Exploring the Need for and Barriers to Broadband in California

A Comprehensive Examination

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Abstract

of

EXPLORING THE NEED FOR AND BARRIERS TO BROADBAND IN CALIFORNIA

by

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Introduction

This document begins with a call to examine the need for broadband expansion in California, citing the high number of children without access to proper broadband and the 945,000 people in California without broadband at all. With the need for broadband expansion established, with attention paid to the weaknesses exposed by the COVID-19 pandemic, the analysis then explains how the many stakeholders play a role in broadband, and then mentions the three lenses that the analysis will use, economic, organizational theory, and political science.

Broadband Stakeholders' & Interests Explained

Following the introduction, I take an in depth look at the many varied stakeholders that have interests in broadband and explain why they take the stance that they do and how to best consider their needs and interests moving forward. These stakeholders include the United States Federal Government, the Federal Communications Commission, state governments, telecommunications companies, local governments, and many smaller organizations along with the individual user.

Economic Lens

Next I discuss the economic considerations relevant to assessing broadband expansion. I discuss whether increased competition may help to improve the quality of broadband and help bridge the digital divide. Broadband is a highly inelastic service and I explore the benefits of municipal broadband as an option that would increase competition. The grand expense that is required of broadband installation is touched upon and I relay how the economies of state governments and private firms play a role in shaping broadband economics.

Organizational Theory Lens

In order to understand how broadband policy and economics are shaped, we need to understand how forces within the broadband political arena are organized. This understanding allows us to better know how and why decisions that affect broadband, and millions of people, are made. In this section I discuss how the structure of an organization can play into its decision-making process. I then explain how the culture of an organization affects the people who work there, before touching upon how technology has altered the normal dynamics within decision-making bodies by increasing the power of the few.

Political Science Lens

Finally, I acknowledge the major policy window that COVID-19 has presented on this matter. The political, policy, and administrative considerations concerning broadband are numerous and complicated, but COVID-19 has caused many groups to share the same thought process concerning its expansion. I discuss the role that The FCC plays in broadband expansion,

and how partisan the process can be, as well as the powerful role that state governments play in the ability of municipalities to make their own decisions. I finish by warning of unintended consequences when passing laws, to avoid regulatory capture and prevent further restrictions on broadband in pursuit of broadband expansion.

_____, Committee Chair

Edward L. Lascher, Jr.

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Introduction

Campaigning for the presidency in 1932, Franklin Roosevelt stated: “Electricity is no longer a luxury; it is a necessity” (Roosevelt, 1932). Roosevelt’s claim bears many resemblances to the call for broadband expansion throughout the nation, including in California. Broadband shares many similarities to other utilities, most prominent in that it is arguably essential for modern day life. Regardless of how broadband expansion should be treated moving forward, it is apparent that far too many people lack access to quality and affordable broadband in California. In 2019 the number of children alone without broadband totaled 1.7 million, leaving them with either unreliable internet connection or no internet at all; similarly, 945,000 individuals, children, and adults, had no internet connection at all (Goss, Lee, & Gao, 2019).

The lack of quality and affordable broadband in California should be of urgent concern to the state, municipalities, and depending on how the problem is approached, telecom companies. The COVID-19 pandemic has required significant numbers of Californians to telework, learn via distance education, and receive healthcare through telehealth. The movement toward technology platforms highlights the state's inequities in access to computing devices, technology tools, and connectivity. The pandemic has exposed the severity of the issue and shows California that an emphasis on broadband expansion and improvement is necessary for the health of all citizens of California.

Throughout this analysis, I will first provide an outline of the relevant stakeholders and varied interests that are associated with the status of broadband in California. I will then apply three lenses, or points of view, while attempting to explore and define the current status of broadband in California. My analysis will focus on the varied aspects of the problem and will

primarily offer a comprehensive exploration of the status of broadband in California. My goal is not to offer major policy recommendations, though key insights may naturally suggest particular courses of action. The different lenses will each take a look at the problem from a unique perspective, highlighting the issues, insights, and means by which the selected discipline can assist in working towards a solution. The lenses will include an economics lens that considers state and local finances as well as the competitive market governing the nature of broadband, an organizational theory lens that discusses the structure of the Federal Communications Commission and how decisions are made within complex organizations, and a political science lens that looks at the administrative and policy considerations from state and local government perspective.

Broadband Stakeholders' & Interests Explained

Broadband is a vast topic that is full of major concepts as well as small intricacies. Stakeholders big and small have an interest in broadband and their interests may share similarities or may be completely different. In this section I will outline the stakeholders that have interest in broadband by starting with the largest organized entities and working toward stakeholders that are most commonly smaller. The stakeholders that I will be focusing on are largely the major players when considering broadband, the ones that have already been at the forefront of broadband policy whether to hasten or impede its progress.

The United States Federal Government is the largest stakeholder in broadband with interests that range from economic development, to national security, to providing an essential service to its citizens. In June 2020, in the midst of the coronavirus, The U.S. House of Representatives passed a $1.5 trillion infrastructure construction bill that would invest $100

billion into broadband (Kinney, 2019). The federal government has been forced to turn more of its attention toward broadband infrastructure within the nation in order to satisfy the needs of its citizens as telework and distance learning become the new norm. However, it may take some time to make the necessary changes along the way, especially when considering the interests of competing stakeholders.

The Federal Communications Commission, or FCC, is an independent federal regulatory agency that is responsible directly to the United States Congress. The FCC was formed by the Communications Act of 1934 to replace the outdated radio regulation functions of the Federal Radio Commission. The FCC has since expanded its mission to include the regulation of interstate and international communications by radio, television, wire, satellite, and cable in order to ensure that all forms of communication are able to co-exist. The FCC's jurisdiction includes all 50 states and the territories, the District of Colombia, and U.S. possessions. Recently the power of the FCC over the regulation of the internet has come into question as decisions that affect everyone are being made increasingly along party lines (Selyukh, 2017). With Democrats favoring laws that prevent companies from interfering with user internet access, and Republicans favoring a free-market approach allowing companies to charge for services affecting internet speed, a heated debate continues regarding the right amount, or kind, of regulation. Broadband access and use is essential for the vast majority of the nation, calling into question whether politics should determine the proper courses of action. The FCC, being at the forefront of determining the best courses of action to solve major telecommunications problems, is positioned in the seat of power when it comes to expanding broadband; unfortunately, broadband and telecommunications as a whole has become a

partisan issue and sensitive topic (Pressgrove, 2020). Democrats mostly support funding broadband infrastructure, digital inclusion, net neutrality, municipal broadband, and/or digital privacy while Republicans mostly avoid stances or reject net neutrality (Cooper, 2019). The purpose of the FCC is clear enough, however, opinion on how to pursue the goals of the organization varies, even at the top.

State governments have a vested interest in bridging the digital divide. California has recognized that the problem exists and has recently removed roadblocks to implementing municipal broadband (Chamberlain, 2020). In 2018, lawmakers in California successfully passed legislation that removed the state's restrictions on limiting publicly owned broadband networks in the form of Assembly Bill 1999 (2017-2018). This essentially removed the roadblock to local government broadband implementation in California and paved the way for local government decision. This, along with action taken by other states, has shown that state governments are putting quite a bit of work into bridging the digital divide, primarily by working to foster better broadband access (Quaintance, 2020). The onset of the coronavirus has exposed states to the severity of the digital divide. The need for increased broadband funding can be seen in the complications for students stuck at home without internet, for seniors who are struggling to meet basic needs, and for many others (Quaintance, 2020). Many states, including California, are unsure as to whether investment in broadband or 5G is more appropriate. The strength and speed of 5G has the potential to enhance city communications and boost businesses where it is installed. However, controversy over local control of 5G with the Federal Communications Commission and citizen backlash over the negative aesthetic of 5G towers along with the increased cost and lack of rural 5G likely to increase the digital divide, have allowed broadband

to be a strong alternative (Haisler & Smith, 2020). In August of 2020 California Governor Gavin Newsom signed Executive Order N-73-20 which directed the California Broadband Council to devise a broadband action plan (California Executive Order N-73-20). The new action plan places a large emphasis on the expansion of broadband services despite the 5G rollout having occurred in some major California cities. The executive order serves as an impediment to 5G, which may frustrate telecommunications companies.

As of December 14th, 2020, municipal broadband is illegal or faces roadblocks in 22 states (Chamberlain, 2020). This is largely due to the massive investments in lobbying for municipal broadband restrictions that telecommunication companies have made at the state level (Chamberlain, 2020). Telecommunications companies have historically had localized monopolies over broadband and resisted pushes to expand their services to unserved populations, arguing that the return on investment would not be worth the expansion (Pressgrove, 2019). But the pandemic has turned a spotlight onto questions around how heavily financial matters should be considered when discussing access to a technology that our society depends upon. Questions have been raised regarding how closely broadband is to that of a utility, and how necessary its full implementation is when trying to close the digital divide. Telecommunication companies obviously have their own interests at heart, but there are other private companies that push for broadband growth. For example, Microsoft president Brad Smith recently pushed for more connectivity to rural areas (Baker, 2020). Citing the push for electricity the previous century, Smith asked Congress to take action that would improve broadband connectivity throughout the nation. While private sector companies that support

increased broadband infrastructure may have their reasons why, they remain influential stakeholders in the push for broadband (Baker, 2020).

Local governments are perhaps one of the most important stakeholders concerning the future of broadband in California and the rest of the nation. With their proximity to their constituents and ability to make decisions that directly affect the citizens of their cities, municipalities are poised to set the stage for broadband in California and the rest of the nation, at least where there are no state restrictions. One of the most commonly referenced examples of successful municipal broadband is that of Chattanooga, Tennessee. In 2010, the city launched its broadband network, managed by city owned utility EPB (Wray, 2021). While there are other municipal broadband networks, EPB offered extremely fast speeds city wide. The power and reliability of the network has caused a surge in economic activity within the city and has recently been estimated to have provided $2.69 billion in benefits (the network cost roughly half a million) to the city since its installation (Wray, 2021). These benefits have come in the form of reduced outage times and a reduction in carbon emissions, to name a few. The city's broadband network has also been an invaluable asset to the city during the COVID-19 pandemic, largely allowing operations to be moved online without much difficulty (Wray, 2021). Other cities are beginning to take notice, in California there are currently 17 municipal broadband providers as of 2021 and soon to be 18 in summer of 2021 (Zimmer, 2021). However, only 6 of the 17 municipal broadband providers in California offer residential services. The majority only serve businesses or other municipal services, like hospitals and schools (Zimmer, 2021). As of 2020, only 25% of California had residential fiber service, and rollouts have favored wealthier neighborhoods while leaving other neighborhoods behind. Rural

California in particularly void of broadband access as connections often pass by without diverting to connect to rural towns; however, this may be due to the majority of rural areas only having private providers in the area (Zimmer, 2021). Ultimately, municipalities have the ability to make important decisions regarding broadband implementation in their cities, but may require assistance from their state. A recent study published in the technology journal, *Telecommunications Policy,* is the first in more than a decade to assess the full impacts of state level broadband policy (Technology, 2020). With outstanding factors controlled, the study finds that counties have better broadband and fiber availability when their respective states have broadband funding programs and no municipal broadband restrictions (Technology, 2020). This study points to the fact that no single entity has the power to alter the broadband political and policy environment. In order to see substantial change, the stakeholders in the broadband arena will need to work together and find some level of compromise, if collaboration is not a possibility.

The list of broadband stakeholders and interests I have provided is by no means exhaustive. Naturally, as with any vital piece of infrastructure, there exists a wide group of organizations and people who have some level of vested interest. There are small organizations that seek to fulfill their own broadband goals and there is of course that of the individual who is affected by the decisions made regarding broadband. My intention is to describe the current broadband arena and explore the groups that have the ability to make the biggest impact in the near future. In order to best explain the means by which future changes in broadband may occur, or even to portray the current broadband environment, an understanding of the different facets of what drives the players in the broadband arena needs to be had. The nature

of broadband can be interpreted differently depending on the expert analyzing the topic or defined differently depending on the organization one represents. In order to give an accurate depiction of the current broadband environment, I must apply a variety of lenses toward the topic and analyze each independently.

Economic Lens

When applying an economic lens to broadband, it is evident that there are a massive number of considerations to be had. The economics of broadband are important to local and state governments in order to determine whether or not a broadband project or policy is feasible. Better, faster, and cheaper broadband, the likely benefits of increased competition, are shown to benefit everyone (Aman, 2017). The structure of broadband providers around the world IS highly oligopolistic: just a few control services, and often these providers divide territory (Chouhan, Sridhar, & Rao, 2021). The lack of competition may be leading to detrimental effects in American markets, in the form of lower quality and more expensive broadband. Demand for broadband is highly inelastic, meaning that consumers buying habits and behavior regarding their use of the product remain largely unaffected by price changes and quality. This means that it is basically essential to life in our developed nation, especially in urban areas, just like water and electricity. The inelastic nature of broadband demand forces leaders, at the local, state, and federal levels, to question whether privately owned companies, where the stakeholders are their primary concern, should be the gatekeepers to a product akin to water and electricity (Marshall, 2013). A monopoly and/or oligopoly on a highly elastic product would see a sharp decline in sales if the price were raised, but on an inelastic product the response from consumers is much slower and not as pronounced, resulting in higher profits

for the firms. The possible benefits of municipal broadband are many, though there remains debate as to whether municipal broadband is the best way to achieve these outcomes, or if these outcomes would actually come to pass.

If the potential economic benefits are so good, then what is stopping municipalities from installing them in states where there are no roadblocks? The simple answer, broadband is very expensive. According to a 2018 master plan put forth by Magellan Advisors, a consulting firm that assists cities with installing broadband, the city of Concord, CA (pop. 130,000) would need to spend over $52 million, almost half of their yearly budget, to install a broadband network that serves the city and its extended business community, municipal organizations, and anchor institutions such as schools, libraries, and colleges (Magellan Advisors, 2018). To be clear, this cost would not cover a network that serves households within the city, but may still provide strong economic benefits to the city as a result of attracting businesses and strengthening institutions by way of potentially cheaper and stronger broadband. The network would take an estimated 18 years to pay off. Many critics cite the high cost of installing municipal broadband as a prohibitive barrier to entry, but others argue that investment in public infrastructure is a driver for business productivity and economic growth (Ford & Koutsky, 2005). Regardless of the expense that installing a broadband network would cost, there are still other factors that should be considered in the form of the benefits to citizens, the consequences on the private market, or any positive or negative externalities that result from municipal broadband installation in California.

States have enormous influence as to if and how quickly their cities can install broadband. California Governor Gavin Newsom recently passed executive order N-73-20,

recognizing the importance of broadband in California's communities, and calling for a broadband state action plan, among many other things. But aside from the political science/administrative lens, which we will cover later, how can state economics affect broadband? State governments have the ability to utilize funds for grants and loans that aim to hasten broadband expansion (An, 2020). States can choose which organizations receive funds, internet service providers (ISPs), nonprofit cooperatives, or local governments. The power of state funds is strong, but deciding who may receive the funding can have long term economic results and alter the competitive landscape of the state. Providing a grant to a municipality may result in a decrease in private sector influence in the area, while giving an incentive or subsidies to IPSs to extend coverage to rural areas could make municipal investment in broadband obsolete due to greater coverage and reduced prices. Regardless, according to a 2020 study, there is evidence that localities generally fare better regarding broadband access and quality when states have broadband funding programs and allow municipalities to participate in the market (Whitacre & Gallardo, 2020).

Private telecommunication firms, like most other private sector entities, make economics-driven decisions. Building a rural network requires a significant investment of capital and results in comparably low returns as a result of the smaller population (Oakland, 2020). Additionally, rural areas often include challenging terrain and conditions making broadband projects more costly and risky than in urbanized areas. The low revenue potential makes expanding broadband to rural, and often underserved areas, an insufficient investment, something that would prevent any company from taking action (Oakland, 2020). As a result of this, government often seeks to remedy the lack of rural broadband with grants or incentives

that push telecom companies to expand their services; however, government grants can fail to result in expanded broadband due to inefficient use by telecom companies and a lack of tracking how the grant is actually spent.

In almost every area of the world where broadband is a vital piece of infrastructure, there exists an oligopolistic market that it inhabits (Chouhan, Sridhar, & Rao, 2021). This means that there are few operators who are providing broadband services which then limits the choices that consumers have over which service they choose. In most cities throughout the nation, telecom companies seem to have divided territory amongst themselves, resulting in one company having a monopoly in a city while another company has a monopoly in the next city over. This allows telecom companies to avoid competing with one another and to maximize their profits. This occurrence is known as implicit collusion, and is also happening in California, with Comcast and AT&T dominating the market but rarely competing with one another. (Pressgrove, 2019). If telecom companies, or any company that sells to consumers, are able to eliminate a large portion of their competition, economic theory points to consequences in the form of higher prices to consumers, a lack of innovation, and less incentive to provide adequate customer service. To address the social issues associated with oligopolistic markets, one possible course of action is to encourage municipal broadband which would create competition and begin to benefit consumers (Pressgrove, 2019). However, there are some opposing points of view regarding municipal broadband. Some experts claim that after associated costs, municipal broadband prices are the same, if not higher, than ISPs (Bruer & Brake, 2021). Other arguments suggest that the focus should be placed on removing other barriers to broadband, such as increasing digital literacy in low-income areas or providing subsidies directly to low-

income users instead of reworking the entire national structure. Still others claim that as a result of crowding out, adding more providers with the result of pushing other providers out of the market, will result in ISPs underinvesting in communities and degrading quality and innovation (Landgraf, 2020). Crowding out may mean that there is no real change at all, resulting in a massive waste of resources. Though, many experts admit that they are not sure about potential welfare gains that result from municipal broadband.

Organizational Theory Lens

Understanding the processes that drive decisions within stakeholder organizations, such as the Federal Communications Commission (FCC), will allow more insight into effective decisions benefiting the majority. It may be possible to identify if/how there may be forces within the broadband political arena that prevent or slow change. In order to understand how telecom firms and related groups come to be organized in the ways that they do, we need to understand the organizational structure and purpose thereof, how people shape an organization, and how technology has changed organizational structure.

The structure of an organization and why it exists plays a substantial role in its decision-making process. While individuals own ideas can affect decisions, so can the role that they have been given affect how they operate (Bisel, Ford, & Keyton, 2007). The title, role, or identity that an organization gives its employee will affect their decision-making. If there is a miscommunication between the organizations goals and what the individual perceives as the goals then there will result a decision that is not in the best interest of the company (Bisel, Ford, & Keyton, 2007). Organizational politics also plays a major role in decision-making at all levels of the organization (Landells & Albrecht, 2017). Employees vary on their perceptions of

organizational politics as a positive or negative force. By understanding the role that organizational politics plays, one may better understand how decisions are made. This applies to all levels within an organization from executive teams to ground-level employees (Landells & Albrecht, 2017). It is important to understand the political environment of each organization separately. When considering how impactful decisions are made, outsiders trying to study an organization must assess the ideas, groups, and power of politics within (Landells & Albrecht, 2017).

The influence that individual people can have on an organization is also quite powerful. Research shows that individuals struggle immensely with making decisions based purely on the interest of the organization (Struthers, Weiner, & Allred, 1998). Many managers make decisions regarding personnel, such as hiring and firing, based on casual attributions. Where one manager may consider someone to be an outstanding employee, another may see one particular flaw and reprimand them until they are forced to resign (Struthers, Weiner, & Allred, 1998). The same is true for the decision-making process. If people, managers in particular, are constantly in flux and basing decisions off of their own perceived attributions, then there is room for human error and a lack of thorough analysis. This can lead to a decision being made that is not in the interest of the many and portrays how just a few people can make major decisions when the proper checks and balances are not in place.

Technology has altered the organizational structure of our institutions greatly, causing rapid change and necessitating consideration of its power and influence. Fewer staff at all levels means that there are less voices to be heard and gives power and information to the few, increasing the concentration of power into a smaller group of people holding valuable

information (Chary, 2007). Furthermore, globalization has removed boundaries to influence and change and has given the groups with increased concentration of power considerably farther reach. This increased power, and increased reach, as condensed the decision-making ability of organizations again allowing a small number of individuals to make decisions affecting a much broader community (Chary, 2007). Executives in organizations trend towards downsizing themselves and this results in an opaquer decision-making process. If someone with a particular agenda manages to infiltrate the process, they may make decisions that are not in the best interest of the organization or broader community. Understanding how these organizational elites' function, what their process is, and how they came to their decisions is paramount in making sure that the best decisions are made (Chary, 2007).

With understanding of how the structure, people, and technology within an institution can affect its policies and objectives, let us turn to a quick summary of how the structure of the Federal Communications Commission (FCC) can affect nationwide broadband policies. The FCC is organized from the top-down. Power to make decisions is granted to those at the very top and since the chair of the FCC is appointed by the president of the nation (and confirmed by a closely divided U.S. Senate), personal politics and opinions can shape the entire nature of the organization, affecting the policy outcomes for generations to come. Since the FCC influences the policy around broadband, such as whether or not municipal governments are allowed to develop their own networks, whomever is able to influence the FCC is largely in control, largely the one in power over broadband regulation (Shafritz, Jang, & Ott, 2016). Politics plays a major role in the development of communications. Starting at the federal level, leaders are able to make decisions for the entire nation that are not always in favor of everyone throughout a large

country. Due to the nature of the FCC as a machine bureaucracy, there is little room for flexibility once a mandate has been passed down (Bolman & Deal, 2017). This all culminates into a system where those in power determine how they think the organization's mission should be carried out and then pass it down to an organizational body who carries out the task without much thought. There is a constant power struggle over the direction of the organization, though this is a byproduct of the power struggle within the federal government and can result in major organizational shifts as new parties take office. The result is an FCC that is able to drive change or stifle it based on the beliefs of those in power. In essence, it would seem that in order to drive the development of broadband nationally we would need for there to be a policy window to do so, such as COVID-19, as well as leadership that agrees with the proposed changes highlighted by the policy window. The structure of the FCC is reliant on the decisions of the few seated at the top, and the mission is interpreted by those few as well. There are independent movements in many states and municipalities that seek to expand their own broadband; however, these movements are often stifled by the laws laid down by the FCC. The success or failure of future efforts to address this policy issue will depend on the leadership at the time and how they think the efforts support the overall mission of the Federal Communications Commission.

Political Science Lens

COVID-19 has presented an unforeseen policy window that spotlights how reliant the nation is on broadband and makes a compelling case for the expansion and improvement of our broadband infrastructure. In order to take full advantage of this policy window, there are many administrative and policy considerations that must be accounted for when considering the

current overall landscape of broadband implementation in California. In order for any substantial change in broadband coverage to occur, there would need to be changes at multiple levels of government. Federal broadband law and the FCC would need to allow for quick review processes and ultimately allow for less regulation, a change that may be difficult depending on which way a closely divided Senate votes. However, the FCC has recently taken steps to revisit, review, and streamline its processes (Westling, 2021). These recent actions only apply to a small aspect of broadband, small wireless facilities, and are only a part of the larger broadband picture. Also, these regulations are easy to reverse if another administration decided to do so, potentially shortening the policy window (Westling, 2021). At the state level, the governor and legislature have the ability to help fill gaps in the implementation process, remove state regulations and review processes, and can devote funds toward broadband. Despite the change required at multiple levels, the fact remains that California, and the nation as a whole, needs better internet and there is action that can be taken at the state level.

California lawmakers can help to make sure that state and local regulations and review processes do not hinder providers' ability to build and upgrade infrastructure that is required for expanded coverage (Westling, 2021). Review processes can vary from locality to locality and reducing uncertainty and inconsistency is vital to rapid deployment. In some cases, the FCC and ISPs have the money to implement broadband, sometimes from grants or incentives, but lack the data to do it effectively (Dechiaro, 2020). Lawmakers have the ability to provide funds for broadband expansion, but are also able to assist in other ways such as signing legislation that requires accurate and recent data or helps to develop strong telehealth programs. State government is able to consider multiple aspects of an issue and pass legislation to achieve

change by focusing on various aspects of an issue at one time. For example, broadband is a determinant of health quality in a given region (Bauerly, McCord, Hulkower, Pepin, 2019). While ISPs may not consider this when considering broadband, government will take health and many other factors into account. When faced with the fact that communities with little or no broadband access have significantly lower health outcomes and lack quality care, lawmakers can find ways to improve the facilitation of telehealth. By analyzing the health impacts of broadband and telehealth laws, government can make evidence-based decisions that improve health while also improving broadband access (Bauerly, McCord, Hulkower, Pepin, 2019).

Political partisanship plays a key role in broadband development. With the recent shift toward Democratic power in the federal government, and the persistent Democratic power in California, many believe that broadband could see some major expansions under packages that include infrastructure funding and broadband subsidies (Reid & Kern, 2021). It is not to say that Republicans are against a strong broadband presence, though there is a lower chance of high-dollar packages for broadband expansion passing under the political right. Republicans also repealed net neutrality and mostly left telecom companies to their own devices, something that as discussed earlier results in very little expansion into underserved communities (Reid & Kern, 2021). A government controlled by the Democrats is more likely to offer subsidies incentivizing telecom expansion into less-profitable areas, and to allow for municipal government as an option, something that Republicans may see as government interference in the free market.

Lastly, laws can often have unforeseen affects that help or hinder their original intent. Broadband stakeholders with significant resources can attempt to sway lawmakers into passing legislation that secures their position in the broadband arena. Care should be taken to avoid

regulatory capture, where regulatory agencies may come to be dominated by the interests they regulate and not by the public interest. The result is that the agency instead acts in ways that benefit the interests it is supposed to be regulating. To put it simply, regulation can make it more difficult for competitors to enter the market by raising the barrier to entry. Studies on broadband regulation show that an increase in access price decreases the take-up price which negatively affects broadband coverage (Briglauer & Cambini, 2018). Whether an approach favoring regulation, treating broadband like a utility, or an approach toward very little regulation is taken, caution should be exercised to ensure that no particular stakeholder is able to take advantage of regulatory capture for their own gain. Otherwise, the administrative and policy powers that the government may wield to expand broadband coverage may instead be used against broadband coverage.

Conclusion

Given the increase in telework and tele-education, along with the continued lack of connection in rural areas, broadband expansion in California is considered a pressing need even as the COVID-19 pandemic begins to come to an end. Even so, the barriers to implementation are still numerous and strong. Coordination of efforts on engaging stakeholders at all levels and from all involved industries should be undertaken in order to utilize this policy window to its full extent. Even then, the issue of broadband expansion is complicated. Accordingly, care should be taken to accurately assess each aspect of implementation to ensure that we proceed forward in the best way possible. The economics of what drives broadband expansion, who controls the market and where increasing competition may benefit growth, need to be fully understood. Recognizing that large, powerful, and ever-changing organizations have

considerable influence and goals is essential to facilitating change. Understanding how government politics and policymaking can have an impact, for better or worse, through funding, research, and lawmaking is necessary in order to streamline the processes that allow for broadband implementation. By understanding the perspectives that these disciplines offer, we can best prepare to engage the relevant stakeholders and take action that drives the development of broadband connection and competition in California.

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Artifact #1 Introduction – Local Government Staff Report

The local government staff report was assigned to me while participating in PPA 210: Political Environment of Policy Making. The class was largely built around developing career-oriented skills that would allow me to become a more competitive applicant in the professional marketplace. The local government staff report assignment was meant to build upon a policy topic that each student had already explored in a prior class, PPA 200. We were then meant to craft a local government ordinance and subsequently to write a staff report that was then presented to a mock city council, though this mock city council did include actual council members from nearby municipalities, as well as peers.

When crafting the ordinance, I decided to use the topic of broadband as I was beginning to consider it for my portfolio project. I then chose to draft the staff report for the City of Elk Grove as a result of my decision to accept a summer internship with the Elk Grove City Manager's office. The staff report is an exact replica of an actual City of Elk Grove staff report and I, much to my excitement, was given the chance to draft a real staff report for the City during my time there.

The report recommends that the City approve the convening of a task force that assesses the viability of a city-owned broadband network. It provides a thorough background of the pros and cons of municipal fiber and also provides an analysis of the political environment regarding municipal broadband. Lastly, it provides alternatives, other considerations, and a realistic environmental review. This assignment gives insight into what considerations must be taken into account from a city's point of view when determining the viability of installing its own broadband network. The ensuing presentation then provided me with valuable experience

taking information that has been condensed considerably, and then condensing it further to provide essential points to decision-makers in just a few minutes.

AGENDA ITEM NO. 1

CITY OF ELK GROVE
CITY COUNCIL STAFF REPORT

AGENDA TITLE:	**A public hearing to consider the convening of a task force whose primary responsibility would be to perform a fiber feasibility study and determine the likely impact of installing a city-owned fiber-optic broadband network.**
MEETING DATE:	**April 28, 2020**
PREPARED BY:	**Sean Lemar, Public Policy & Administration Graduate Student**
DEPARTMENT HEAD:	**Jason Behrmann, City Manager**

RECOMMENDED ACTION:

Staff recommends that the City Council approves the convening of a task force with the purpose of utilizing a cost-benefit approach to assess the economic impact of installing a fiber-optic broadband network throughout the city.

BACKGROUND INFORMATION:

The City of Elk Grove currently has six internet providers that provide coverage to at least half (50%) of the city and that also provide at least 25 Mbps, a residential standard as defined by the Federal Communications Commission (FCC). Of these providers, two provide DSL services, or digital technology transmitted over telephone lines, two provide satellite services, one provides cable, and one provides fiber-optic. Viasat and HughesNet provide satellite services nation-wide but offer slower internet speeds at higher costs due to the nature of satellite service, leaving four competitors with varying city coverage in Elk Grove.

Assembly Bill 1999 (2017-2018):

In 2018, lawmakers in California successfully passed legislation that removed the state's restrictions on limiting publicly owned broadband networks. This essentially removed the roadblock to local government broadband implementation in California and paved the way for local government decision.

Assembly Bill 1366 (2019-2020):

AB 1366 seeks to extend the sunset of provisions prohibiting state regulation of VoIP and IP enabled services except as specified by the Legislature for 10 years. Opponents of the bill argue that deregulation of VoIP and IP based services stifles government ability to collect data necessary for the deployment of broadband services to underserved communities. AB 1366 is currently being amended and will be rereferred to Senate Committee on Energy, Utilities, & Communications.

Fiber-optic and California Cities:

In December 2019, Moorpark, CA partnered with a broadband consulting firm, Magellan Advisors, in order to develop a broadband strategic plan. The City Council created the Broadband Ad Hoc Committee to work with the city staff. Also, Redding, CA has begun to assess public interest in a municipally owned broadband network and has started a pilot project in their downtown area.

ANALYSIS/DISCUSSION:

Advantages of Municipal Fiber Networks:

Municipal fiber networks help to encourage competition among private providers as well as to provide high-quality and cost-effective broadband themselves. This allows both residential and business districts to have increased access to stronger internet services without having to pay prohibitive rates.

City-wide broadband networks can increase equity between city centers and more rural areas by providing equal access high-quality information and technology to all homes and businesses.

Local governments are given oversight over network performance and can hold any participating companies accountable to certain standards as well as the ability to designate personnel to the success of the fiber network.

Increased quality of access to more parts of the city will allow for increased opportunities for telecommuting and distance learning. More access will also mean increased applications for E-government and civic participation.

Multiple studies exist within the literature that find community-owned fiber networks most often charge less and offer prices that are clear and unchanging while internet service providers often provide low entry prices that rise sharply after about a year. Community-owned fiber is most often priced lower when averaged over four years.

Disadvantages of Municipal Fiber Networks:

Deploying a fiber network is time-consuming and costly. A large amount must be invested upfront in order to build the needed infrastructure and there will be ongoing maintenance and expenses that can be hard to address until there are many subscribers.

They can be difficult to manage and require a large amount of expertise and knowledge.

Relationships with internet service providers (ISP's) may become strained and there must be a financial incentive for them to continue providing service in the area.

Due to government oversight, citizens may have negative perceptions about government access to their privacy and information.

DSL vs Cable vs Fiber:

Digital subscriber line (DSL) is the most common type of connection in the world and offers internet speeds up to about 35 megabits per second (Mbps) and is not shared with neighbors. Cable services offer up to 150 Mbps but is a shared bandwidth service that will have severely reduced speeds during peak usage. Fiber services can reach up to 1000 Mbps, are not shared, and are constantly improving.

5G Technology:

With 5G technology on the horizon, it is necessary to consider if a fiber-optic network will become obsolete in the near future. 5G can reach speeds that are competitive with fiber networks, but the bandwidth must be shared and may be affected adversely by weather and environmental issues.

Wireless 5G technology has the advantage of requiring less infrastructure development in and around people's homes, but still has limited range which will require many installations on every street, but not into homes.

The City of Elk Grove has been considering the benefits and negatives of 5G technology for some time. During a special meeting held by the Elk Grove City Council on Nov. 28th, 2018, there was both strong support and strong opposition from citizens regarding 5G.

A recent amendment to *Title 23, section 94* of the Elk Grove Municipal Code (Zoning) prohibits any small cell wireless communication facility from being immediately adjacent to a front yard of any residential dwelling and requires antennas to be at least 500 feet away from each other.

IMPLEMENTATION/MECHANICS:

The Broadband Task Force would consist of a Chair, Vice Chair, one policy analyst, one economist, one public communications officer, one urban planner, a consultant on business relations, and a technology consultant.

The task force would be given six months to complete a fiber feasibility study and would then report to the City Council on their findings and recommendations.

The fiber feasibility study will consist of:

- A cost-benefit analysis on the implementation of a city-owned fiber optic network.
- A system-level fiber to the premises (FTTP) design and cost estimate.
- A customer experience simulation report.
- Development of policies surrounding the installation and use of the network.
- A presentation and written report on findings to be shown to the City Council.
- A range of potential business models.
- Evaluation of financing, funding options, legal considerations, and regulatory considerations.
- A consideration of alternatives.

The task force, with help from city staff, will also begin to assess public opinion through public outreach methods such as public meetings and the administration of a survey.

ENVIRONMENTAL REVIEW:

The California Environmental Quality Act (Section 21000, et. seq. of the California Public Resources Code, hereafter CEQA) requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."

The proposed task force would be conducting an analysis on the installation of a municipal fiber-optic network that would require massive amounts of construction and could reach every

home and business in the city. This qualifies as a project under CEQA requirements. A summary of possible environmental impacts is presented in table E-1.

Table E-1. Potential Environmental Impacts

Resource Category	Impact Evaluation
Noise	• Temporary construction-related noise during daytime hours. • Not anticipated to exceed current traffic-related noise.
Air Quality	• Temporary traffic disruption may cause increased motor vehicle exhaust. • Temporary emissions from construction equipment. • No new stationary sources.
Geology and Soils	• Potential for direct & indirect conversion of farmland. • No significant direct impacts in the absence of ground disturbance. • In the event of ground disturbance: o Erosion and sedimentation best management practices would be followed. o Disturbed areas would be restored to preconstruction condition.
Land Use	• Minor temporary impacts during fiber installation.
Infrastructure	• Project utilizes existing transportation and utility infrastructure • No anticipated impact to waste disposal services due to limited construction and demolition waste. • Beneficial impact to broadband communication infrastructure. • Benefit to critical infrastructure/key resources.
Socioeconomic Resources	• No significant direct, indirect, or secondary adverse impacts. • No disproportionate impacts to Environmental Justice populations. • Significant improvement to reducing the “digital divide.” • Anticipated direct and indirect economic benefits, including creation of jobs.
Human Health and Safety	• Contact with hazardous waste unlikely and only in event of ground disturbance. • No known health issues associated with fiber optic cable.
Cumulative Effects	• Minor cumulative effect to utility infrastructure. The addition of the cable to the utility pole will result in less available space for future cables and lines on existing poles. • Beneficial cumulative impacts to public health and safety and socioeconomic resources.

ALTERNATIVE ACTIONS:

All of the following options are available to the City Council:

1. Approve the convening of a task force with the intent of assessing the likely impact of installing a municipally owned fiber-optic network within the city.
2. Deny the convening of the task force.
3. Require a further review on the necessity of the task force and push the decision to a future date.
4. Request a modification of the task force size and/or the requirements of the fiber feasibility study.

FISCAL IMPACT:

The task force consists of eight experienced professionals. Many of the positions may be found from within the current City of Elk Grove staff; however, at least two consultants will need to be hired. Depending on experience, both the business consultant and the technology consultant may be hired on a $90,000 - $110,000 salary based on the six-month period. If another outside hire is required, then the city pay-scale can be utilized to determine the cost.

Special public meetings and the administration of a survey would also require additional funds. For every 200 responses sought via phone or paper mail, expect to pay between $5,000-$7,000. Email surveys are only $3,000 for the same response rate but statistically reach a smaller portion of the population.

ATTACHMENTS:

None.

Artifact #2 Introduction - Budget Change Proposal

The Budget Change Proposal (BCP) assignment was completed in PPA 230: Public Budgeting & Finance. I was rather excited for this class because I wanted to learn more about the topic, seeing as I had close to no experience on the matter at the time. At the time, I knew that one major gap that remained regarding my broadband portfolio was in the lack of a strong budgeting and financial lens when approaching the topic of municipal broadband. The BCP assignment gave me the chance to explore how funds could be requested from the state for the purpose of expanding broadband coverage, from both public and private sources.

The assignment is, admittedly, imperfect. The funds are requested from the general fund, which I learned was unlikely to receive support as even the smallest of sums are hotly debated. Instead, the funds would have been better requested from a source that was geared more towards the purpose of broadband expansion. Despite this mistake, it was engaging to assume the role of a representative of the California Public Utilities Commission, to devise a theoretical system that sought to incentivize broadband expansion, and to utilize a financial lens when approaching the topic. A heavy emphasis was placed on drafting a document that provided a clear and compelling case for why increased funding would be of benefit, how we would use the funds, and why these funds should be given to us and not one of the many other groups trying to improve California.

Finally, I was required to present other financial alternatives and to ultimately describe an implementation plan for how the funds would be used. It was a great learning experience to complete an assignment where money was the primary motivator and to be able to break down exactly how the money I was asking for was going to be used.

STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
DF-46 (REV 02/20)

Fiscal Year	Business Unit	Department	Priority No.
2020-2021	8660	Public Utilities Commission	1

Budget Request Name	Program	Subprogram
8660-001-BCP-2020-L	Broadband Expansion	Click or tap here to enter text.

Budget Request Description
Broadband expansion private and municipal incentive for rural and underserved communities.

Budget Request Summary
The California Public Utilities Commission requests $100,000,000 General Fund in order to develop a program that incentivizes the construction of municipal broadband networks and the expansion of private sector broadband infrastructure into rural and underserved communities.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed
☐ Yes ☒ No	Click or tap here to enter text.

Does this BCP contain information technology (IT) components? ☐ Yes ☒ No *If yes, departmental Chief Information Officer must sign.*	Department CIO	Date
	Click or tap here to enter text.	Click or tap to enter a date.

For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), and the approval date.

Project No. Click or tap here to enter text. **Project Approval Document:** Click or tap here to enter text.

Approval Date: Click or tap to enter a date.

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No
Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
Sean Lemar	10/4/2020	Christian Griffith	Click or tap to enter a date.
Department Director	**Date**	**Agency Secretary**	**Date**
Rachel Peterson	Click or tap to enter a date.	Click or tap here to enter text.	Click or tap to enter a date.

Department of Finance Use Only

Additional Review: ☐ Capital Outlay ☐ ITCU ☐ FSCU ☐ OSAE ☐ CALSTARS ☐ Dept. of Technology

PPBA	Date submitted to the Legislature
Click or tap here to enter text.	Click or tap to enter a date.

A. Budget Request Summary

The California Public Utilities Commission request a one-time broadband incentive stimulus in the amount of $100 million general fund. Of the requested amount, less than $1 million will be used to fully develop an incentive plan that will be used as a guide for use of the remaining amount. The remaining funding will be used for broadband expansion through aid to municipalities that agree to develop their own broadband networks as well as aid to private companies that agree to expand their networks to less profitable rural and underserved communities.

B. Background/History

The COVID-19 pandemic has required significant numbers of Californians to telework, learn via distance education, and receive healthcare through telehealth. The movement toward these technology platforms highlights the state's inequities in access to computing devices, technology tools, and connectivity. In response, the California Public Utilities Commission (Commission) took action in April to help bridge this digital divide by making $25 million available from the California Tele-connect Fund for hotspots and Internet service for student households, prioritizing rural, small, and medium-sized school districts. The Commission also made $5 million available from the California Advanced Services Fund Adoption Account to help cover the cost of computing and hotspot devices. The Commission coordinated with the California Department of Education and this funding is being prioritized toward low-income communities and communities with high percentages of residents with limited English proficiency.

While this initial funding begins to close the gap in broadband inequity throughout the state, it is only a small step towards fixing a major problem and serves as a temporary fix as a response to the COVID-19 crisis. The pandemic has exposed the severity of the issue and shows California that broadband is the next utility, needed in order to function at a basic level in modern society. Historically, internet service providers (ISP's) have invested heavily into opposing municipally owned broadband networks while also refusing to expand into communities deemed unprofitable.

SB 1130 (2019-2020) sought to secure over $300 million, with more every year, towards broadband expansion but was stopped at the Assembly. This BCP seeks to secure a smaller amount in order to observe the effects of the program and determine if more funding would be beneficial.

C. State Level Consideration

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. Five Governor-appointed Commissioners, and staff, are dedicated to ensuring that consumers have safe, reliable utility service at reasonable rates, protecting against fraud, and promoting the health of California's economy.

Telecommunication companies hold monopolies on their respective markets and cause internet to be prohibitively expensive or nonexistent in many California communities while also opposing local government broadband development. This hurts communities without broadband throughout the state. In order to stimulate the expansion of broadband to these

areas, telecom companies need incentive to expand, and competition must be stimulated in order to best serve the California consumer.

D. Justification

A fully developed fiber-optic broadband network with free access for schools, network redundancy, access for public transportation, and the city's core network can cost around $50 million. Similarly, a telecommunications company would need to invest a significant amount of capital into a rural area that would take prohibitively long to turn a profit due to the lack of a large customer base. This initial $100 million, while only a drop in the bucket in the pursuit of statewide broadband, would serve to kickstart municipalities that agree to begin development of their own broadband networks. Funds would also incentivize private companies to expand by lessening the upfront cost and thus resulting in a quicker turnaround in order to make a profit. A recent study The study, authored by Brian Whitacre and Roberto Gallardo, was published in the journal Telecommunications Policy. The article, according to its literature review, is the first in more than a decade to empirically measure the impacts of state-level broadband policies. It found that counties in states with broadband funding programs and no municipal broadband restrictions tend to have more broadband availability than their counterparts. Support is building from local governments across the state of California, which are ready to debt-finance their own fiber if they can receive a small amount of help from the state.

Furthermore, with the availability of this stimulus to both municipalities and private companies, competition will begin to rise as multiple entities develop broadband implementation plans that utilize the least amount of resources, provide the highest quality product possible, and charge the consumer the least amount possible.

Other states have begun similar programs. South Carolina recently began a $50 million broadband expansion program that seeks to lessen the 650,000 South Carolinians that do not have access to broadband. In 2017, California had 1.7 million children alone that did not have access to broadband. The $100 million is just a start when it comes to closing the digital divide.

E. Outcomes and Accountability

Campaigning for the presidency in 1932, Franklin Roosevelt said: “Electricity is no longer a luxury; it is a necessity.” Indeed, the same is now true for broadband. The California Public Utilities Commission intends to reduce the number of children who lack sufficient broadband access for school, and by extension, reduce the number of households with poor internet connection and with no internet connection. This will be the primary metric for assessing the success of the $100 million.

Also, if both municipal broadband and private broadband seek a portion of the funding, competition will be created or increased in their respective communities and rural areas. This will result in faster and better (i.e. more reliable and less expensive) broadband, along with increased ease of access to communities lacking broadband. The average price of broadband throughout the state and the quality measured in Mbps and frequency of outages will be the second metric used for assessing success.

F. Analysis of All Feasible Alternatives

Alternative #1: Approve $100,000,000 GF for the development of a broadband expansion plan and then the execution of the plan.

Advantage: Funding this proposal would serve to begin lessening the digital divide in California. Children without reliable internet for school would be given access to a necessary tool needed

for their education. Rural communities and historically underserved communities would be granted access to the newest emerging utility. And deployment of municipal broadband would hasten while stimulating competition of a service that is monopolized in many communities.

Disadvantage: This alternative increases the obligation to the GF.

Alternative #2: Approve $50,000,000 GF for the development of a broadband expansion plan and then the execution of the plan.

Advantage: This alternative reduces the obligation to the GF while still allowing for some funding of broadband expansion.

Disadvantage: Though $50 million may be a substantial investment in other states, California has a large population with insufficient or zero broadband access. $50 million will not go as far in closing the digital divide.

Alternative #3: Do not approve any amount of funding from the GF as a means to develop broadband expansion.

Advantage: There would be no obligation to the GF.

Disadvantage: Broadband expansion would not be expanded to Californians without access beyond funds slated for temporary fixes related to COVID-19.

G. Implementation Plan

Once approval of the $100 million is given, staff would begin devising a system for outreach, planning, and distribution of funds. In general, these guidelines will be adhered to when devising a program:

- There would be no cap on the amount of grants or funds given but rather, municipal governments and private companies would be urged to provide proposals that outline how

much funding they need, how they would use it, and how many individuals or households would have access to broadband who lacked access prior.

- Proposals would be analyzed in-depth and, in some cases, countered. Grants will be given to proposals with the highest cost-benefit potential.
- Preference will be given to municipal governments, but competitive proposals from private telecommunications companies will be considered.
- Regular check-ins will be conducted with awardees once their projects have begun.

I. Recommendation

The California Public Utilities Commission recommends approval of Alternative #1, approve $100,000,000 GF for the development of a broadband expansion plan and then the execution of the plan. Now more than ever rural and underserved communities need access to high quality broadband in order for their children to remain active in school and to participate in the workforce.

Artifact #3 - An Analysis of Telecom Company Monopolies Over Broadband Provision

Introduction:

Director Mendonca, I am writing this briefing on the current status of telecom company monopolies and oligopolies with the intent to fully inform you of the problems they present, alternatives we can implement to lessen their impact, and the likely outcomes of these alternatives as well as by what criteria I have utilized to arrive at my conclusions. Massive telecom companies famously have some of the lowest scores of customer satisfaction out of just about every industry. One of the biggest complaints is a lack of choice regarding internet service and feelings of helplessness when dealing with these companies (Marshall, 2013). This has been a known problem for quite some time but with recent rollbacks from the FCC, such as the repealing of net neutrality, the dominance of telecom companies has entered the spotlight (Romm, 2019). The purpose of this document is to discuss the fact that in too many U.S. cities, telecom companies hold an oligopoly or monopoly over broadband provision and thus face too little private incentives to charge a fair price, upgrade their services, and provide strong customer service. This summary of a proposed policy analysis will be structured into five distinct sections, the introduction you are reading now, a background on the problem and justification for intervention, policy alternatives, criteria and weights for deciding on the best alternatives, and a conclusion.

Background & Justification for Intervention:

The magnitude of this policy problem is extensive, covering the expanse of the entire nation (Holmes & Zubak-Skees, 2015). In most cities throughout the nation broadband companies seem to have implicitly divided territory amongst themselves, resulting in one

company having a monopoly in a city while another company has a monopoly in the next city over. This allows telecom companies to avoid competition and to maximize their profits. It does not take a policy analyst to see that this phenomenon is also happening in California, with Comcast and AT&T dominating the market but never competing with one another. Internet has entwined itself with modern human life and with the need of internet for almost everyone, localized monopolies have been and are affecting almost everyone (Pressgrove, 2019).

The magnitude of change required for a solution is extensive, any policy change would completely alter how telecom companies are used to operating in California and would change the course of the market, as well as present some risks to municipalities (Pressgrove, 2019). Nonetheless, the market structure has failed consumers and arguably the process of innovation. Private companies have such a firm grasp on the market that smaller companies stand no chance at entering and consumers are forced into business on the company's terms. This is an efficiency public policy problem and based on these observations, government intervention is required in order to stimulate competition and in order to protect consumers.

In the early 1930's there was a large debate over who would provide electrical services to the public, privately owned companies or the government (Marshall, 2013). The privately-owned electricity companies did not want there to be any government intervention and lobbied accordingly. However, there was a major potential for electricity to be monopolized and the general populace was already unsatisfied with the service the private companies provided as well as the rates they charged (Marshall, 2013). When there is potential for a private provider to monopolize a market, they usually will. As history shows, when a single provider controls a product, whether over a large or localized area, the firm will raise the price, prevent new

competition, and usually lack in customer service. These outcomes result in dissatisfied customers who have nowhere else to go and are thus forced to do business with the firm. Another byproduct of a monopoly, or oligopoly, is a lack of motivation to innovate resulting in a stagnant market. This causes no new or improved product to appear on the market, forcing consumers to stick with the same product, at the same high price, while dealing with the same firm until the monopoly is broken through government intervention or they find ways to lessen the inelasticity of the product over time.

Internet, in our modern day, has become highly inelastic. This means that it is basically essential to life in our developed nation, especially in urban areas, just like water and electricity. The inelastic nature of broadband forces leaders, at the local, state, and federal levels, to question whether privately owned companies, where the stakeholders are their primary concern, should be the gatekeepers to a product akin to water and electricity (Marshall, 2013). A monopoly and/or oligopoly on a highly elastic product would see a sharp decline in sales if the price was raised, but on an inelastic product the response from consumers is much slower and not as pronounced, resulting in higher profits for the firms. Due to the ability of a local monopoly to generate higher profits than if competition were present, telecom companies have implicitly divided land amongst themselves.

Explicit collusion, firms openly engaging in coordinated behavior, is illegal in the U.S. so telecom firms are forced to utilize implicit collusion, or independent but parallel actions that benefit one another. When looking at a map of telecom company territory throughout the U.S., very rarely do their lands overlap, as seen in figure 1 in the appendix (Holmes & Zubak-Skees, 2015). Telecom companies are aware that if they competed for customers throughout the

country, they would all make less profit. This would benefit the consumer, spark innovation, and most likely improve customer service policies. However, telecom companies divide up land, essentially creating the same environment as a monopoly. Occasionally there will be other small providers in the area, though their products very rarely can compete with the major firms (Holmes & Zubak-Skees, 2015). Because of the obvious efforts by telecom companies to divide up land and create local monopolies, municipalities are seeking out other solutions regarding internet options so that they may provide the people they serve with reliable, competitively priced, and high-quality internet.

Telecom companies are using every means at their disposal to prevent municipal broadband (Marshall, 2013). Companies are utilizing courts, city councils, and state legislators in order to roadblock or make illegal any law that is deemed a threat; so far, 25 states have roadblocked or banned municipal broadband as a result of $92 million that was spent on lobbying by telecom companies in 2018 alone (Chamberlain, 2019). This is despite evidence that cities can usually offer better services and better prices but is an example of how a large amount of money from a private entity can influence social and economic law in ways contrary to the intention of the markets (Marshall, 2013). The term used to describe this sort of action is regulatory capture and is often used by firms to lock competition out of the market. In many states municipal broadband is outright illegal, forcing it out of the market entirely, though usually regulatory capture refers to a law or set of laws that make it difficult for a new competitor to enter (Chamberlain, 2019). These laws may require high amounts of upfront costs, a gauntlet of bureaucracy, or a drain on resources once established that deters individuals from entering the market. It is a strategy used by telecom companies who feel

threatened by the prospect of competition and then try to lock down the industry using regulatory agencies meant to regulate them.

Unnecessary and harmful, monopolistic tendencies of an inelastic product, implicit collusion, and overregulation has altered the efficiency of the market structure negatively, to the detriment of consumers. The lobbying efforts of telecom companies have directly impacted many communities. The government needs to decide how to best approach the situation in order to restore economically sound policies that are geared toward social good. What options do we have at our disposal in order to best proceed with restoring competition and removing regulatory capture from municipalities?

Policy Alternatives:

The first proposed policy alternative is to encourage local government action. By encouraging local governments to stimulate competition through a variety of methods, telecom companies will be forced to adapt their business strategies or risk losing their clientele to superior city-run broadband. Local governments can choose to install their own broadband networks, creating another option for consumers. An example of this is Chattanooga, Tennessee, where a mid-sized town installed its own high-speed broadband network which is widely cited as the reason for the city's booming economic success (Koebler, 2016). Similarly, another city that is considering taking the same route is Quincy, Massachusetts, which is looking into a municipal internet service as a cheaper and faster alternative to telecom companies with would not require any up-front taxpayer money (Whitfill, 2019). Should the alternative be introduced and be cheaper and faster than private broadband, then competition would be forced as private companies either would need to upgrade their internet capabilities,

or innovate, or lower their prices to keep up, benefiting consumers. Local governments could also incentivize outside broadband providers, such as Google Fiber, to install their own network in the city which would stimulate competition among private providers but have the same effect.

Another policy alternative would be to increase access to multi-unit wiring in high-density areas. By allowing more than one company access to the hardware necessary to provide broadband service to a building, competition would naturally ensue as each company would adjust its prices to be competitive and would need to focus resources to market to the residents of high-density areas, stimulating innovation and great customer service along the way (Kunthara, 2019). High-density areas, such as San Francisco, would be ideal for such a policy change as the number of residents who need internet would be a natural draw to telecom companies; this could also make low-density rural areas more attractive to broadband providers as they would be able to have more control over their product despite having fewer paying customers. This would make rural broadband more expensive but cause there to be more attention given to installing rural broadband in the first place. Overall, multi-unit wiring would encourage competition, might encourage the sharing of costs, leading to growth, and would allow for experimentation in the industry.

The final policy alternative is to focus on repealing all bans and roadblocks to municipal broadband. As mentioned earlier, telecom companies have spent quite a large sum of money on preventing local governments from establishing their own broadband network (Chamberlain, 2019). There is little to no justification for doing this as it simply prevents competition, yet the sheer amount of spending and lobbying has successfully prevented

municipal broadband in half of the country, including to some extent in California. The bans have avoided scrutiny and secured telecom companies' power in the states where they no longer fear public competition. By focusing time and resources on repealing these bans, the possibility of more competition opens in more of the nation. Though it may take time and will not result in competition within localities immediately, it will pave the way for future competition in a greater portion of the country and open more possibilities down the road. A ban on an arguable fourth utility provided by municipalities is detrimental to the well-being of the residents it serves.

Criteria and Weights for Deciding on the Best Alternatives:

In this section I will describe three different criterions by which the above policy alternatives will be evaluated. Effectiveness, administrative feasibility, and cost will be the three criteria and will be used to determine the overall quality of the alternatives. Effectiveness will be weighted as a .4, administrative feasibility as .4, and cost as .2, totaling up to 1. These weights help to determine the importance of that criterion which furthers the analysis of the overall appeal of a policy alternative.

First there is the effectiveness criterion. Effectiveness will be used to evaluate the increase in competition that the policy alternative will help to produce on average within municipalities. For example, when considering policy alternative one, maximize broadband competition at the local level, we can apply effectiveness using this measure: the number of broadband providers available in municipalities, on average. When applying the effectiveness criterion to alternative 1, "encourage local government action," the assessment of the outcome would come down to how much competition was or was not created, and if the competition

lowered prices, provided improved services, sparked innovation, and improved customer service. In short, the outcome would be measured by the ability of local governments, and the number of, who are able to provide broadband competition within their municipality. The same concept would be applied to the number of providers that access to multi-unit wiring brings in and to the amount of competition that appears after all bans on municipal broadband are lifted. The weight for this criterion is .4 because it evaluates the main idea of the original problem, that we need more competition for telecom companies, though we need to be sure that the alternative is feasible in the first place.

The second criterion is that of administrative feasibility. Maximizing the amount of administrative feasibility will ensure that the policy alternative has the potential to be incorporated in the first place which will lead to the desired outcomes. This criterion is judged on how difficult the task of implementing the alternative is presumed to be in terms of the cost, time, and likelihood of opposition. For example, repealing bans can be a costly and time-consuming process and there would be a large amount of legal action from telecom companies and many barriers. The amount of time required and the potential for a positive outcome would need to be considered in order to avoid wasting valuable time and resources on an alternative that will never come to be or that will drain resources so significantly that it will not be worth the projected outcome. The weight for this criterion is .4 due to the importance of the alternative coming to pass so that the effectiveness can then be evaluated.

The final criterion is that of cost. Cost would be evaluated based on the alternative's ability to minimize costs to local governments, consumers, and broadband competitors for implementing an alternative. For example, by measuring the cost in the present, projected cost

in the future, and if the cost is worth it in the long run high-density municipalities could determine if increasing access to multi-unit wiring could reduce costs for competition entering the market and reduce costs for consumers in high-density areas through competition. Implementing an alternative to create more competition is an expensive process and the cost of each alternative versus the potential for it to stimulate competition and reduce prices to consumers in the long run must be evaluated. For example, the cost for a local government to install its own broadband is way higher than that of allowing multiple companies access to wiring; however, a municipal broadband may serve to lower costs and instill greater competition over a longer period.

Conclusion:

The localized monopolies of telecom companies over broadband has resulted in higher prices for consumers, a lack of innovation, and a disregard for customer service. History has shown that when an inelastic product is controlled by a single company, consumers suffer as they have no other choice than to purchase the product at the high price. Based on my CAM analyses, found in the appendix, stimulating local government action would be the most viable and effective way to end the local monopolies held by telecom companies in most of the country. Doing so would create competition at the local level, would be easily implemented in many states with the potential for more, and would often have a large upfront cost that would result in a large amount of benefit to the consumers and to the municipality over time.

Appendix

Key to Interpreting the Extremes of Likert Scale (1-5) Rating Applied to Satisfaction of a Criterion by an Alternative.

	"5" – Very Strong	"1" – Very Weak
Criterion 1: Effectiveness	Anticipated to stimulate strong competition for telecom companies and to stimulate innovation and decreased costs for consumers.	
Criterion 2: Administrative Feasibility	Anticipated to avoid heavy opposition and multiple roadblocks to success.	
Criterion3: Cost	Anticipated to avoid high costs to competitors, consumers, and local governments.	

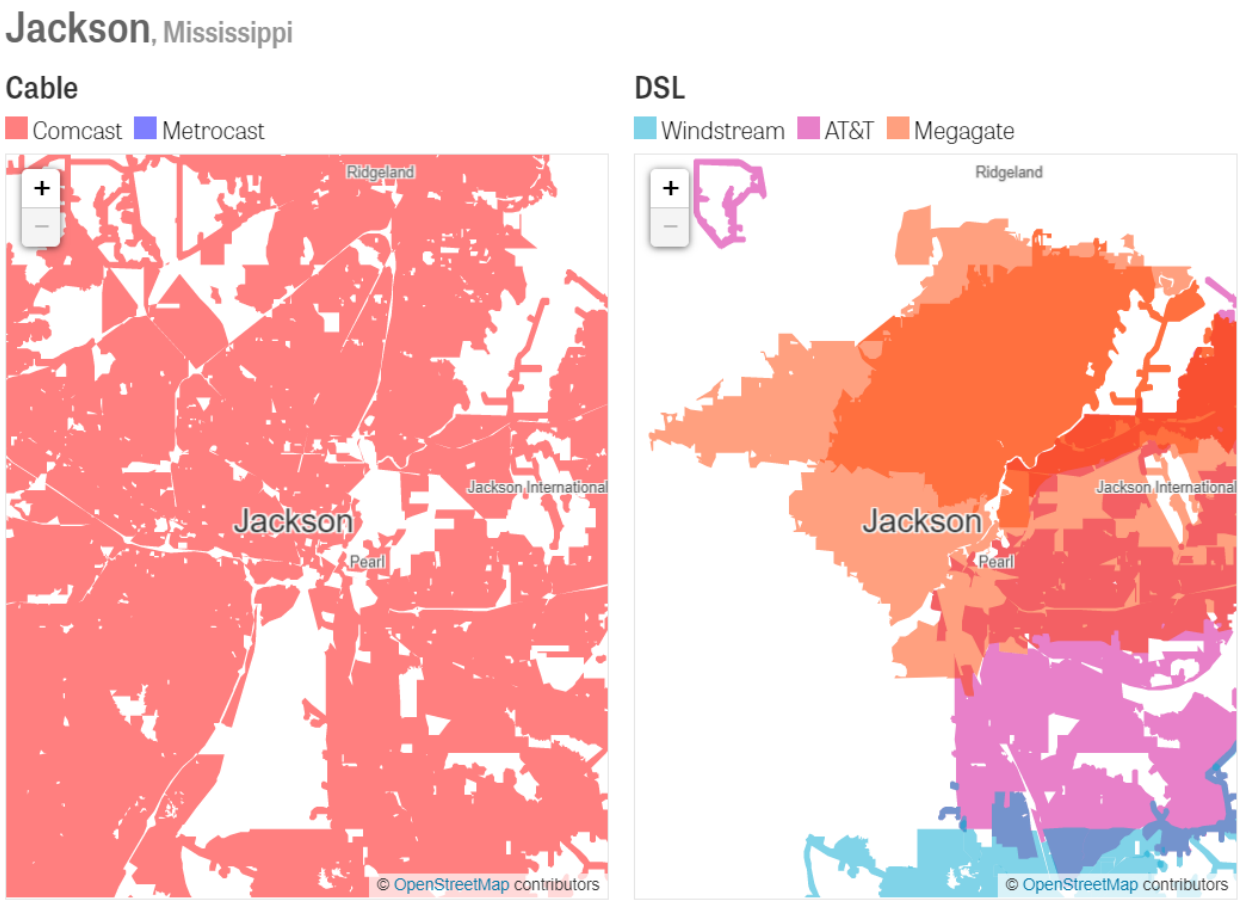
Quantitative Criteria Alternative Matrix:

	Criterion 1: Efficiency	Criterion 2: Administrative Feasibility	Criterion 3: Cost	Total Score
Local Government Action	Rating: 5 Weight: .4 Total: 2	Rating: 4 Weight: .4 Total: 1.6	Rating: 3 Weight: .2 Total: .6	4.2
Increase Access to Multi-unit wiring	Rating: 3 Weight: .4 Total: 1.2	Rating: 3 Weight: .4 Total 1.2	Rating: 5 Weight: .2 Total: 1	3.4
Repeal all Bans and Roadblocks.	Rating: 3 Weight: .4 Total: 1.2	Rating: 2 Weight: .4 Total: .8	Rating: 1 Weight: .2 Total: .2	2.2

Qualitative Criteria Alternative Matrix:

	Criterion 1: Effectiveness	Criterion 2: Administrative Feasibility	Criterion 3: Cost
Local Government Action	Would stimulate competition by creating a publicly run broadband network and force telecom companies to operate under the presence of competition.	In states that have no roadblocks, local government action could be stimulated through legislation, incentives, and education on the topic. In states with roadblocks, much more opposition would be presented in the face of local government action.	Costs would be high for the installation but then relatively low. If incentivizing private companies, the cost would be much lower.
Increase Access to Multi-unit Wiring	Would result in more competition in high-density areas, especially at first. Might discourage future providers and is most likely focused on only certain areas.	The FCC has moved to block multi-unit wiring laws but there is also strong support for the laws which means that it is a looming possibility for multi-unit wiring.	Costs are quite low as once the laws are passed, the wiring is already installed, and the choice is left to private companies whether they want to participate.
Repeal All Bans and Roadblocks to Municipal Broadband	Would not directly create competition but would open the door for roughly half of the country to do so, if they acted.	Difficult, a large amount of time and lobbying would need to occur in order to repeal each ban and there is likely to be heavy opposition.	High, with the expected opposition and time, the cost is projected to be high as well.

Figure 1: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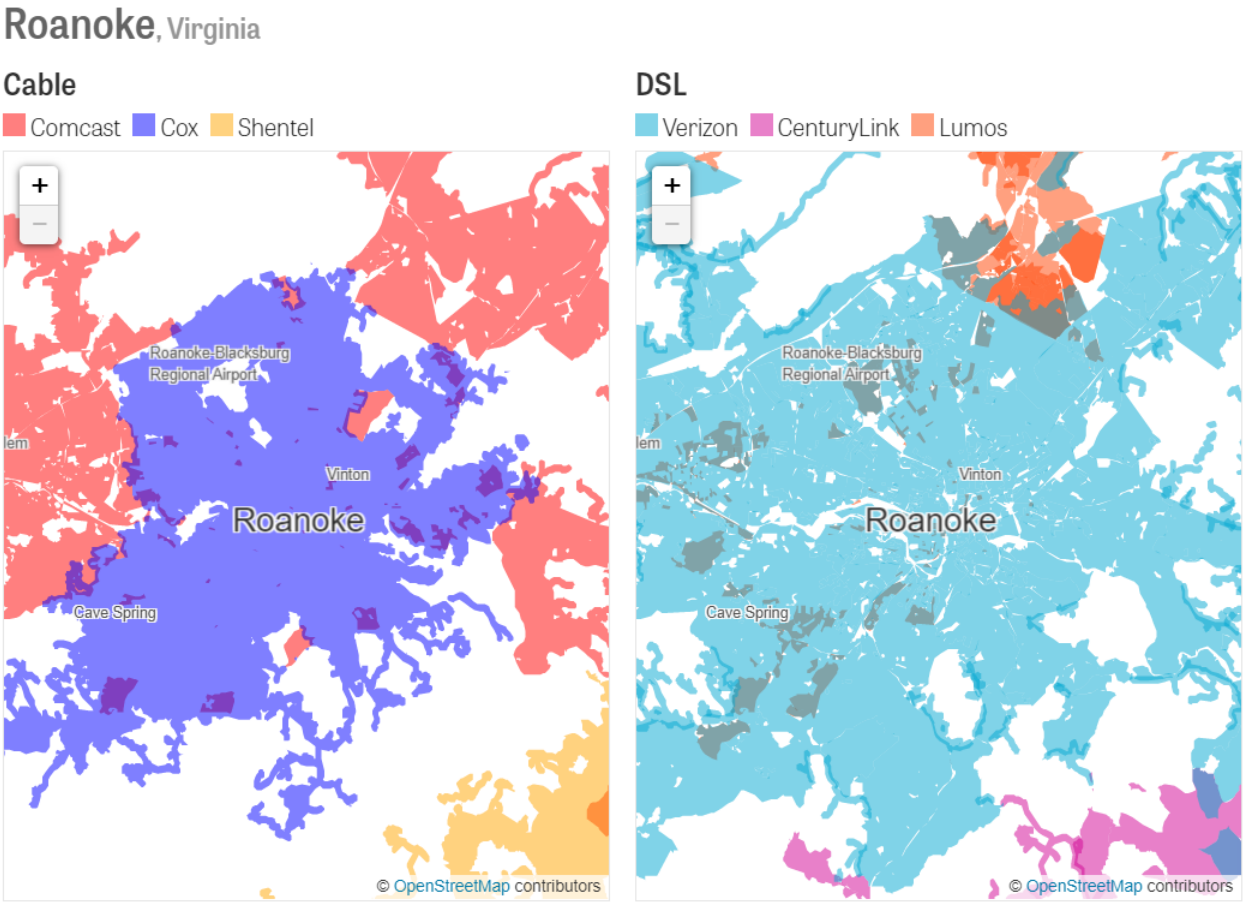
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Artifact #4 - Literature Review

A Look at the Factors Influencing Decisions Within Large Organizations

Literature Review

It is no secret that large and complex organizations, companies, firms, and agencies have a massive impact on the course of our everyday lives. Whether through their marketing campaigns, policies they enact, movements they fund, or economic booms they create within communities, we are subject to the ripple affect they create. It is easy to think of these organizations as a single entity that easily makes these decisions that can cause a great deal of change; however, these organizations are made up of people as well. These people that exist within the organization are the individuals who are all playing roles that contribute to the decision-making process. Humans are subject to their own idea, opinions, tribalism, and desires. This innate tension that exists makes it impossible for the employees of an organization to not be affected by the politics that exist within (Landells & Albrecht, 2017). Even managers have emotions and despite their best efforts, often include some level of emotion or heuristics into the decisions they make regarding their personnel, which may have rippling effects throughout the organization and then the greater community (Struthers, Weiner, & Allred, 1998). As these organizations grow in power, along with the ever-increasing strength of sophisticated technology, they have an increasing level of influence in our lives and the decisions made that affect us as a whole (Chary, 2007). With this in mind, it becomes clear that we must better understand how decisions are made within these organizations.

In this literature review, I will be examining studies that attempt to look at the drivers that affect organizational decision-making. The knowledge gained from this literature review

will assist with the assembly of my portfolio dedicated to the topic of broadband implementation and the fostering of competition or increased regulation within the broadband sphere. Understanding the processed that drive decisions within stakeholder organizations, such as the Federal Communications Commission (FCC), will allow more insight into how effective decisions that benefit the majority are successfully made and whether there are forces within the broadband sphere that hope to stymie change with the goal of personal gain.

There is extensive research on the topic of decision-making and organizational change. I have identified three themes for the purposes of this literature review and will be organizing the literature review into them as follows: (1) The People Within An Organization, (2) How Technology Has Changed the Decision-Making Process, and (3) Organizational Structure and Purpose. I will then offer a conclusion on the information covered and how it may inform future research or action moving forward.

The People Within An Organization

Hiring and then training new employees is arguably one of the most important aspects of defining and organization's culture and values; training sets up employees for success and is a crucial aspect of management (RIZESCU & RIZESCU, 2014). Motivating employees and encouraging crucial practices is essential to the development of a high-performing organization. When an organization has a large number of apathetic employees due to stress, problems with management, or a lack of recognition this can lead to high turnover, the prevalence of overlooked rules and regulations, and a general lack of productivity (RIZESCU & RIZESCU, 2014). Managers are usually the ones most responsible for making sure that effective training practices are being implemented. The organizational culture is a framework that is used to

conduct all processes within the organization (RIZESCU & RIZESCU, 2014). Therefore, the culture that the people of an organization prescribe to can have an enormous effect on the stakeholders outside the organization, even if their values differ greatly from the comparably smaller population of the organization.

After training, employees are consistently adhering to workforce development plans that are typically laid out with at least some help from Human Resources (Nooraie, Lohfeld, Marin, Hanneman, Dobbins, & Yousefi Nooraie, 2017). An employee's workforce development contribute directly to the employee's career and their perspective of the organization and its purpose as a whole. This directly affects the decision-making process of the employee; the significant factor here is that the employee is being developed by an organization that already has its values in mind which are bound to influence the development of the employee (Nooraie et al, 2017). The structure of formal and informal social networks that result from workforce development (structured training versus time spent with colleagues) cements the culture of an organization through perceived norms (Nooraie et al, 2017). It would seem that outside thought, innovation, and change is naturally discouraged at the lower levels of an organization. Entry-level employees are rarely taken seriously in regard to opinion, this points to increased cultural power and influence of high-ranking employees. This may seem obvious, but what happens if the leader(s) of an organization are suddenly changed and they have very different ideas? The uprooting of company culture not only affects the organization, but the greater community as a whole.

Further research shows that individuals struggle immensely with making decisions based purely on the interest of the organization (Struthers, Weiner, & Allred, 1998). Many managers

make decisions regarding personnel, such as hiring and firing, based on casual attributions. Where one manager may consider someone to be an outstanding employee, another may see one particular flaw and reprimand them until they are forced to resign (Struthers, Weiner, & Allred, 1998). The same is true for the decision-making process. If people, managers in particular, are constantly in flux and basing decisions off of their own perceived attributions, then there is room for human error and a lack of thorough analysis. This can lead to a decision being made that is not in the interest of the many and portrays how just a few people can make major decisions when the proper checks and balances are not in place.

How Technology Has Changed the Decision-Making Process

The organizational environment has seen recent outstanding change through globalization as well as information and communication technologies (Chary, 2007). Information communication technologies have reduced the size and organization needs in order to be effective or hold power. Fewer staff at all levels means that there are less voices to be heard and gives power and information to the few, increasing the concentration of power into a smaller group of people holding valuable information (Chary, 2007). Furthermore, globalization has removed boundaries to influence and change and has given the groups with increased concentration of power considerably farther reach. This increased power, and increased reach, as condensed the decision-making ability of organizations again allowing a small number of individuals to make decisions affecting a much broader community (Chary, 2007). Executives in organizations trend towards downsizing themselves and this results in an opaquer decision-making process. If someone with a particular agenda manages to infiltrate the process, they may make decisions that are not in the best interest of the organization or

broader community. Understanding how these organizational elites' function, what their process is, and how they came to their decisions is paramount in making sure that the best decisions are made (Chary, 2007).

Technological change in organizations is not always a negative thing. The FCC allows for informal comments from the public in order to express opinion and possibly influence outcomes (McGregor, 1986). As technology has improved, opportunities for these sorts of public and employee engagements have as well. These practices may not always influence the concentration of power, but they allow for the possibility of organizations to work with their communities towards common goals.

Organizational Structure and Purpose

The structure of an organization and why it exists plays a substantial role in its decision-making process. While individuals own ideas can affect decisions, so can the role that they have been given affect how they operate (Bisel, Ford, & Keyton, 2007). An individual is who he or she identifies as and the title, role, or identity that an organization gives its employee will affect their decision-making. If there is a miscommunication between the organizations goals and what the individual perceives as the goals then there will result a decision that is not in the best interest of the company (Bisel, Ford, & Keyton, 2007).

Organizational politics also plays a major role in decision-making at all levels of the organization (Landells & Albrecht, 2017). Employees vary on their perceptions of organizational politics as a positive or negative force, but there is no denying that politics within an organization play a key role in decision-making. By understanding the role that organizational politics plays, one may better understand how decisions are made. This applies to everywhere

within an organization from executive teams to ground-level employees (Landells & Albrecht, 2017). It is important to understand the political environment of each organization separately. When considering how impactful decisions are made, outsiders trying to study an organization must assess the ideas, groups, and power of politics within (Landells & Albrecht, 2017).

Conclusion

It is clear that organizations are powerful and complicated entities. They are made up of individuals with their own thoughts and desires, they are organized into systems that further affect the individuals and either empower or restrain them, and they are enhanced by technology that has changed the very makeup of these groups. Further research should focus on detailing common structures of major organizations as well as why these structures exist. By understanding reoccurring themes in organizational structure, accounting for technology while doing so, we may better understand how the structure affects decisions made and begin to experiment with varying the makeup in a way that empowers the people of an organization. It is important to not hastily blame an organization for its decisions, often they are a result of a select few or systems that may be biased towards that outcome. Look instead to learning how to format organizations so that more participation is introduced into the process, both from within and from without.

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Artifact #5 – Organizational Structure of the Federal Communications Commission

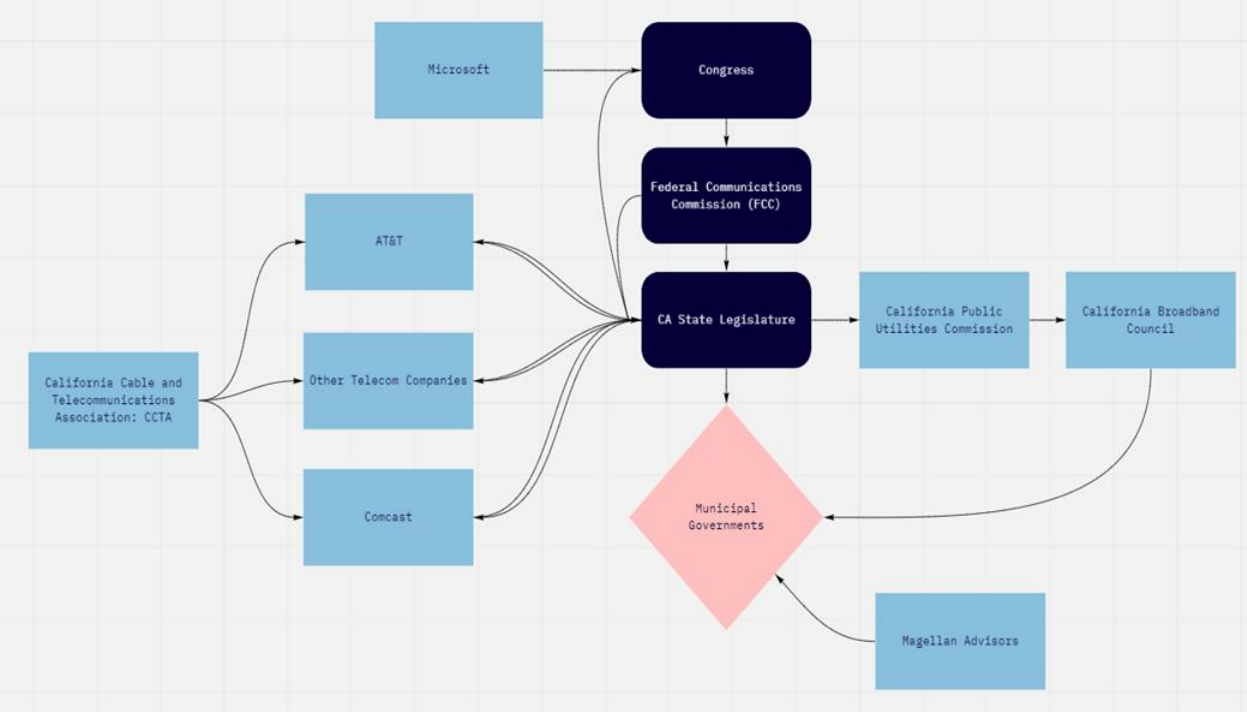
Part 1: Introduction and Visual Map

Campaigning for the presidency in 1932, Franklin Roosevelt said: “Electricity is no longer a luxury; it is a necessity.” Indeed, the same is now true for broadband. The COVID-19 pandemic has required significant numbers of Californians to telework, learn via distance education, and receive healthcare through telehealth. The movement toward these technology platforms highlights the state's inequities in access to computing devices, technology tools, and connectivity (Quaintance, 2020). The pandemic has exposed the severity of the issue and shows California that broadband is the next utility, needed in order to function at a basic level in modern society. Historically, internet service providers (ISP’s) have invested heavily into opposing municipally owned broadband networks while also refusing to expand into communities deemed unprofitable. This lack of desire to expand or to provide sufficient broadband coverage, paired with the heavy opposition to the development of municipal broadband, has left 1.7 million children without broadband and 945,000 without internet connection at all (Goss, Lee, & Gao, 2019). Now, Microsoft president Brad Smith, echoing Franklin Roosevelt, has recognized broadband as the electricity of the 21st century and is calling for congressional action to fund broadband connectivity as part of a coronavirus relief package (Baker, 2020). The need is great, the players are powerful and numerous (see figure 1), and decisions made in regard to broadband now have the potential to seriously affect the telecommunications industry and individual connectivity for years to come.

Throughout part II of this analysis, I will be diving deep into the inner workings of the Federal Communications Commissions with the hope of better understanding how the

structure of the organization drives the choices that are made and how they may affect broadband looking forward.

Figure 1:



Part II: Organizational Purpose & Structure of the Federal Communications Commission (FCC)

The organizational purpose and structure of an entity, be it government, nonprofit, or private sector, has an outstanding effect on the efficiency, decision-making, purpose, and development of the organization. When considering the importance of broadband, paired with the enormous amount of money that the many stakeholders have invested or hope to continue earning, the structure of our organizations that have the power to make nation-altering decisions that affect an extremely large amount of people should not be left open to error. The Federal Communications Commission is a massive player in the game of broadband connectivity and presides over every other public and private entity that has a major stake in broadband, answering only to Congress. In this analysis, I will first be giving an explanation of the organizational purpose of the FCC along with a brief history of how its purpose came to be. I will then give an overview of the organizational structure of the FCC, how the FCC runs on a day-to-day level and what critical values and norms govern its culture. Finally, I will present an analysis of whether or not, and how, the purpose and structure may affect future efforts to address the rules surrounding broadband moving forward.

The Federal Communications Commission, or FCC, is an independent federal regulatory agency that is responsible directly to the United States Congress (National Telecommunications and Information Administration). The FCC was formed by the Communications Act of 1934 to replace the outdated radio regulation functions of the Federal Radio Commission. Since 1934, well before broadband had been developed, as televisions began to expand and the communications field was becoming more and more complex, the FCC has expanded its mission to include the regulation of interstate and international communications by radio, television,

wire, satellite, and cable in order to ensure that all forms of communication are able to co-exist (National Telecommunications and Information Administration). While the organizational purpose as a whole does not seem to be widely under debate, recently the power of the FCC over the regulation of the internet has come into question as decisions that affect everyone are being made increasingly along party lines (Selyukh, 2017). The FCC's jurisdiction includes all 50 states and the territories, the District of Colombia, and U.S. possessions. Lastly, the FCC's mission culminates into four strategic goals: to close the digital divide, to promote innovation, to protect consumers and public safety, and to reform the FCC's processes (About the FCC).

The FCC is headed by five commissioners who are all appointed by the president and then confirmed by the Senate for 5-year terms (National Telecommunications and Information Administration). The president also chooses one of the five commissioners to serve as the chairman over the others. The chairman delegates management and administrative responsibility to the other commissioners who also preside over their own committees. Organizational functions are then delegated to bureaus and offices that operate within their own sphere of control (Organizational Charts of the FCC, 2020). There are seven bureaus and nine offices of which the 1454 FCC employees are dispersed throughout. The nine offices all operate under a simple structure, with only one or two tiers under the acting management of the office. The offices all also have a single, set, and clear goal in mind when approaching their day-to-day tasks, of which seem to focus on more support-type roles that help to deliver administrative assistance and alleviate pressure off of the bureaus (Organizational Charts of the FCC, 2020). The seven bureaus, while all connected, are all run as seemingly independent organizations of their own, but in pursuit of the greater FCC goals, such as enforcement, media,

wireless communications, and consumer & governmental affairs. Each bureau is run by a chief that oversees the day-to-day activities and who reports to the commissioner(s) that preside over the bureau. The bureau chief has anywhere from one to four deputy chiefs who assist with managing the bureau staff (Organizational Charts of the FCC, 2020). Each bureau is then divided into divisions that focus on a particular piece of that bureaus overarching goal, these divisions then, generally, have their own chief, deputy chief, and a small number of staff to round out the organizational structure. In summary, this organizational structure culminates into a top-down, centralized, and formal agency. Power and authority is concentrated at the top with the president and then delegated down to the commissioners who then delegate further onto the bureau chiefs, and office managers, who delegate onto their respective divisions. The FCC appears to be some combination of a machine bureaucracy and divisionalized form, with a large technostructure and support staff structure with clearly defined goals, but divisions that may operate independently of one another for extended periods of time (Bolman & Deal, 2017).

The structure of the FCC is to regulate all forms of mass communication in our modern day. These communication forms have grown rapidly in the past couple decades and have presented numerous possibilities as well as problems for society to solve. The FCC, being at the forefront of determining the best courses of action to solve these telecommunications problems, is positioned in the seat of power when it comes to expanding broadband. Unfortunately, broadband and telecommunications as a whole has become a partisan issue (Pressgrove, 2020). The purpose of the FCC is clear enough, however, opinion on how to pursue the goals of the organization varies, even at the top. Since the FCC is organized from the top-down, power to make decisions is granted to those at the very top and since the president of

the FCC is chosen by the president of the nation, personal politics and opinions can shape the entire nature of the organization, affecting the policy outcomes for generations to come. Since the FCC influences the policy around broadband, such as whether or not municipal governments are allowed to develop their own networks, whomever is able to influence the FCC is largely in control, largely the one in power over broadband regulation (Shafritz, Jang, & Ott, 2016). Politics plays a major role in the development of communications. Starting at the federal level, leaders are able to make decisions for the entire nation that are not always in favor of everyone throughout such a large country. Due to the nature of the FCC as a machine bureaucracy, there is little room for flexibility once a mandate has been passed down (Bolman & Deal, 2017). This all culminates into a system where those in power determine how they think the organization's mission should be carried out and then pass it down to an organizational body who carries out the task without much thought. There is a constant power struggle over the direction of the organization, though this is a by product of the power struggle within the federal government and can result in major organizational shifts as new parties take office. The result is an FCC that is able to drive change or stifle it based on the beliefs of those in power.

In essence, it would seem that in order to drive the development of broadband nationally we would need for there to be a policy window to do so, such as COVID-19, as well as leadership that agrees with the proposed changes highlighted by the policy window. The structure of the FCC is reliant on the decisions of the few seated at the top, and the mission is interpreted by those few as well. There are independent movements in many states and municipalities that seek to expand their own broadband; however, these movements are often

stifled by the laws laid down by the FCC. The success or failure of future efforts to address this policy issue will depend on the leadership at the time and how they think the efforts support the overall mission of the Federal Communications Commission.

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A Reflection of My Growth in PPA

As an individual who never found politics particularly engrossing, I was surprised when I began to find many Governing Magazine articles relating to state and local issues to be quite interesting. While working in a property management and sales role, I began to find an interest in these wicked problems that plagued smaller governing bodies. After some brief research I found myself applying to Sacramento State's Public Policy & Administration program, was accepted, and that is where my PPA adventure began.

My growth during my time in the program has been, in my own opinion, outstanding. Going from reading articles on the topics to learning how to apply different frameworks, lenses, formulas, statistical analysis, economic theory, finance, and many more principles has allowed me to evolve professionally in ways I never thought I would. It is hard to measure change of oneself as it is occurring, but when considering the ease with which I have been able to complete internships with the City of Elk Grove and Caltrans, only the skills that PPA has imbued me with have allowed me to do so. I was, by self-proclamation, adept at many soft-skills prior to the program, but PPA has granted me many hard-skills which have focused my abilities into a more marketable and professionally skilled package. The intensive writing courses further developed my ability to write cohesively and analytically. But more surprising was the coursework in economics, statistics, finance, and other more quantitative subjects that helped me to shed my fear of such topics. Through the application of these practices to policy, I was able to develop a comfort never experienced before when working with quantitative methods.

Through the PPA program, I was able to gather experience working for the Mayor of West Sacramento, the City Manager of Elk Grove, as a graduate assistant for Caltrans, part-time, but with the same duties many full-time employees possessed. The rigorous combination of academic theory and methods, applied to the practical and professional environment of these positions has allowed me to develop a confidence in a field that I never thought I could possess. During the course of my PPA experience I happened upon my chosen culminating project topic, completed projects in relation to it over each of my four semesters, and then decided to tie it all together as my culminating project. Throughout the rest of this reflection, I will detail how my study of broadband has developed over the course of the PPA program.

I became interested in the structure, economics, and politics of telecommunication companies while experiencing terrible customer service when I was attempting to utilize their services. Through my initial research in PPA 200, the introductory class, and 220A, an applied economics class, I came to a number of conclusions. I inferred that the lack of competition was a major problem, that telecommunication companies were lobbying to dissuade municipal government from establishing their own broadband, and that broadband should become another utility. I was a zealous advocate for either heavy regulation, akin to a utility, or a complete elimination of all roadblocks in front of municipal broadband. However, overtime and with continued study, I began to understand how complex meaningful change would be. Many different fields and government bodies would need to align for change to occur. Even then, as I became more acquainted with economic theory, finance, and how cities are run, I realized how expensive broadband is to install. Even if a city was allowed to develop their own network,

would it? A cost benefit analysis may determine it to be a difficult project to justify as the networks often exceeded an entire years' worth of a city's budget.

There were also other factors to consider, beyond better price and quality of broadband, something competition would bring about, how would providers extend coverage to rural areas. I began to see that municipal broadband may not be the best answer in every instance. Realizing that telecom companies are not going anywhere anytime soon, I became interested in how they operated from the inside out. Though tough to discern without conducting interviews (courtesy of COVID-19) and not having worked for one, I found myself understanding how decisions are made within telecommunication companies, and further shaped by government action. Finally, my developing interest and project was propelled forward by the onset of COVID-19. The sudden shift to distance learning and working from home thrust the issue of broadband expansion to the forefront of discussions among every circle I am a part of, not to mention the many published articles on the subject.

The theories applied to my topic have all helped to shape an understanding that is both broad and deep. The chance to utilize MPPA course lessons has allowed me to practice utilizing new lenses each time I consider the broadband topic. Though I may not continue my study of broadband in my professional career, I have learned how to take a topic and study it from many different perspectives. This will allow me to quickly understand a topic and subsequently formulate a stance and come up with possible solutions, assuming there is a problem. Should I be given the chance to explore broadband in my professional life I would welcome it. I have recently been offered and subsequently accepted an entry-level position in a management consulting firm located here in Sacramento. Quickly learning and understanding a topic or

professional field is essential to the career, as is then developing ideas and solutions to problems that plague the field. Nevertheless, broadband is a topic of strong interest in this day and age. I will continue to follow the development of broadband policy with vigorous interest and, should my life permit, offer my limited expertise in some capacity should the opportunity present itself.

In essence, my time in Sacramento State's Public Policy & Administration program has developed me into a more focused, efficient, and refined professional with the ability to critically analyze public policy and administration using a large and varied toolkit. Beyond that, my overall abilities have evolved when considering writing, research, statistical analysis, and public speaking. My culminating project, focused on broadband, gave me the chance to observe my own change in opinion through my development and exposure to new classes that each had their own way of approaching a subject. I have immensely enjoyed the growth that I have experienced during my time in PPA and, with the skills acquired, I excitedly look to the future, and whatever it may hold.

Professional Development Artifacts:

Resume:

Sean M. Lemar

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Professional Experience:

California Department of Transportation: Sacramento, CA — October 2020 - Present
Strategic Management & Communications Associate

- Strategically implement communication programs within the division that improve employee engagement and relationships with management. This included writing and designing the first internal division newsletter, using Adobe InDesign.
- Draft policy papers, plan project implementation, and perform data analysis.

City of Elk Grove: Elk Grove, CA — June 2020 - Aug 2020
Graduate Assistant to the City Manager

- Drafted staff reports, received feedback from multiple superiors and all involved departments, then prepared presentations to give to City Council.
- Conducted policy research on a variety of topics and programs by utilizing available data and policy practices from other cities and institutions with similar programs.

Sacramento State University: Sacramento, CA — September 2019 - June 2020
Graduate Assistant to the Mayor of West Sacramento

- Worked with a respected public official to design, implement, and manage a public policy prototyping & innovation lab and a tactical democracy foundry.
- Developed project-management skills through the planning of a speaker-series that sought to attract members of Sacramento State and of the greater Sacramento policy community.
- Assisted with research on whether smart city sensing technologies are changing fine regimes and affecting justice inequality.

Irvine Company: Irvine, CA — July 2017 - June 2019
Leasing Consultant

- Interacted with clients of all backgrounds and financial status with the ability to handle sensitive topics and maintain a professional level of confidentiality.
- Conducted in-person sales presentations and secured leases with first round closing skills.
- Maintained high occupancy levels within the community by successfully leasing apartment homes and achieving monthly leasing quotas.
- Successfully marketed the property, generated traffic, and prepared lease documents.
- Was responsible for lead tracking and obtaining a high closing ratio.

Education:

California State University, Sacramento — August 2019 - May 2021
Masters in Public Policy & Administration

California State University, Long Beach — August 2015 - May 2017
Bachelor of Arts in Communication Studies

Cover Letter Template:

Sean Lemar
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sean.m.lemar@gmail.com

March 25th, 2021

To Whom it May Concern,

My name is Sean Lemar and I am writing in regard to the **(insert title)** position in Sacramento, CA. I am a current public policy & administration graduate student (MPPA) at Sacramento State, with a May 2021 graduation date, who has worked in higher education, local government, and state government while obtaining my master's degree. Prior to that, I held a full-time corporate property management and sales position for two years. In this cover letter, I will detail the reasons for my interest in the position and highlight the qualifications I believe make me qualified for the position.

Since finishing my undergraduate degree in communication studies, I have had interest in strategic communications, business administration, organizational structure, and public policy. The idea of working with an established firm that champions **(insert something about company)** excites me and I am eager to excel and contribute to **(insert company)** using the skills I have acquired thus far. I am looking to launch a career and believe that joining your organization would be an excellent way for me to learn, grow, and succeed, while contributing to your mission.

My time in graduate school has improved my existing writing and research skills and has granted me a strong knowledge base in public policy, economics, statistical analysis, and public affairs. While working in a client-facing sales position, I had the chance to develop client relationship skills and an ability to work independently while striving for, and achieving, goals. My three graduate assistant positions in higher education, local government, and state government have each contributed to increased knowledge in project management, writing, presentation skills, and design capability, most recently with Adobe InDesign. Looking toward my final semester, I will be working with a student group to develop a communications plan, in a consulting capacity, to a non-profit in the Sacramento region, I will be completing a portfolio project on the topic of broadband, and am looking to increase my 3.83 gpa.

I believe that my education and experience have prepared me to be a competitive applicant for the **(title)** position with **(company)**. I would appreciate an interview to discuss further and I would be honored to be given a chance with your organization.

Respectfully,

Sean M. Lemar

Professional Development Goals:

I have identified the following professional development goals as loosely based milestones I will try to reach within my career. They are in order of completion, though that order is subject to change.

1. Accept an offer at a company that I believe will turn into a career.
2. Excel at my new position and focus on standing out from the competition during my first couple years.
3. Study my profession outside of work hours. Try to log 3-5 hours a week of outside study.
4. After building comfort in the profession, begin to actively focus on expanding my professional network.
5. Identify and secure a professional mentor.
6. Look toward securing additional education and/or certifications. These can include the following:
    - A degree in computer science.
    - Certification as an Organizational Change Management practitioner.
    - Courses in project management such as Lean Six Sigma.
    - A Project Management Professional (PMP) Certification
7. Continue to climb the organizational ladder.

Re-assess my position in life and adjust accordingly