Internet Accessibility in the World

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Introduction

The unit of analysis for this case study is accessibility to the internet and will briefly look at the accessibility to high-speed internet around the world. This study will focus on the internet accessibility of Asia, the Americas, Europe, and Africa, the accessibility of their citizens, as well as certain relevant country statistics.

One of the components of accessibility issues around the world are geography and cost. Although the geography of many nations have uniquely hindered progress on many programs to expand internet access, it is usually accompanied by the cost of laying the lines and constructing the physical components of connecting people to the internet. Most of those without an internet connection throughout the world suffer from bottoms side of a cost-benefit decision by major companies or their federal government. The remote fishing villages and rural farm lands of most countries, with otherwise universal internet access, suffer the most because it is deemed not profitable enough to lay cable down to reach them.

Government policy has addressed the issue of remote areas gaining internet access resolved. In many Asian countries there are initiatives to connect every household. However, this is not the case for many around the world. Government policy is one of the major reason for the United States to not have the vast broadband connections seen in other parts of the world, many cities should be connected to high-speed internet, although they aren't, and until they are the government will not look towards rural communities. The U.S. government has taken a step-back in regards to high-speed internet and connections reaching those in more remote parts of the country. Leaving the access to internet up to the market, which has not progressed the nation to the level of universally connected has some thought it would.

Relevant Context

Copper wire was the first form of mass telecommunication transfers, it was laid down next railroads, or integrated into the already established infrastructure to get information from one location to another. Copper wires have a limitation when transferring data, the most widely used wire in modern times is either a Cat 5 or Cat 6 copper cable, Cat 5 can transmit 100mb/s and Cat 6 can transmit 1GB/s at max bandwidth (Mahan, 2022). These cables have become obsolete in most of the modern world, only used for "the last mile" connections to households. The alternative for copper cables is usually coaxial cables as they are already in use by cable companies and can transmit the same data as a copper cable. The most widely used cable in information communication infrastructure is the fiber optic cable. It is able to carry 100GB/s of data and can be future proofed easier by Internet Service Providers (Enterprise, 2019). ISPs around the world have been future proofing fiber optic networks by laying down cables that are not in use yet but can be "turned on" when needed. Although fiber optic cables are most commonly used to transfer large quantities of data from one location to another, most cables that connect directly to the home are still copper cables as the average users computer can interact with the copper cable signals better.

The main focus of internet accessibility around the world has been in Africa. Wealthier African countries, such as Egypt have partnered with foreign interest to implement plans to connect more of the African populous to the internet (Rapaport, 2021). China and Japan are two of those foreign interest, both have invested in under-sea cables that will make another connection from Asia to the east coast of Africa.

As previously mentioned, The United States should be more connected than it is. South Korea has a nearly 100% connection rate for its populous. However, the main difference, other

then physical geography, between the two countries is public policy. South Korea's policy makers have aggressively pushed for upgraded broadband infrastructure and more connections to even its most remote villages. The policies have come at the dismay of the major providers. The U.S. has approached broadband policy making a different way. The U.S. has opted to allow the market to decide if fiber optic and high speed internet will prevail and pave the way for more internet access and improved access across the U.S, it has not (Collins, 2021). Many places around the U.S, and the world, don't have a high-speed internet connection or any connection at all. Local monopolies and cost-benefit analysis have kept those in the more remote parts of the country from gaining access to a broadband connection.

One of the biggest issues regarding internet accessibility in the world is pricing for the connection. In Japan, the internet providers will charge for the service and then the user will also typically be charged for the use of the cable as well, as they are typically not owned by the same company (Finn, 2022). There are bundles available but the user is still typically "double" charged. Until as recently as 2010, many African citizens could not afford an internet connection, as many of the coastal countries are connected. Although, prices have dropped in recent year but people are still using a significant portion of their income on internet connections..

Internet Accessibility is a growing issue in a digital world. People around the world deserve to be connected to the internet for a fair price. The European Union is the leader in internet accessibility in the world in the modern age, however, there is still a lot of work to be done, especially in the more geographically distance locations on every continent in the world. I would also like to note that Africa is mainly spoken as a whole as most efforts for internet connectivity are in union with many African countries working together through the African

Union, as well as foreign investments to help incur the cost of laying new undersea cables and connecting remote villages to the internet through satellite services.

Case Summary

Internet accessibility is an issue throughout the world. Many people do not have adequate access to internet or access at all. This issue is being examined because the world is becoming more digital, and many countries that are not actively digitizing and connecting their citizens to the internet will fall behind politically, economically, and socially. Countries like South Korea boasts internet connections for approximately 90 percent of its population (*Internet in South Korea,* 2022), where other countries such as Uganda only had 50 households reported being connected to the internet as of 2019 (*Bringing Africa up to high speed*, 2022). Countries like Uganda fail to have a connection to the internet, and therefore the world.

Geography and geographic location of a country and household respectively, are two of the main issues regarding internet accessibility. Rural farmlands, mountains, and remote villages are the most likely candidates to not have an internet connection, or at best have a poor one. Some countries, like South Korea, have a plan to connect these remote places to the internet and give them a quality connection in the coming years (Yonhap, 2020). However, That is not the case for a majority of the world. The European Union is home to over 445 million people (*Life in the EU*, 2022) and boasts a GDP of 14.5 trillion dollars (*Life in the EU*, 2022) yet only 37.1% of the low-density area households are connected to a highspeed connection (Eng.LSM.lv, 2022). The United States also suffers from this issue, many farmlands and remote mountainous regions lack a basic internet connection. The biggest factor at play is the pure size of the country, at 3.1 million sq miles (Geographyrealm, 2022) there is a lot of ground to cover and while a most of the country is connected to some form of internet through copper cables connected when the

railroads were built. These connections are typically not very reliable by today's standards. Countries such as South Korea are significantly smaller then the U.S (38 thousand sq miles (*Internet in South Korea*, 2022)) therefore it is simpler and less costly to upgrade and build new internet infrastructure.

Policies and foreign interests are another factor that play a role in internet access across the world. Unsurprisingly different countries around the world handle policymaking and foreign interest in regards to internet accessibility. The U.S. has been to noted to take a more "hands-off" approach to policies and has been scrutinized for believing the market will decide whether or not internet for all is a worthy cause (Collins, 2021). The market as leaned towards profits and many Americans still go day-to-day with an almost unusable internet connection. In South Korea, after the Korean war the government aggressively passed legislation to gain a universal broadband status (Laherran, 2020). South Korea also plans to continue to connect even their most remote citizens through the next decade.

Geography, politics, and foreign interests show the pattern of internet accessibility in a modern world. In a growing digital world it seems that those with less access to internet are those whose have been determined by corporations to not be worth the cost of connecting them. There have been efforts in many countries in recent years to connect people to the internet. South America in particular has had a large increase in usage. Chile in particular has had a 43% increase in connectivity from 2010 to 2020 (*Individuals using the internet (% of population)*, chile 2022). Chile has been a leader in South America pushing connectivity for all, in Colombia however, just over 50% of the country has a reliable internet connection. The world leader for passing legislation to connect citizens to a reliable internet connection is South Korea. After the Korean war the country passed many bills in the early 1990's to replace the already existing

copper cable grid (Laherran, 2020). By the early 2000's the country reached the universal fiber status. The success of internet connections in South Korea has also been due to the federal government blocking mergers and acquisitions that would cause monopolies in the telecom industry (Laherran, 2020). Contrary to this, In the United States, local governments typically are left to fend for themselves when it comes to handling monopolies with internet providers in their district. Access to internet around the world is a direct result to the level of government that has been tasked with the responsibility of providing internet for it's citizens as well as creating a fair market for competition and affordable pricing.

Pricing and Monopolies are the biggest issue for internet accessibility for those that have a reliable connection. According to *Salary in Chile* the average Chilean salary is approximately $6.8 per hour and for the Chilean working week of 45 hours, resulting in a yearly salary of $15,840. Chile is the leader of South America in wages, and yet internet prices are on average $30 a month, or approximately $360 a year, for an internet connection. The average cost of living for a single person (not including rent) is about $615 a month, 4.5% of the monthly income will go to internet access. Four companies make up 80% of the market for internet access in Chile: VTR, Movistar, Entel, and GTD Manquehue (Expat Focus, 2015). These companies drive prices up and with the covid-19 pandemic causing inflation rises around the world prices tend to rise. As previously mentioned, the United States federal government has taken a step back in regard to regulating the free market with internet accessibility. Local governments have had to take on the matter within their districts, According to a *Fast Company* article, Comcast has a monopoly over 47 million Americans. Only having one choice when it comes to internet provider typically means higher costs are associated, as well users get trapped when prices increase beyond their means, as there is no local competition to even out the prices. Japan has

largely avoided this problem, however, as the cable internet service comes through the cable from the provider, the cable that is used is not always owned by the same companies, which leads to bundles being sold but also being limited by what contracts the provider company has with the cable owning company (Finn, 2022). The accessibility of internet a country has can be directly related to the countries rank on the United Nations International Telecommunications Develop Index (ICT), which ranks the countries throughout the world on the different factors of their telecommunications networks. South Korea is the number one ranked country, followed by many Nordic countries and smaller European countries such as Switzerland and Luxembourg. The only other Asian country in the top 10 is Hong Kong. Japan is 11th and the United States falls in 14th (The ICT development index 2022). The index also relates to the size of a country and the population of it. Many of the top countries listed are small and densely populated, disregarding the Nordic countries as they are larger but have a higher density of the population in the southern parts of the countries.

The overall effect the government, companies, and geography have on internet accessibility in the world can be frightening. However, there is good when business interest align to benefit the consumer. Africa has seen a lot of foreign investments in regards to connecting the coastal countries to the internet as it is a relatively untapped market. Facebook, China Mobile International and Telecom Egypt all have a vested interest in connecting African countries with a more reliable internet service. The three companies have announced a partnership to lay a 37,000 km long sea cable to connect 16 countries in 21 landing points (Rapaport, 2021). Africa is the main target for many foreign interests in recent years and will be for many to come, until the whole continent is connected to the internet there is money to be made by telecom companies.

After looking into policy, geography, politics, pricing, and monopolies, the amount of internet accessibility that is achieved in a country is reliant on how invested the federal government is into making sure the connections are built and are reliable. The geography of users in a country plays a huge role in how companies and government decide if they should connect those in remote areas to a fast and reliable internet connection. Monopolies use their advantage to raise prices for customers who have no other options for a similar quality level of service. Local government tend not to have the resources or sufficient power to disband the monopolies or draw in more competition to their area.

Discussion

Countries looking to develop a plan to connect the majority of their citizens with an internet connection should look around the world to determine what the best method will be. Historically, Federal policy has made the most impact on giving citizens access to the internet. South Korea is the best example of this. The Federal government taking charge needs to be accompanied by aggressive actions against monopolies, acquisitions, and mergers to keep options available for users. Leaving this to local government puts unnecessary strain on already limited resources. Local governments typically have less power to fight monopolies, acquisitions, and mergers compared to the federal government.

Internet access should be considered a utility provided by the government. Such as electricity and water, the internet should be a connection that comes with every household, that is also subsidized by the government. Alongside being a utility, an internet connection should be a right throughout the free world. With the world digitizing and the internet playing an increasing role in our society, having an internet connection in today's world could be the difference between making a living wage and not. The EU is pushing towards universal internet and has

made major advancements in connecting the rural parts of the union together, some of the smaller nations have reached close to 100% connectivity, Malta being the only that has (Eng.LSM.lv, 2022). This proves that with the right policy, and federal government action, internet for all can be achieved.

The main obstacle for internet accessibility in developing countries is the cost of internet. If a firm or person was to research into internet access or wanted to start providing an internet service, I think looking at countries, such as the U.S., where local monopolies can hold customers hostage at whatever price they think they can get away with would be a good place to start. For anyone else who would like to research further into the issue of internet access, in the coming decades many countries around the world have made announcements to advance the connection strength and physical connections to all.

Conclusions

Internet accessibility around the world is directly linked to government policy, geography, pricing, and multiple other factors. Pricing is one of the biggest limitations to developing nations as many people can not afford to connect to a reliable internet connection. Those in rural areas are at a disadvantage when it comes to having a reliable connection, therefore, countries that are advancing connections to rural areas will be ahead of the rest of the world. African, and South American countries are leading the way for developing nations to connect it's citizens to the internet. Progressing towards an internet connection for all will result in lower prices, better connections and reliable internet service.

The limitations of the study about internet accessibility is time and local information. While many companies and countries will try to boast their connectivity rates and pricing, what

the reality is may be hard to find unless physically present in the location of service. Also, many plans to expand internet connectivity project completion years into the future, and plans fail or are delayed many times. Delays and failures can dissuade companies and countries from progressing internet connectivity.

Future research I would like to do into this area would be the solutions on how companies and countries are connecting the extremely remote people of their countries. Internet connections are costly to run, and running a physical cable to villages or houses in the extreme deserts or mountains. Internet Accessibility around the world will only increase in time, and many countries are pushing for a reliable connection to all.

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