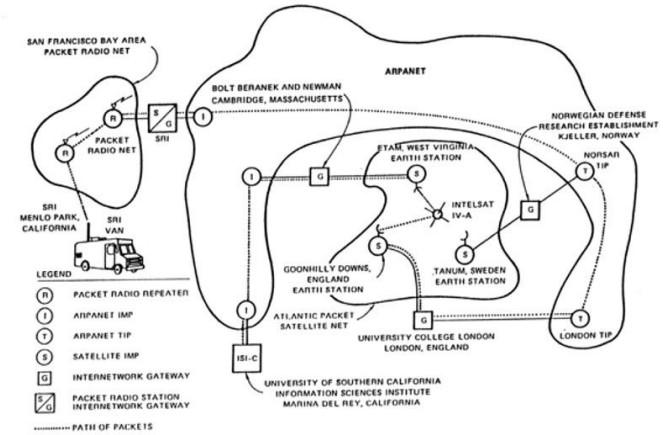
A. History

I. The First Computers

The history of ICTs begins with the adoption of and research into computers by the militaries of the Allied nations of World War II following the end of the war. The 1950s marked the first major milestone in the adoption of ICTs as the creation of the UNIVAC I by scientists John Eckert and John Mauchly. The mainframe computer system that served as the basis for this computer was widely adopted by large corporations and government organizations for use in mass information storage. The creation of the minicomputer in 1975 opened up a market for personal computers, of which IBM released the first in 1981. The advent of personal computing made the use of computers amongst the general public a widespread phenomena, initiating a massive surge in the development of ICTs.

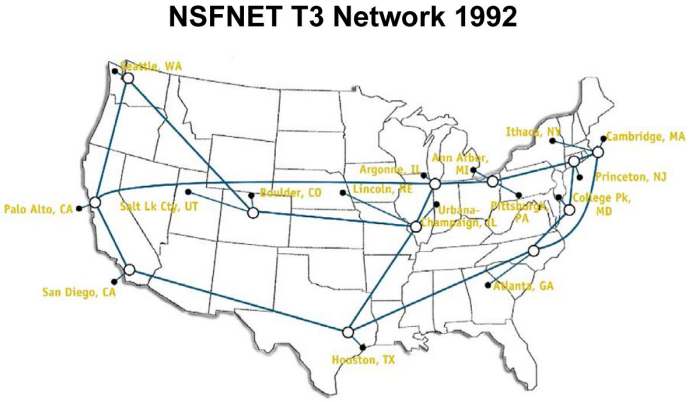
II. The Internet

The Internet has its roots in the discussion of the creation of a system of communication between computers in the late 1940s by the people commonly referred to as “internet pioneers”. The first attempts at actually creating this system were seen in the creation of the ARPANET by the Advanced Research Projects Agency in the late 1960s. The ARPANET, which continued to be built upon into the 70s, made use of a technology called the TCP/IP Suite.



International use of the ARPANET began in 1973 when it was connected to the Norwegian Seismic Array (NORSAR). This connection allowed for the further connection of ARPANET to the NPL's own network stationed in London. Later that year, electrical engineer Bob Kahn worked with Vinton Cerf to connect the ARPANET with the PRNET and SATNET, creating the Transmission Control Protocol (TCP) in order to do so. These networks would serve as major components for what would eventually become the internet.

Almost a decade later, in 1981, the National Science Foundation in the US created the Computer Science Network, or CSNET. This network's main goal was to allow for computers without direct access to the ARPANET to be able to connect to it through commercial networks such as Telenet. This was made possible via the utilization of sites with access to the ARPANET as gateways through which non-ARPANET users could connect to those using the ARPANET. The CSNET was eventually succeeded by the National Science Foundation Network (NSFNET), which became the backbone for the modern internet.



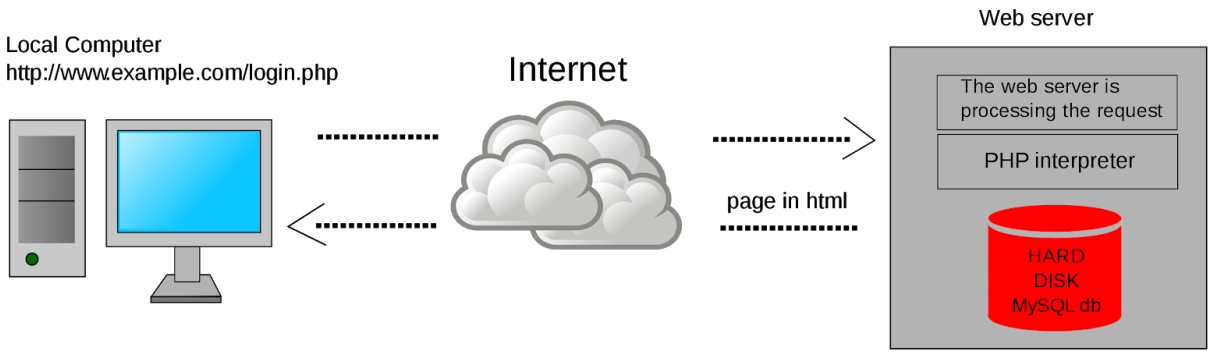
The NSFNET remained exclusively available to government agencies and select universities until 1989, when the first Internet service provider, known as "The World", made access to the ARPANET available to the consumer market. Soon after this, in 1990, the ARPANET was

decommissioned and replaced with the combination of the NSFNET and Federal Internet Exchange, which spread on a global scale due to their standardized protocols. The Internet allowed users to send and receive data from any other user connected to the network, thus allowing for interconnected communications and data management on unprecedented levels. This interconnectedness would be expanded upon soon after by the invention of the World Wide Web.

III. The World Wide Web

In 1989, computer scientist and CERN employee Tim Berners-Lee invented the World Wide Web (WWW). In 1990 he created a browser that could be used to access the WWW, and throughout the next year it was made available to researchers and consumers outside of CERN.

The WWW was built as an organized storage place for information to be accessed on the internet. Prior to the WWW, information shared via the internet saw a single transfer between the sender and the receiver, after which the information was only accessible on the computers involved in the exchange. Through the Web, information was stored in such a way that it could be accessed by anyone with access to the internet without the need for it to be manually sent to them. This was made possible by a combination of different technologies. First, files and data submitted to the Web would be stored on data servers and made accessible via a client-server connection over the internet. This connection would be made via the use of a web browser, a piece of software making use of HyperText Markup Language (HTML) as a standardized formatting language, Hypertext Transfer Protocol (HTTP) to initiate the sharing of data between the client and server, and a Uniform Resource Identifier (URI, commonly referred to as URL) as a common address through which the desired information could be found.



Currently, three versions of the Web have been discussed and categorized. Web 1.0 is characterised by the fact that it functions in a mode referred to as “read-only”. As the name implies, this mode of web interactions only allows the person accessing a webpage to read said webpage, leaving them unable to input or edit any information on the page. This version of the Web allowed website owners to use their pages as information hubs, giving those who visit them access to whatever info the owner wished for them to see. One popular use of Web 1.0 was for e-commerce catalogues, allowing consumers to see what a store was offering for purchase

without having direct access to said store. The next version of the web, Web 2.0, is characterised by its "read-write" functionality. Unlike Web 1.0, Web 2.0 enables users to interact with websites. This development has allowed for the creation of social media websites like Facebook and YouTube, as well as general web interactivity as seen on sites such as Google Docs. Web 2.0 sites tend to run at much faster speeds, and make use of more complex computer languages such as Javascript. Web 3.0, the version of the Web currently being developed, is characterised by its status as "read-write-execute". Web 3.0 browsing will allow for users to be served the information they are looking for in a more intelligent manner than is currently possible via the use of semantic markup. Web services utilizing application programming interfaces (APIs) allow for interaction between different websites, thereby giving the user a more interconnected Web experience.

B. Impacts

Across the board, ICT adoption has correlated with plentiful benefits for all parties involved. One instance where this can be seen is in the field of education. ICTs allow for the learning process of students to rely more on said students rather than on their teachers. Such a change is widely believed to improve learning gains for students, as they will be able to approach any subject in a manner that best fits their individual learning needs. Also, the ability for teachers and students to connect over large distances allows learning to take place outside of school at a similar level to how it does so in school. Educational ICT use has also been noted to positively impact students' motivation to learn. Finally, the use of ICTs in the classroom gives students the ability to familiarize themselves with technologies that they'll likely use in their adult lives to work, making their adoption in schools fundamental to preparing children for life.

ICTs also have a major impact on business and the economy. In their 2015 study on the effects of ICTs on the development of LMICs (Lower-middle-income Countries), the EuropeanParliament concluded that ICTs have a positive role in the economic development of a country, both in growth related to the ICT industry as well as growth in sectors significantly aided by ICT usage. One such industry is agriculture, where the capabilities of ICTs to record farm data, predict and optimize yield outcomes, facilitate the systematic elimination of weeds and pests from crops, and to view the state of national and international markets allows for farmers to increase productivity to a massive degree. In general, businesses have a large potential to benefit from the implementation of ICTs. Through their utilizations, ICTs allow for greater communication between members of a company. Employees can collaborate much more effectively. Corporate bureaucracy is made more efficient due to the facilitation of instantaneous long-distance communications. The implementation of e-commerce also allows for companies to expand their reach much further than they would otherwise have been able to, uncovering untapped markets for companies of all sizes to cater to. For all of these reasons, international trade is made much more efficient and reliable, opening the gate for unprecedented levels of economic globalisation.

ICTs also have the potential to massively impact the social sector. One way in which this is done is through the use of digital government. Through the utilization of the Web, governments are able to conglomerate their services into one conveniently accessible location. By doing this, governments give their citizens equitable and efficient access to services that are often inaccessible outside of cyberspace. This fosters confidence in the government, thus improving a nation's political capital. Another social service affected by ICT adoption is health services. The implementation of ICTs in healthcare allows for improvements in the accuracy of medical results, a more efficient and thus more effective system for testing and treatment, and a greater capacity for keeping records of patients' health. On top of these things, ICTs also provide opportunities for the disabled to integrate into society in ways that were previously impossible.

As one can see, ICTs can have many positive effects on the society utilizing them, thus creating a clear incentive to pursue their adoption and development.

C. Central Issue

Despite their benefits, ICTs have been subject to fear and distrust from the general public. This can mostly be attributed to the fact that many nations and businesses have begun to mandate their adoption. The fast rate at which ICTs are being pushed upon the public, both for work purposes like document collaboration, and for everyday purposes such as banking and ticket purchasing, has led to a disdain for new technologies. This can be seen particularly in people over the age of 60, whose previous methods of completing everyday tasks are quickly being upended and replaced with new, foreign means of completing the same tasks.

Another place where troubles have been seen with the adoption of ICTs is in developing countries. Because these nations have often not been involved with the gradual development of technology up until now, the people residing within them are often being exposed to ICTs with no prior knowledge of how to best make use of them. This causes an immediate negation of the potential benefits of ICT adoption as, although the issue can be remedied through education, the ability to take advantage of advanced technologies is a requirement for the full potential of said technologies to be reached. In fact, an initial lack of knowledge on the use of ICTs combined with the rapid rate at which they are being forced into adoption can ultimately be detrimental, as a lack of alternative means of productivity could leave uneducated workers unable to perform even the most basic tasks assigned to them.

If the full potential of ICTs is to be reached around the globe, issues of distrust and lack of confidence in their workings must be addressed by any means possible, so long as said means don't push the public even further against their further development and adoption.

Case Studies

A. Centre for Agricultural and Rural Cooperation (CTA)

The Centre for Agricultural and Rural Cooperation has involved itselfheavily in the implementation of ICTs for use in agriculture. In 2014 the CTA launched a €400,000 project regarding the development of delivery models for ICTs to be used for agricultural purposes. Set to last 14 months, the project was meant to research the effects of ICTs on agriculture, to enable farmers to utilize the most efficient systems possible and to educate farmers on how to utilize ICTs to their fullest potential. The program was then implemented in the countries of Burkina Faso, Côte d'Ivoire, Ghana, Mali, Sudan, Trinidad and Tobago, and Uganda as a test of its full..

One country where positive results were seen was Sudan, where crop yields were quadrupled due to utilization of SMS messaging. The region of Sudan where the tests were done, land along the Gezira Irrigation Scheme, had been declining in productivity in the years leading up to the study. Implemented by Netherlands-based NGO eLEAF, the pilot project consisted of 44 farms along the Gezira. The study was based around the use of SMS to inform each farm of how long the irrigation of their farms should continue, beginning with an analysis of the meteorological data collected by local weather stations. By listening to the directions given by the messages, farmers began waiting less time to irrigate their crops than they had previously r, ultimately leading to, in one farmer's case, a near four times increase in crop yields. On top of this, the fact that the farmers irrigated their crops more often led to them decreasing the amount of water used per instance of irrigation, resulting in a net decrease in water usage overall.

Another country where this has been seen is in Burkina Faso, where a web platform was created to support agricultural advocacy. The NGO Yam Pukri, in collaboration with the CTA, has worked to create Agripol, a web platform where farmers could work to advocate for more inclusive agricultural policies. The platform, which has over 300,000 members, has ultimately had a positive effect on the agricultural community of Burkina Faso. One way that it has done so is by creating an outlet for crops from different regions to be sold in the provincial capital of Bam, a city that, prior to the program, had a very narrow range of markets for farmers to sell in. Agripol has also helped in promoting locally grown crops. Historically, 58% of rice consumed in Burkina Faso has been imported, with figures even increasing as high as 70% in difficult seasons. Through Agripol advocacy, many groups around the country have decided to promote domestic crops by setting a goal for 50% of food budgets being spent on domestically grown rice. In doing this, Yam Pukri hopes to spark domestic economic growth and ultimately help bolster the agriculture industry in Burkina Faso.

B. European Union (EU)

The European Union, one of the most successful international collaboratory organizations in the world, has openly regarded ICTs as being a very important aspect of modern development, stating that they are a field filled with untapped potential that can be attained by the establishment of a proper technological foundation. The EU's focus within the field of ICTs is

towards the bridging of the current technological divide between developed and developing nations, as many in the latter category currently lack access to the resources necessary for an ICT-based society to function, such as widespread access to high-speed internet.

One way in which they plan on doing this is through their ICT-Leadership in Enabling and Industrial Technologies (LEIT) Work Programme, which aims to create a framework by which European nations can develop ICTs domestically. The programme does this by focusing on six main activities. The first of these is the creation of new generations of technological components and software. The next is the pursuit of advanced computing. After that is the development of Future Internet, followed by the creation of content technologies and information management systems. It also draws a focus towards the fields of robotics and micro/nano technologies. Another aspect of the programme is its focus on the fields of cyber security and the Internet of Things.

Another instance of the EU's involvement in the development of ICTs is in the European Commission's Digital4Development strategy. The strategy focuses on the support of digital technologies and services across the EU, placing emphasis on widespread access to an affordable, secure internet connection, the teaching of technology skills, the bolstering of tech entrepreneurship, as well as future integration of ICTs into the development of society. The strategy intended to be utilized within other continents, the most prominent of which being Africa.

The D4D strategy within Africa has been pursued via the utilization of the European Union-African Union Digital Economy Task Force (DETF). This cooperation began with an agreement between the EU and AU called the Africa-Europe Alliance for Sustainable Investments and Jobs. In order to create jobs within Africa, the DETF intends to work within numerous different areas. One of these is increasing investment in the tech sector across the African continent. To do this, the task force plans to study the ways in which different forms of investment would interact with different reformations of technological infrastructure. Along with this, the DETF intends to explore different structural reforms, different forms of investment, as well as different policies on market development so as not to disrupt the kindling of tech start-ups.

C. US-Russia Cooperation on ICT Security

Under the Obama Administration, the United States formally began to cooperate with the Russian Federation on the pursuit of security in the field of ICTs. One such way that it did this was through the creation of a work group whose purpose was the assessment of potential threats in the realm of ICTs. The group's jurisdiction existed through the 2009 Bilateral Presidential Commission, and its research into cyber-security threats allowed it to develop collaborative measures towards patching any breaches in security.

Another focus of this cooperative pact was on the improvement of transparency with the hopes of preventing misunderstandings that could ultimately lead to political turmoil. One way that this was done was through the integration of shared threat indicators between emergency readiness teams in both countries. By exchanging domestic information pertaining to malware and other such cyber-security threats, the two nations were able to increase each other's readiness for any cyber emergencies, improving national security to a degree not possible without international cooperation.

Also in the interest of improved transparency, the two countries decided to pursue greater means of communication between each other. One way that this was done was through the utilization of the already existing Nuclear Risk Reduction Centers to exchange information on cyber security concerns that may have had an effect on the national level. Another way that this was achieved was through the establishment of a direct communication line between the U.S. Cybersecurity Coordinator and the Russian Deputy Secretary of the Security Council. Through these two communicatory pr0grams, the two countries hoped to be able to avoid any misunderstandings that could lead to the escalation of tensions between them, ultimately reducing the risk of a potentially devastating war breaking out.

Possible Solutions

A necessary step towards efficient international cooperation is the creation of different international coalitions with the purpose of promoting trust in ICTs. Such coalitions have been seen in the past, such as that between the African Union and European Union in 2018, as well as the agreement made between Japan and Saudi Arabia in 2019. Coalitions have the unique effect of providing a formal, organized forum through which all involved parties can discuss the best means of addressing any given issue. By creating cooperative unions between developed and developing nations, the latter will be better able to integrate ICTs into their own economies, as they will be able to inform the former as to what areas they are most lacking in and which they are best suited to sustain development in. On top of this, regional unions allow for neighboring countries to build off of each other's own developments in order to progress at a much faster rate towards the adoption of ICTs for all of their potential applications.

Another way that trust can be promoted in ICTs is through the pursuit of improvements in cyber security. One of the reasons that many people are reluctant to adopt ICTs is due to the perception that they are inherently more dangerous to use than existing alternatives. For example, online banking is often avoided by those in older generations due to a belief that there is a greater potential for their savings to be stolen by a hacker than by a robber in a physical chain. By improving cyber security, countries can effectively remove one of the main contributors to distrust in ICTs, ultimately improving confidence in their widespread adoption.

Confidence in ICT adoption can also be attained through the implementation of technology education programs within countries known to have low digital literacy rates. NGOs such as

Digital Opportunity Trust, Yam Pukri, ICT for Social Good, and many others have already begun to pursue this space. However, without financial backing, these NGOs are generally unable to achieve their goals on a large scale. By focusing on supporting educational pursuits, countries can improve digital literacy rates at a much greater rate than they do currently. This will have multiple beneficial effects on the country in which it occurs. For example, integration of ICTs into the education of children allows countries to not only build a workforce that is able to properly utilize beneficial technologies, but also to build trust in ICTs within their citizens from an early age. Another potential benefit is seen from the digital education of adults, which bridges one of the barriers that developing countries have faced when attempted to yield benefits from ICT adoption.

Main International Actors

A. Main NGOs

Digital Opportunity Trust:

Through their Youth Leadership Program, Digital Opportunity Trust (DOT) has worked to utilize the youth of various regions around the world to educate the people of their communities as to the workings of various forms of technology. Through doing this, DOT helps to prepare communities that had not yet been able to experience modern technology for a world in which every facet of life revolves around it.

International Fund for Agricultural Development:

The International Fund for Agricultural Development in 2017 began to request funds to direct towards innovations in ICTs for use in agriculture. Their hopes in doing this were to create a productive and sustainable agricultural sector in developing countries that had yet to implement modern technologies.

ICT for Social Good:

ICT for Social Good is a grant funded and organized by six different groups. Its aim is to both fund innovators in developing areas that would otherwise be unable to support their creative processes, as well as to bring said innovators to the attention of local developers. Taking the form of a competition, innovators who create interesting new developments in the space of ICTs could be awarded up to 12,000 euros in grant money, as well as being provided with opportunities to further develop their projects via research center partnerships.

SchoolNET Zambia:

SchoolNET Zambia, as its name suggests, is an NGO whose main focus is on the adoption of ICTs in Zambia. The group works with local educators to adopt and implement ICTs into their curriculum, both enhancing childrens' learning opportunities as well as introducing them to technologies that will likely prove to be useful in their adult lives. The group also monitors the effects of ICTs on education in the institutions they've been adopted in. Their overall goal is to provide the youth of Zambia with the opportunity to develop skills that will allow them to integrate smoothly into the global economy as it continues to become increasingly grounded in ICTs.

B. Countries

USA:

The United States stands as one of the most ICT-developed nations in the world, scoring an ICT Development Index ranking of 16th in 2017, and ranking 1st regionally in 2016. They are also the number one spender on ICTs, making them extremely prominent in the continuation of innovations in them. Their spot as the largest GDP in the world places them in a key position for pushing the development of ICTs in developing countries, as they have the capacity and an incentive to heavily invest into ICT-based ventures all around the planet.

UK:

The UK is the second highest spender on ICTs in the world, and they are ranked 5th on the IDI. Roughly $160 Billion dollars of the UK's economy consisted of ICTs in 2016, indicating a 20% increase during the five years following 2011. In 2018, the government revealed a $1.3 billion dollar deal revolving around the development of artificial intelligence, making them one of the most invested nations in this field. These facts show that the UK is heavily invested in the development of ICTs, making them a key player in promoting their adoption in other countries.

China:

Despite their low rank of 80 on the IDI in 2017, China's involvement in ICT development is very significant. According to the IDC, the ICT market is expected to constitute for 55% of the country's total GDP by 2021, making it worth roughly $8.1 trillion. A large reason for their current growth is the fact that they have recently become dominant in the global market for sub-sectors of technology such as smartphones, computers, semiconductors, and cloud computing. It is thought that once demand in these sectors lull due to a dwindling supply of first-time ICT purchasers, Chinese growth will start to dwindle as well. In order to counter this, China adopted the policy of "informatization" in 2006. "Informatization" refers to the development and adoption of ICTs in all facets of life, including the national economy,

government, education, health care, and public safety. The policy also demands the continued expansion and optimization of information infrastructure, ultimately allowing the people of the country to better utilize ICTs.

Japan:

Japan was ranked 10th on the IDI in 2017, indicating that they are heavily invested in ICTs. The nation is home to some of the largest companies in the sector, including Sony, Toshiba, and Fujitsu. One area that the nation stands out in is e-commerce, a sector in which they are ranked 4th in the world. On top of that, ICTs have seen heavy adoption in most areas of urban life. Japan, through the EU-Japan Centre for Industrial Cooperation, has partnered with the EU on numerous occasions to further innovation in the field of ICTs. Another instance of international cooperation involving the nation took place in June of 2019, when it signed a deal with Saudi Arabia to focus on development of human capital and digital infrastructure, as well as supporting the ICT industry via investment into it.

Russia:

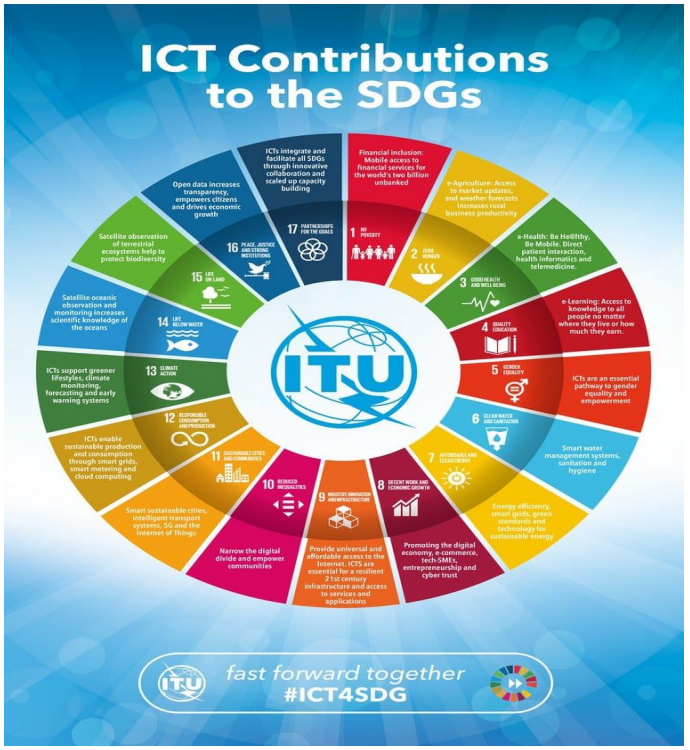
Ranked 45th for 2017's IDI, Russia has fallen somewhat behind in the development of ICTs. Due to the collapse of the Soviet Union's correlation with the release of the Internet to the public, Russia's involvement in the market was delayed. When they did enter, it was mainly through start-up companies trying to find their footing in the new economy of the Russian Federation. Because of this, these companies failed to find a niche in hardware development and instead turned to software. However, roughly 90% of all software in the nation at the time was pirated, stifling growth in that sector as well. Today, Russia has published their policy on ICTs to their official website. This policy consists of four areas: e-governance, telecommunications, the IT industry, and its content and media sector. Generally, Russia's goal is to push for further adoption of ICTs in all of these areas, as well as further development of the ICT industry as a whole.

India:

In recent years, India has begun to invest heavily into domestic development, especially in tech fields. In 2017 they were ranked by the UN as the top exporter of ICT services. On top of that, they have consistently been rated highly in the rate of graduates of science and technology fields, making them very equipped to contribute to the further development of ICTs. The country has cooperated with the United States in the past to bolster the ICT markets of each nation, allowing them to better facilitate innovations in the market. On top of this, India has worked domestically to implement ITCs into education throughout the country. Despite its prominent role in global ICT development, India was ranked extremely low on the 2017 IDI, coming in 134th. This is because most of the undeveloped rural territory of the country has yet to develop enough to facilitate widespread adoption of ICTs. The internet is only recently being adopted on a broad

scale here, and considering how much room the country has to grow in this regard, it currently has some of the most potential for growth in the ICT field.

C. UN Involvement



The United Nations has contributed heavily to the widespread adoption of ICTs on an international scale. One example of this is the creation of the ICT Development Index by the International Telecommunications Union (ITU). The IDI's purpose is to keep track of the growth of ICT adoption in all countries, ranking each based on numerous criteria. This index allows for countries to understand where they stand compared to the other nations of the world, thus bolstering desires to further develop the sector. The ITU has also worked to contribute to all 17 Sustainable Development Goals. In October of 2018, they released an article specifically detailing how they can continue to contribute to the further pursuit of the SDGs by utilizing ICTs. Another UN Agency that has involved itself in ICTs is the UN Department of Economic and Social Affairs. One way in which they've involved themselves is by pushing for the adoption of digital government, as they believe this to create a form of governance in which public services are equitably and efficiently delivered to all people in a transparent manner that ultimately builds public trust.

Guidelines to Research

When researching this topic, there are a number of questions that delegates should keep in mind to best refine their proposed solutions to promoting trust in ICTs:

A. How do countries differ in their current implementation of ICTs? How can these disparities be bridged?
B. What are some causes for doubt in ICTs? How can these be countered to improve rates of adoption?
C. What are some roadblocks to beginning the implementation of ICTs in developing countries?

D. What policies have been used in the past in regards to ICT adoption? How can these examples be learned from to help with future adoption.
E. How do strain relationships between different nations stifle the growth of their domestic ICT market? How can these relations be improved?

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