

Bowling Together:
Toward the new gigabit social contract
Blair Levin, May 30, 2013

I recently read a Wall Street research report on Google Fiber that immediately brought to mind the Gdansk Shipyard in 1980, two under-appreciated words in the Declaration of Independence and the most important sociological analysis of the United States in this century.

(You know, when you are the last speaker at a conference it is really important to start with a sentence that no other speaker has uttered.)

But that's not the only reason I started that way; the report really does relate to those other events.

Let me explain.

During the 1980's and '90's, the great journalist Lawrence Weschler wrote a number of what he called "passion pieces" for the New Yorker; about people or places that caught fire.

His most famous pieces chronicled the rise of the Solidarity movement in Poland. Weschler noted that Poles saw Solidarity "as the ultimate representation of 'the subjectivity of the Polish nation,' by which they meant its capacity to act as the subject of its own history and not the object of other people's histories. Most people all over the world spend most of their lives being objects of other people's intentions. But occasionally you have these moments where... we become the true subjects of our own lives."

We know the power of that kind of moment from our own history. Weschler's description parallels the famous insight of John Adams that, "The Revolution was effected before the War commenced. The Revolution was in the minds and hearts of the people; a change in their religious sentiments of their duties and obligations."

Equally telling—though less well remembered—is how Jefferson captured that idea early in the Declaration of Independence. In writing of how all men are created equal, he could have written that *it* is self-evident; instead he wrote, "We hold these truths to be self-evident..."

Jefferson's words reflect more than political philosophy about equality. They reflect a people becoming the subject of their own history through the collective act of holding, and acting upon, a common truth.

The actions of our forefathers or the dock workers in Gdansk who two centuries later, inspired by our revolution, came together to overturn another imperial power would not, on the surface, seem to have much to do with broadband.

But consider this paragraph entitled “extremely high awareness and very high purchase intent for Google Fiber”, penned recently by Bernstein analyst, and National Broadband Plan alum Carlos Kirjner:

*“Much of the discussion about the impact of Google's partnerships with the cities where it plans to deploy its fiber-to-the-home network has been about their impact on costs and expenses. We think there are cost benefits as Kansas City has adjusted rules and procedures to facilitate Google's construction.... These certainly have material impact on the deployment costs. **That said, we think such partnerships have very important (and often under-appreciated by investors) impact on the demand side. We think the high awareness and purchase intent for Google Fiber detected by our Kansas City survey are driven by the community involvement.**”*

In other words: Wall Street under appreciates that Google has tapped into a reservoir of interest in the community for an improved broadband service. It is that *community involvement*—something about which Wall Street has a blind spot—that drives an extraordinary 77% interest in buying the Google Fiber product—a data point on which Wall Street has a laser-like focus.

So many are surprised. But looking back, perhaps we should not be surprised by the citizens of Kansas City rallying to be the subject, not the object, of plans for a network that rivals the best in the world.

In 2000, the most discussed book of the young millennium was “Bowling Alone” by Harvard sociologist Robert Putnam. Examining the phenomenon wherein Americans increasingly moved from bowling in teams in the post-World War II era to bowling alone by the ‘90’s, Putnam documented the decline in the United States of social capital. Social capital is the collective value created by social networks and the inclination of members of these networks to do things for each other. Putnam suggests that the collective personal interactions that, as documented as far back as de Tocqueville, once wove the fabric of American society were diminishing and that fabric was fraying.

In the decade plus since, there has been much evidence to support that thesis.

But there have been some counter-examples.

Two relate to the American response to terror. On both 9/11 and April 15 of this year, Americans drew upon a substantial reservoir of social capital to mend the damage of the day.

Some may nominate other events but certainly such a listing should include the unexpected reaction by 1,100 communities to Google's offer in the spring of 2010 to build a gigabit network somewhere in the United States.

That reaction was astonishing; As Milo noted yesterday, it was far more than Google or anyone anticipated.

Why did it happen?

It is illogical to argue that it happened because consumers in 1,100 communities wanted a product—gigabit connectivity—for which there is no known consumer application and for which no price point was provided.

Instead, it appears that the common thread that drove these 1,100 communities to apply was that they realized the economy was going to be delivered increasingly over bandwidth and they wanted to lead, not follow, in that economic megatrend.

While many mayors demonstrated great leadership, the applications suggest the responses were largely driven by a broad community coalition; local governments, businesses, community groups, educational institutions, health care entities and many others joined together to apply.

The applications mirrored the National Broadband Plan recommendation for a critical mass of communities with the best networks in the world, so that we can eliminate bandwidth as a constraint to leading in the next generation of broadband innovation and applications.

The broad based community response continues. The Kansas City community involvement drove awareness that upended Wall Street's expectations. In Austin, within a day of the Google Fiber announcement, the number of people signing up—not just for the service but to help organize the community—represented more than 10% of the housing units.

And the attendance at this conference—over 400, almost three times the number that we expected in the initial planning—is further evidence that the interest in gigabit networks remains strong.

In short, the response to Google Fiber was not a demonstration of a narrow, parochial interest nor of a consumer demand for a Gig. It was a demonstration of broad and deep community desire to join together to lead in the information-rich, bandwidth-delivered economy.

In this, the communities demonstrated wisdom in understanding the importance of bandwidth in the growth of an economy. As has happened in other technological revolutions, economic growth is driven by critical infrastructure that underpins new industries and new products.

The communities also understood that market forces were not going to deliver the upgrade.

As a 2009 study on wireline deployments done in conjunction with the National Broadband Plan demonstrated, the market forces that had led to a series of wireline upgrades by cable and telco providers from the mid-1990's to the about 2007 had run their course. By 2009 neither telco or cable providers had a market-based incentive to increase the bandwidth in any geographic areas to world-leading levels; a combination of margins in the 90% and a cheaper upgrade path for the superior cable network made it difficult for telcos to challenge the lead, and removed cable's fear of losing due to telco upgrade.

That validity of that analysis has largely been confirmed by market behavior since then, though there is a robust debate about where America stands today in terms of international broadband comparisons.

There are many arguments about which best metrics best describe our current situation but I'd rather focus on the future.

I just returned from a State Department-sponsored trip to assist Myanmar with rewriting its communications laws. One thing I learned was that in 1962, it had the leading economy in Southeast Asia; now, after a series of bad decisions, it ranks at the bottom.

Wherever we are today, we should understand that the best way to lose a race is to throw your hands up claiming victory and stop running before you hit the tape. As Tom Friedman has famously written, the world is flat; pausing for self-praise instead of focusing on what it takes to develop next-generation leadership will have us eating dust instead of leading the field.

Communities also understood that an upgrade would provide what economists refer to as externalities; benefits, as brilliantly described by our first [speaker](#) Lev Gonick, that inure to the broader community but that are not captured by the network provider and therefore do not fit into the private investment calculus.

To be clear, there are direct economic benefits to the community. As Milo noted yesterday, a ratings agency upgraded Kansas City citing the economic development impact of the Google Fiber project, thereby lowering the city's borrowing costs. A recent article in the Chicago Sun Times detailed how the initially limited \$10 million dollar project that Gig.U member the University of Chicago helped kick start is already blossoming into a \$150 million economic development shot in the arm for the South Side of [Chicago](#). And that is just the start.

To capture those community benefits, a new social contract is necessary.

Today's primary networks—the telco and cable networks—were not built to solve today's problem: transferring abundant bits at very low costs. We should be grateful that brilliant engineers were able to adapt those networks to provide the United States a leg up in establishing a lead in a bandwidth-delivered economy.

But we should also recognize the economics that drove their original deployment: it was a social contract that awarded a monopoly in exchange for an agreement to provide universal service and other public goods that market forces by themselves would not deliver.

To deploy new or upgraded networks, the old framework for social contracts will not work. There is no monopoly to award.

And so we arrive at this moment.

Communities are demonstrating a passion for their future and like our founding fathers or Polish ship workers, seek to adjust the duties and obligations related to the most important platform for economic growth and social progress of our time.

They are saying that when it comes to broadband, bowling alone won't cut it. Indeed while bowling alone creates problems, thinking that one can get the broadband he or she needs through individual action is nothing short of crazy.

There is no such thing as bespoke broadband; while purchased by individuals, it is inherently something that is provided to a community or not at all.

So while the passion is there, what is the plan?

Here, I think it is important to stop for a moment to express our appreciation to Google. Yes, it is obvious that we should express gratitude for its undertaking the challenge to deploy some gigabit networks as well as co-sponsoring this conference. And we also are very grateful that Milo came to speak to us at a time when the pressures on his time are so great.

But I think we owe them even greater gratitude for how it approached the problem.

It could have easily chosen a path to maximize short-term gains for itself by auctioning off the right to be the first Google Fiber community in a way that would represent a race to the bottom and not be replicable. But instead of doing an economic development project that only works because of a large, direct expenditure of public funds—like, say, an NFL team requiring a massive local government infusion for a football stadium—Google focused on changes that did not require such payments.

Instead, it chose to proceed in a way that is replicable by other communities.

It focused on improved utilization of key inputs to lower cap ex, op ex and risk, regulatory efficiency to lower cap ex, op ex and risk, and demand aggregation to lower risk and raise revenue.

What it has demonstrated, and indeed what every session of this conference has also shown is that the deployment of gigabit networks is not a technology issue; it is an organizing issue.

Any community that wishes to have gigabit network can have it, if it is willing to organize to that end.

The reason can be expressed in this formula:

$$C + O > (1-r)R + SB + (-CL)$$

That is, under the current math, no incumbent or new entrant is likely to upgrade or build a network because the new or incremental Capital and Operation Expenditures are greater than the risk adjusted revenues plus System Benefits (benefits to an investor overall network by investing in a part of the network) plus the threat of competitive losses.

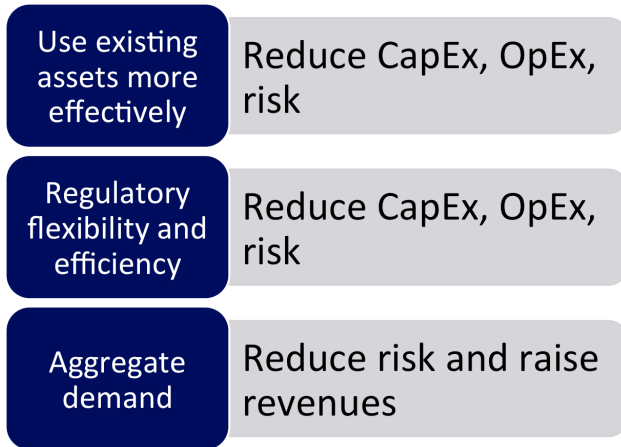
Communities that wish to have a gigabit have to change the equation to incent investment in faster broadband; they need the right side to be greater than left side.

To do so, communities must take steps that reduce the first three factors—cap ex, op ex and risk—and increase the next three factors—potential revenues, system benefits and threat of competition.

As many workshops in this conference have shown, there are three basic strategies for doing so:

- Using existing assets more effectively;
- Regulatory flexibility and efficiency; and
- Aggregating demand

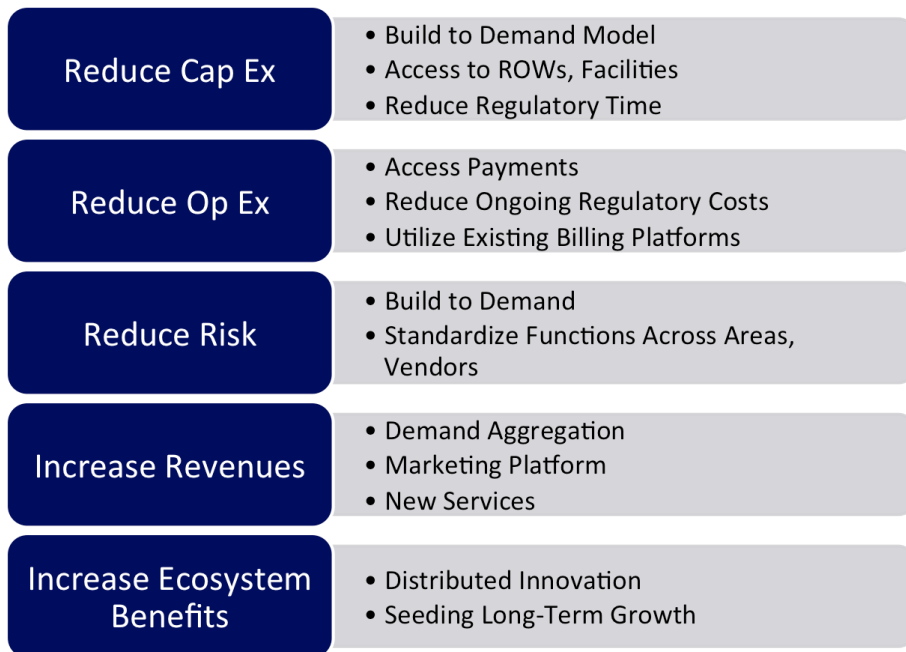
Figure 1: Key strategies to improve communities' fiber readiness



Moreover, as we have seen throughout this conference, there are a number of tactics that are within the existing power of most communities to successfully carry out these strategies.

Through these strategies and tactics, we can see how local communities and ultimately the country can accelerate an economically viable next generation upgrade. As I've discussed earlier, cities—not the [federal government](#)—are likely to lead in this effort, but we should not ignore that the [federal government](#) can be useful.

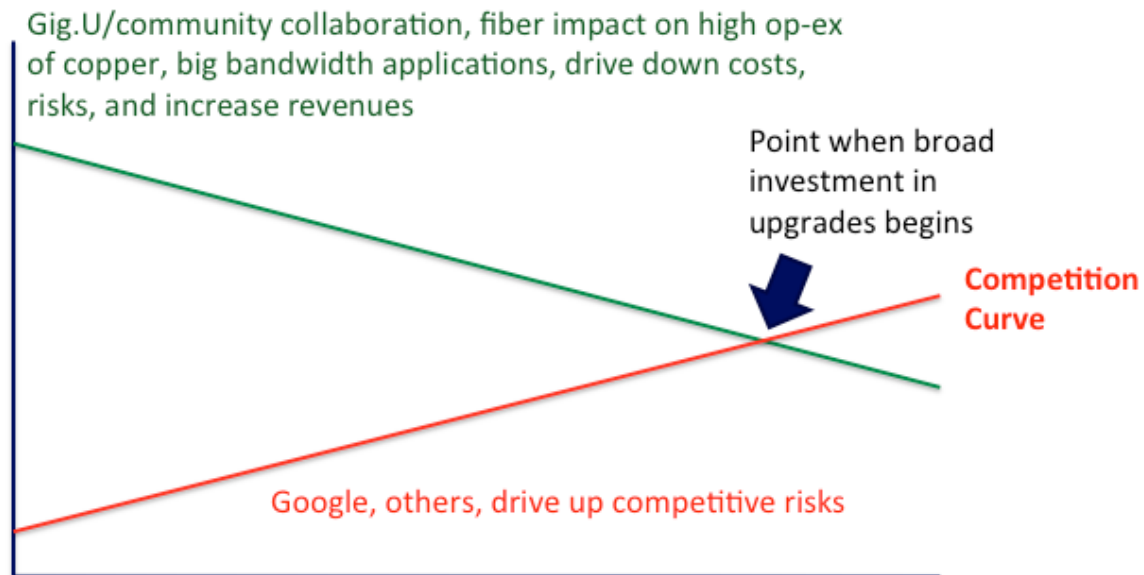
Figure 2: Tactics within existing powers of communities



A lot of these tactics involve the utilization of anchor institutions, which is one reason why university communities—which are a kind of uber anchor institution—have proven to be such an attractive magnet for [gigabit deployments](#).

When communities act to lower the cost and risk of an upgrade—while also creating an opportunity for more revenues—it drives down the cost curve, illustrated by the green line, going down and to the right.

Figure 3: National gigabit build out when cost curve drops enough to meet rising competition curve



In addition, when communities invite new competition, it raises the level of competition, as illustrated by the red line going up and to the right.

The Gig.U thesis is that when the two lines meet—when incumbents and new entrants have both a viable financial model and the financial motive—then we will begin to see the broad deployment of such networks.

We know the strategy works on an individual community basis.

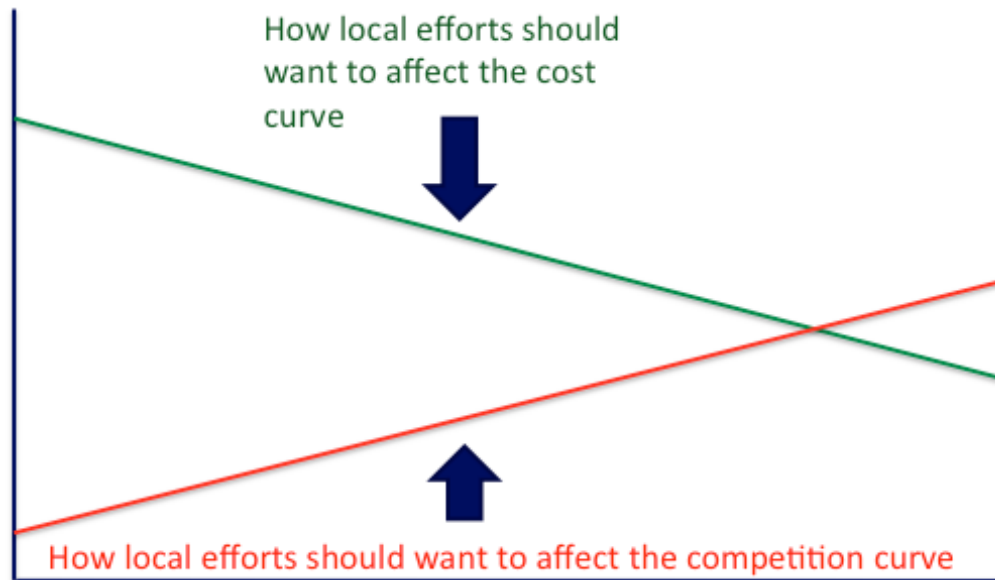
Within hours of Google announcing it was building a gigabit network in Austin, AT&T announced it was at least considering doing the same.

Shortly thereafter, Time Warner Cable announced a citywide Wi-Fi project, saying, “Google’s recent announcement encouraged us to deploy our network more aggressively now.”

And now CenturyLink, threatened in Provo, is moving forward with a small gig network in Omaha.

It is too early to know the precise parameters of how any deployments that result from these announcements, but they represent a welcome change in the public reaction to communities expressing an interest in world leading networks.

Figure 4: Policy direction is clear; bend the slope of the curves



Moreover, the actions by incumbents should not surprise anyone nor is it criticism of the incumbents to note that in every Gig.U community that becomes active, incumbents engage in, shall we say, a more robust dialogue with community leaders about how to meet community broadband needs.

I have joked with Milo that the two of us could cause an upgrade throughout the United States just by leaking our travel schedules.

More seriously, what we see in communities where Google or Gig.U have announced projects is what we saw when MCI started to compete with AT&T, when DBS started to compete with cable, when wireless grew from two national providers to seven, and when cable started to compete with telcos in the Internet Service Provider market. The incumbents become better companies, consumers benefit, innovation explodes and our economy grows.

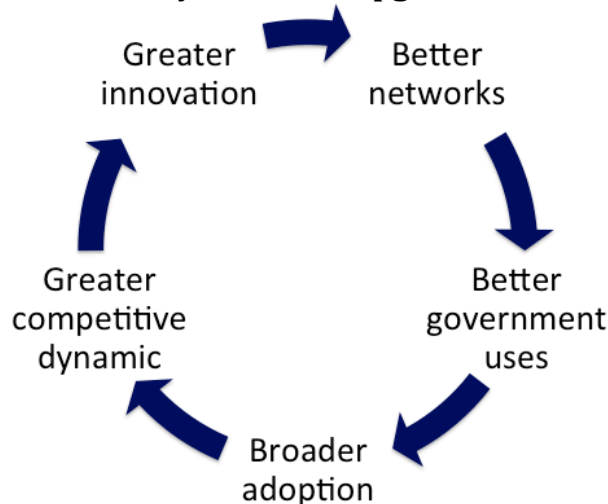
Indeed, every community that starts the process of seeking an upgrade sees nothing but upside.

Perhaps the single most important lesson we have seen in the dozen or so Gig.U communities that have aggressively moved forward is that when communities start to take steps to drive down the cost curve and drive up the competition curve, there

is no downside. Yes, there are many challenges but the question is only about how best to capture the most upside.

Moreover, where we see a move for an upgrade, we see a virtuous cycle: community efforts to obtain better networks leads to broader uses of broadband that leads to higher adoption which assists in creating a greater competitive dynamic which itself leads to greater innovation, with each factor positively re-enforcing all the others.

Figure 5: Virtuous Cycle that an upgrade stimulates



Some have suggested focusing on gigabits causes us to neglect those who aren't online. The experience in Kansas City is exactly the opposite. As the Wall Street analysis I began by citing noted, it is the community involvement that surrounds the upgrade that creates the environment in which broadband penetration and use grows.

So in short, what we have seen over the last several years, made vivid throughout this conference, is that communities have the power to become the subject, not object, of their bandwidth destiny, to take that destiny into their own hands, and through a broad-based community effort, improve both their economic and social prospects in the decades ahead.

So let me close with a note of celebration, for indeed, there is much to celebrate.

As Milo noted, the genesis of the Google Fiber project was the process by which the National Broadband Plan ask questions about the [future of American broadband](#).

I'm proud of the recommendations of the National Broadband Plan but prouder of the questions we asked. The right questions are more important than the initial answers.

Indeed, on this question, the Plan got the answer wrong. Fortunately, Google and many others in this room had other answers, which has directed the conversation the right way.

Three years ago, when the National Broadband Plan asked how do we achieve a critical mass of communities with world-leading networks, the map of Gigabit America was pretty barren.

Figure 6: Map of Gigabit America 2010



Happily, a number of groups, including the Fiber to the Home Council and the Community Broadband Networks Project of the Institute for Local Self-Reliance did a great job of advocating for faster networks, leading to about 40 communities in 13 states with a publicly owned network offering a 1 gig service.

These are great models and deserve much praise, but that particular model has generally worked in smaller communities; of the 40, only two have populations above 100,000 and both are below 200,000.

But thanks to Google Fiber the map now has some larger communities.

Gig.U members have added to the map, with projects in Gainesville, Orono and Old Town operational, efforts in Seattle and Chicago soon breaking ground, and RFPs in process in Champaign-Urbana, Raleigh, Durham, Chapel Hill, Cary, Carrboro, and Winston-Salem.

Figure 7: 2013 Map of Gigabit America With Google Fiber (Green), Gig.U (Yellow), and Others (Blue)



In addition, at least a dozen other Gig.U and other communities are actively exploring undertaking a similar process.

While each of these communities is following the formula, the strategies and the tactics I have noted above, each is doing so in its own unique way. Each has to understand the unique assets it brings to the table—Seattle, for example, had a wealth of dark fiber—and design its approach [accordingly](#). The North Carolina effort brought the scale of a regional approach based on the ability of local communities in the Research Triangle Park and Winston-Salem areas to act for the [common good](#).

Further, each had to make its own call on certain policy trade-offs.

As each community finds its own path up the mountain, it creates new information and alternatives for those who wish to follow. No two cities will be exactly alike but every city can benefit from the actions of others.

While we are in Kansas City to discuss moving from *Gigabit Envy to Gigabit Deployment*, some communities would be thrilled to have a far more modest upgrade. So we should also be grateful for the AIR.U project, which arose out of the Gig.U process, which seeks to drive upgrades in rural communities using fallow, unlicensed spectrum, and which is working with a Gig.U member on its first deployment, which we look forward to hearing more about next month.

The map looks far better today than it did three years ago.

Not only do we have a better map, we now have replicable models that any community can use to capture the externalities that world-leading networks can provide.

Not every community will choose to do so, but every time a community moves forward, it makes it easier for the next.

At this conference, you have seen how the communities that have moved forward have created a playbook for others who wish to follow; both Gig.U and the Fiber to the Home Council now have a complete set of tools for asset inventory, demand assessment, model legal documents and a strategies for organizing key constituencies.

Figure 8: Community Tools

Tool	Description	Key User
Asset Assessment	Lists relevant public assets and policies and describes how they can be better utilized or implemented to improve the economics of a new deployment or upgrade.	City Manager, City Engineers
Demand Assessment	Provides frame for a web based tool to assess, aggregate and map demand.	City Managers, Economic Development Officials, Real Estate Owners
Legal Forms	Provides generic versions of resolutions, RFI, RFP.	City Attorney
Strategy Memo	Describes key issues in organizing community efforts with a focus on multiple dwelling unit/real estate sector.	Organizing committee for upgrade effort

These are terrific resources for everyone here and will only improve as more communities contribute the wisdom learned they learn upon the path.

I have already noted how we owe thanks to Google.

We also owe much to the Fiber to the Home Council. Its work has taught and inspired many—and they have been working on these issues for a long time.

Heather and her team have done a great job with this conference, in addition to being the leading advocate for policy changes and the leading convener of those who wish to bring world-leading networks to America.

I think everyone here also owes a debt of gratitude to my colleagues at Gig.U member universities and communities, and I wish to personally thank them. All of them have big jobs but they had taken the time to create new opportunities for their communities, for which they will never get the praise or recognition they deserve.

And we should thank the local leadership, mayors, council members, economic development officials, and community leadership without titles but with vision and energy. They are the ones whose commitment has and will make it possible to change the math.

Yesterday, Joey Durel of Lafayette wisely noted that until politicians care more about the next generation than the next election, we will not get the upgrade we need to lead in the bandwidth delivered economy.

But not only are mayors capable of changing the investment math; they can change the political math.

As we have seen in Kansas City and other cities, when the mayors and the communities unite on this mission, together they catch fire and become the subjects of their own history.

Communities respond well to leadership that provides the tools for economic and social leadership for their communities for the next generation.

It is not without difficulty, but the evidence over the last 12 months and throughout this conference is that properly done, the politics will favor rewriting the communications social contract and creating the social capital that will drive both a new generation of innovation and build a foundation for economic growth and social progress through the deployment of next generation of broadband networks.

On behalf of all the sponsors of this conference, thank you all so much for coming here, but above all for the work you are doing, and will do, to accelerate the deployment of next generation networks back home.

Thank you.