Broadband and Rural America

Restart, Recovery and Resiliency

October 2020

Rural Broadband in our Pandemic World

The world COVID-19 pandemic health crisis has greatly disrupted our lives with millions of Americans now infected and deaths approaching 215,000 according to Johns Hopkins University data. While the worst effects of the pandemic have largely impacted more densely packed metropolitan areas, it is now spreading hot spots to rural America. One of the major pandemic health measures is to home-base students and workers when possible (e.g., home-basing, or remote work). Whether educational lessons, working from home or just filling some hours with streaming movies, the importance of high speed, reliable and affordable broadband has taken on greater importance. Furthermore, it has illustrated the "have" and "have not" situations across America where access to necessary broadband is not universal. We must learn from this crisis that universal access to broadband is now as important as good roads, health, and safe water. For rural America uneven access to broadband continues to undermine both development and quality of life.

Broadband is now a necessity with our increasing use of the internet and smart technologies like cellular phones, video conferencing and the exchange of information via the internet and cellular services. Across America there is uneven access to broadband based on infrastructure and cost. The pandemic health crisis has illustrated in so many ways the importance of broadband. The broadband crisis pre-existed the Pandemic but now we have so many examples of students, workers, and businesses left behind because of uneven and inequitable access to this powerful technology. In this paper – **Broadband and Rural America – *Restart, Recover and Resiliency*** – we hope to share some insights on why broadband is such a challenge in parts of rural America and solutions that could move beyond the talk of universal access to broadband to actual universal access. In America, equitable access to opportunity is part of our mythology. The time is now to make this mythology reality.

Luck and Geography Matter

At e2 we are not experts in the field of broadband. But wherever we work broadband is either a challenge or development asset. For a long time, we struggled to perceive the patterns of why some rural communities had relatively strong broadband offerings while others did not. Even before the pandemic we learned about challenges of students (e.g., Appalachian Kentucky) without adequate broadband at home doing internet research or in the parking lot of the local McDonalds offering free Wi-Fi access. So, what have learned about the unevenness of broadband across rural America?

Like most complicated issues there are many factors at play. But the central difference between access to reasonable broadband is your provider. Telecommunications, including phone, cable and now broadband, has moved from an era of single regulated monopoly providers to an increasingly unregulated open market system. Later is this paper we address the realities of low density and high costs markets with respect to broadband including both myths and realities.

Focusing on our home state of Nebraska where we have deep field experience, we first discovered this pattern of broadband "have" and "have nots." Communities and even rural areas served by providers committed to universal and high-quality broadband were experiencing access comparable to any market in America. We also found providers, generally larger incumbent companies, where there was not this commitment. We found that committed broadband providers typically were locally and regionally rooted companies and cooperatives where their sole market were the rural consumers in their service areas. Conversely, where services were weak, we often found larger national companies that were investing and competing heavily in urban markets but disinvesting in rural markets. Communities

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struggled with these providers to do better but often lacked the leverage to find alternative providers due to lower density markets or the policy tools to force better service.

Cost and Technology Mythologies

For many years now weak performing rural broadband providers argued that offering higher speed and more affordable broadband was impossible due to technology challenges (e.g., serving customers in mountainous areas for example) and costs (e.g., due to weaker market demand compared to cities). There is no question providing high quality and affordable broadband in rural areas has technology challenges and weaker income potential when compared to densely packed suburban areas with high usage among resident and commercial establishments. But as we observed this uneven playing field we began to discover locally and regionally owned providers finding ways to bring higher quality and more affordable broadband to comparable geographies. While the likely return on investment is lower in rural areas, we became convinced that even in the most challenging landscapes (e.g., rural areas of Ozarks) it was both financially and technologically feasible. Again and again we returned to the underlying reality of the commitment of providers to provide high quality and affordable broadband was the difference.

Learning Hard Lessons from the Pandemic Shutdown

Access to broadband is not the only challenge faced by rural America. As we transition from denser rural landscapes adjacent to major cities or rural areas in parts of Northeast and Midwest to more frontier like landscapes in the Great Plains or the Rocky Mountain West, there are many market realities throughout rural America. But for those areas that are "more rural" we have low density and high cost markets where providing everything from groceries to health care is more challenging and provides more limited return on investment. Across these more sparsely populated vast regions of rural America we are now seeing an old (e.g., cooperatives) but new form of community venture to ensure everything from quality food to health care access via community owned ventures. These ventures recognize that traditional for-profit return on investment margins are not as possible and have turned to innovative ways creating financially sound ventures, but with lower margin expectations.

Locally and regionally owned broadband providers need to be financially sound and if they are a for-profit venture, they must make a profit. But their market is also their hometown creating a deeper commitment to find solutions to ensure broadband access. For larger national providers there is more money to make in their urban markets distracting investment and commitment from rural markets thus creating the unevenness of broadband access across America.

Realities of Low Density and High Cost Markets

In market-based economies we assume that private sector competition will provide choice, better prices and higher quality goods and services. This assumption is by and large valid in more urban areas where there are sufficient consumers to ensure multiple players resulting in fewer consumers left behind. But even in urban markets there can be broadband unevenness and a digital divide. Poorer households are less able to afford computers and other technology devices and the cost of high-quality broadband access. For rural America where we typically have lower density and higher cost markets, we may have just one provider and generally no or weaker competition. Higher costs associated with thinner market demand from which to spread both fixed and operating costs can price many rural consumers out of the market even when higher quality broadband is available. Later in this paper, we discuss solutions, and the need to provide consumer and/or providers assistance to overcome these market differentials will be discussed as broadband must be universally available.

Back around Thanksgiving 2019 I moved my office home as part of my career transition. I chose a rural based broadband provider, Allo Communications (www.allocommunications.com), that started in Imperial (2018 population of 2,074 located in rural Southwestern Nebraska) in 2003. Allo has since moved into the Lincoln, Nebraska, market where I live. At the writing of this paragraph my download speed was 507 Mpps and my upload speed was 508 Mpps. During parts of the pandemic we had myself, my wife and two adult sons working and living from home all employing video conferencing, video streaming and other broadband dependent services. Not once did we experience slow service or disruption of service. The overall cost is actually lower than what was being provided by our previous cable company provider with slower speeds and disruptions. Unfortunately, for too many Americans, particularly rural Americans, broadband service is marginal with one user let alone with multiple users at the same peak time of day.

Universal Access is Foundational

The Pandemic Recession has once again demonstrated in so many ways that access to affordable and high-quality broadband must become an essential service equivalent to safe roads and water. For too long we have been talking about the inequitable access to broadband as it has become more essential in our work, education, entertainment, and day-to-day communications. Despite all this talk and policymaker commitments to bridging the digital divide, huge challenges remain for many communities and rural areas.

Importance of Digital Literacy

Leveling the playing field requires not only access to high speed and affordable broadband but also digital literacy or the ability of ventures, organizations, communities, students, and residents to employ broadband effectively. Corresponding with solving the digital divide we must also commit public and private resources to raising digital literacy among all Americans. Digital literacy is particularly important to rural America where access to information, eCommerce, distance learning, smart agriculture and other applications can overcome low density and lack of physical access to critical goods, services, and markets.

Flawed National Policy

Central to the have and have not broadband landscape in rural America is in large part due to flawed national policy. Consider the following as we craft new public and private policies to ensure high quality and affordable broadband regardless of where you work, go to school or live:

> **Standards.** The first flaw is the lack of adequate federal and state standards with respect to what constitutes high quality and affordable broadband. Our family and workplace are fortunate to have a for-profit private broadband provider that is community-centered and committed to providing exceptional service at a reasonable cost. For example, I use video conferencing multiple times every day in my work. Even with multiple users we have no deterioration or disruption of service. Other options in our current hometown of Lincoln, Nebraska (e.g., small metropolitan area of 300,000 residents) provide less robust service often at higher costs or is bundled with other services. In a country that continues to struggle to make health care access a right, we must push forward to create standards that change with times (e.g., evolving uses) and circumstances (e.g., COVID pandemic home basing).

Powerful Telephony Lobbies

There is no reason to paint larger broadband providers as indifferent to uneven service. But Allo Communications is achieving success because of the unwillingness of incumbent providers to do better. Powerful telephony lobbies have helped shaped both federal and state policies that have contributed to the digital divide. It is for this reason we advocate for both changed public policies and the creation of mechanisms for consumers to drive change in providers when services are not meeting robust standards coupled with affordability.

> **Coverage Maps.** The current Federal Communications Commission (FCC) requirements for broadband providers with respect to broadband provision are in so many ways inadequate. Meeting the FCC requirements is easily possible while really not providing adequate broadband to most consumers in a provider's service area. For example, the FCC speed requirement is so low that while in theory they are providing service, subscribers can't access or run Netflix or other popular streaming services. Again, not all broadband providers play this game. There are providers in rural America committed to exceeding FCC requirements because they consider rural America their hometowns.

University of Nebraska at Kearney Research Project

We have been watching an emerging research project at the University of Nebraska at Kearney where actual broadband speeds and reliability of service can be measured over a seven-day period of time providing a much more comprehensive picture of broadband quality in rural Nebraska. Emergent data from a modest pilot project using technology that can be mailed to consumers to measure their broadband during this pandemic period is powerful. Efforts are underway to procure additional funds to significantly expand testing thereby providing a more comprehensive picture of actual broadband quality during real usage periods. This kind of information can be used to drive provider and policy change to pursue more universal service.

> **Commitment to Provide.** There must be higher standards for broadband providers to provide robust capacity at affordable prices. Mechanisms need to be in place to drive providers to commit to provide robust service or sellout to providers who are committed to states, communities, and consumers. The University of Nebraska Kearney testing research project is a promising tool to actually determine broadband capacity at different time of the day and week. This research could empower consumers and the communities they live in to seek redress with a national and state framework that requires a commitment to provide at evolving standards throughout their service area.

> **Divestiture.** Our experience in Nebraska does not necessarily reflect other parts of rural America. But providers unwilling to provide robust service at reasonable prices should be forced to divest and allow other providers willing to make the investment to provide cutting edge capacity and services like Allo Communications or Consolidated Telephone in my home county in the central Sandhills of Nebraska.

Consolidated Telephone Company

Consolidated Telephone Company was founded by rural residents as a for-profit company in those early days when federal policy was assisting rural areas accessing not only electricity but telephone services. The heart of its service area is frontier rural country in what is called the Nebraska Sandhills. This is a

very sparsely populated region where cow/calf ranching operations are the primary economic activity. The markets are frontier in nature and providing services like telephone service is challenging where the fixed costs must be spread among relatively few customers. The owners and operators of Consolidated Telephone call this part of Nebraska home. They have a deep commitment to hometown and their neighbors. Consolidated Telephone is a great example of a for-profit company that has innovated and figured out how to bring high speed and affordable broadband to small towns like my hometown of Mullen, Nebraska (2018 population of 463) but to widely spread ranches. The question is, "If Consolidated Telephone can make this happen, why can't other providers with much stronger market conditions?"

> **Providing Aid to the Willing.** Based on our deep field work in Nebraska and Kansas, other work across rural America, and exposure to provider solutions highlighted by the National Rural Economic Developers Associations (https://www.nreda.org), we are convinced that there are existing and potential broadband providers that are community-centered and committed to finding solutions in ensuring high quality and affordable broadband to rural consumers. Federal and state broadband incentives and aid should be directed to those providers truly committed to a higher standard of behavior. Currently, aid is not necessarily flowing to providers with this level of commitment.

Moving to Universal Access

Much of rural America continues to face major development headwinds and challenges. Inequitable access to broadband is one of those headwinds. Despite the political discussion, meaningful solutions continue to be too little and too late for many rural communities. At e2 we believe that universal access to broadband is foundational to the future vitality of rural communities and for that matter all communities across America. We hope this paper provides some insight in both the challenge of the current broadband issue along with policy actions worth considering. We would love to hear from you. Share with us your broadband challenges and solutions. Reach out to me at don@e2mail.org.

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International Users. If your organization is located in or focused on non-U.S. locations, we are open to collaborative efforts to translate our work into other languages and cultures for possible use. Contact Don Macke at don@e2mail.org to explore options.

Kansas and Nebraska Users. Nebraska and Kansas have played an extraordinary role in evolving our e2 development framework. Access to e2 University resources is available free of charge to end users through NetWork Kansas and Nebraska Extension in Nebraska.

A Condition for Access and Use of e2 University Resources

In all cases e2 asks users to execute a **use agreement.** As part of this agreement*,* we require a commitment from you to share your learning back with e2. We need user feedback to continue our learning so that e2 can support entrepreneurship ecosystem building and future resources for users yet to come.

Additional Help

Don Macke is not currently accepting new advising and consulting work. However, based on scheduling availability, Don is willing to do an exploratory call to better understand your needs and expectations, and recommend pathways forward. Contact him at don@e2mail.org.

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How e2 Can Help

e2 Entrepreneurial Ecosystems helps communities increase prosperity through entrepreneur-focused economic development and ecosystem building. Led by **Don Macke,** e2 has a national team of practitioners who bring research, coaching, incubation, market intelligence and other expertise to this work.

What We Do

✓ **Mentoring.** We mentor and coach new practitioners seeking to pursue entrepreneur-led development. We provide advice and support for building eEcosystem strategies that work.

✓ **Analytics Support.** e2 helps communities and regions understand their entrepreneurial potential through research and data. Explore some of our research tools and reports here.

✓ **e2 University (e2U)** is our platform for sharing guides, papers, stories, tools, and resources with communities wanting a deep dive into eEcosystem building. Don Macke leads the e2U team with analytics support from **Cathy Kottwitz** and report preparation from **Ann Chaffin.** Special recognition for their e2U legacy contributions goes to **Dana Williams** and **Deb Markley,** LOCUS Impacting Investing.

✓ **Fostering the eMovement.** We support the national entrepreneurship movement along with our partners including the **Federal Reserve Bank of Kansas City**, **SourceLink**, **Edward Lowe Foundation**, **Kauffman Foundation**, and **NetWork Kansas**. We are a founding member of Start Us Up: America's New Business Plan, a coalition dedicated to strengthening entrepreneurship across America. Together, we continue to advance the foundational ideas of building entrepreneurial ecosystems and entrepreneurship-led economic development.

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NetWork Kansas, a 501c3 nonprofit organization dedicated to developing an entrepreneurial ecosystem in Kansas, is the home for e2 Entrepreneurial Ecosystems. NetWork Kansas connects aspiring entrepreneurs, emerging and established businesses, to a deep network of business building resource organizations across the state.