THE BROOKINGS INSTITUTION

BOOSTING GROWTH ACROSS MORE OF AMERICA: PUSHING BACK AGAINST THE "WINNER TAKE-MOST" ECONOMY

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Welcome:

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Presentation:

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Senior Fellow and Policy Director, Metropolitan Policy Program
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Fireside Chat:

KIM HART, Moderator
Managing Editor, Axios

STEVE CASE
Chairman and Chief Executive Officer, Revolution, LLC

Panel Discussion:

MODERATOR: ANNE KIM
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ROBERT D. ATKINSON
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TIMOTHY J. BARTIK
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PAMELA LEWIS
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Remarks:

JUDY FAULKNER
Chief Executive Officer and Founder, Epic

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P R O C E E D I N G S

MS. LIU: Well, good morning.

AUDIENCE: Good morning.

MS. LIU: It's wonderful to see everyone. Welcome to Brookings. Thank you for joining us today to explore an issue that needs more attention, and frankly, more solutions, and that issue is how to create more places of opportunity amidst dark, regional divides.

Now, indeed, there's an important conversation happening right now about income inequality and ways to make the U.S. economy work for everyone. Well, today's forum is about expanding that task to make the economy work everywhere.

And in fact, as you will hear soon from my colleague, Mark Muro, and his collaborator, Rob Atkinson of the Information Technology and Innovation Foundation, quality economic growth. Growth that is generated by our most innovative sectors has alluded most cities and metropolitan areas while a handful of coastal tech giants flourish.

This is what we call the "winner-take-most" economy, and that dynamic has costs. Workers and families in those high-growth markets they struggle to afford decent housing, and endure long commutes. Workers who choose to stay in lagging regions due to deep family ties, or equity in their homes, they're locked out of the wealth-creating opportunities found in more prosperous places.

And then there's a vast network of mid-sized cities, often promising, often fragile, and often on their own to repurpose legacy assets, reinvent industries, and reverse decades of segregation and concentrated poverty. And they are dampening the nation's overall productivity and income-generating potential.

And finally, America's rich social and cultural fabric is fraying. As one scholar observed, the revenge of the places that don't matter has destabilized our politics and stirred cultural divisions that now define our times.

Now, there's a bright line as we desperately need a bright line, and that is there's a growing consensus that our nation needs to do something about this, that we have to bridge our regional differences, at a time when America's globe leadership and innovation, in an inclusive economy requires more centers of excellence delivered by a highly diverse workforce and at a highly-diverse group of entrepreneurs.

That is why we're gathered here today, to hear from experts, from business leaders, and local leaders about the range of solutions that are possible to create more centers of growth that at the same time do not replicate the stark inequalities often associated with traditional high innovation centers.

These are the topics that will be explored today, and I'm also grateful that we have some very experienced leaders sitting in the audience, who have come from cities as diverse as Louisville, Madison, Detroit, Columbus, Syracuse, New York. And I believe the Mayor, Ben Walsh, is here. Wonderful; I'm so glad the Mayor of Syracuse, New York, has joined us today. I really hope that you all add your own observations to this important dialogue throughout the day.

Now before I turn things over to Mark Muro, I do want to say a few words about our program, which we shorthand call *Brookings Metro*. Since our founding our program at Brookings has sought to remind national leaders that the U.S. economy is not one monolithic economy, but instead it's made up of a network of distinct metropolitan economies that drive national prosperity.

We have shown that national statistics belie the vast unevenness across the American landscape, and we have argued that to boost growth and opportunity, it requires understanding the trends and the assets of every city, county and metropolitan area which we regularly chronicle. We find that doing so ensures that national state policies and power bottom-up reforms that are tailored to local conditions, and it also helps drive important local decision-making.

Today, we remain relentlessly-focused on the power of place, as key to promoting an inclusive economy. However, our program is also doubling down on our focus on people, the increasingly diverse pool of talent, who will power future industries, and launch new enterprises.

In other words, the future of place-based policies must include how to empower, not disenfranchise, local workers and connect them to nearby firms and industries to make the cycle of wealth creation and opportunity possible.

So, our hope for today's forum is to invite your ideas, to invite your collaboration to this urgent, national challenge. We need a new generation of place-based policies that builds on community assets and the people in them. In short, we need policies that ignite markets and creativity that work for everyone, everywhere.

And who better to kick off our day, and lay out today's program, than our own superstar, senior fellow, Mark Muro. Mark, as you know, is prolific producer of research and commentary, he is prolific Twitter user, and he is an expert on the innovation economy, and the nation's geographic divergence.

He, Rob Atkinson, and our colleague Jacob Whitten, authored one powerful idea to spur more growth centers in the country. Yet we acknowledge that the nation needs a suite of interventions, not just one silver bullet, to get the job done. And so, I'm really grateful that we have Mark leading that for us. So join me in welcoming Mark Muro. Thanks. (Applause)

MR. MURO: Well, good morning, everybody. Thanks so much, Amy; and good morning everyone. It's really encouraging that we're having a kind of convergence around divergence that maybe will lead to more work on convergence. And it's great so many people come out to hear about this discussion, and think about it.

Regional divides have been with us for always, but they're one of the important, important challenges of our moment, right now, and it bodes well that so many of you who are here.

So, I'm Mark Muro. And my work here at Brookings has really been increasingly preoccupied by this issue, of uneven development, we want to dig in today into a particularly challenging aspect of the issue, which is how technology is part of the issue. How technology may be exacerbating these gaps, while also opening up ways to push back more effectively.

My strong assertion is that we as a nation need to push back against some really big trends here, and elevate the level of our thinking. If we do that we might well generate more inclusive outcomes, to begin to get the country back together again. If we do nothing I believe, you know, these divides are going to get worse. One of our growing conclusions is that these are heavily baked in, and there are particularly ways that these are winner-take-most dynamics. And so it will take active effort to interrupt them.

So, what I'd like to do is initially frame the problem that we're facing, and why it matters, drawing from a brand new paper Rob Atkinson of the Information Technology and Innovation Foundation and I have written. Rob is here. You'll be hearing from him shortly, and as I say -- and then after I say my piece, Steve Case is going to reflect on what he sees occurring in so-called fly-over country, where he was early, very early in sounding an alarm about the unevenness of America's tech economy.

And after that we're going to hear from our panel, which will commence with Rob digging deeper into the sources of the problem of why place-based intervention is needed, and one idea for that. Others on the panel will expand the discussion. And finally we're going to hear from Judy Faulkner, the Founder of Epic, whose story of tech center growth creation, and in job creation in the heartland underscores what we are likely missing out on under current trends.

So, let's look what is happening here. At the broadest level, it's been obvious forever that cities and regions perform at different levels, given their different starting attributes, whether geography, resources or size, one only has to think about the nation's varied city geography, with its contrast of big cities, and little cities, fast-growing ones, and slow-growing ones. We assume and we accept, and we should a lot of variation that's a global phenomena, and yet, in recent years it's become clear that something new, and I think disturbing is happening.

Most notably an epidemic of what we call regional divergence has become unmistakable as the economic fortunes of superstar cities, like San Francisco have pulled away from the fortunes of dozens of secondary metros like Kansas City, while hundreds of (inaudible) smaller metros in small towns, in rural areas, are left behind in real distress.

Rather than growing together, as they used to, the nation's regions, metros and towns have been growing apart. Here you can see this. For much of the 20th Century a well recognized welfare maximizing market forces tended to reduce wage, investment and business formation disparities by narrowing the divides the economy is sure to welcome convergence among communities and regions.

Think of the catch up the American South, is actually a great example of this, and in that, there are numerous instances of that much of the last century. However, in the 1980s, as you can begin to see here, something changed. That trend of convergence of default, natural catch up, began to break down as in Rob's and my view, of innovation and information moved to the center of economic activity, that had huge implications.

Intense new demands for talent, and insights increased the value of agglomeration economies, unleashing self-reinforcing dynamics that benefited a short list of core, often coastal, but not always coastal, regions which began to pull away from cities, and metro areas, and the rest of the nation.

Amid these conditions, as you see here, the convergence trend gave way to divergence as a top tier of high tech metros, like Boston, the Bay Area, and Seattle began to consistently outperform other places on measures of economic performance like wages, which is what we're showing here.

That blue line is the top 2 percent, about 20 metropolitan areas, and the result -- and you could see that here -- so the next 20 places, the orange line, the next 60, and the bottom 75 percent, are sort of going on a different trajectory, the result is an epidemic of imbalance epitomized by hyper concentration of the innovation sector in very few core places, and drift most everywhere else.

This is from our recent report, you could see -- looking at this map you could see the trajectories of different portions of the innovation sector. And then if you look here at these maps, you'll see far more red dots depicting your metro area losses of share of this national innovation sector, and this is based on 13 industries that we defined that's having especially high R&D and STEM worker content.

Most notably here, you can see that the industry is concentrating that portfolio far from spreading out, as we've all hoped it would, the critical sector has been concentrating. You see far more red dots of places that are actually losing share of that national portfolio of 13 highly important industries.

Ninety percent of nation's metro areas is actually lost share, and it has been just share loss, about half of the nation's metros actually lost innovation jobs, at absolute terms as we define the sector. Granted there are other ways to define the sector, you get somewhat different results, but not radically different results.

There's a tremendous divergence going on. So you get the drift. The innovation game, which resides at the center of the economic game, has taken on a very pronounced set of winner-take-most dynamics, where the very strongest get stronger, and almost everywhere else really has to struggle.

This is slightly coloring U.S. growth patterns, and much else, which brings me, before we turn to Steve Case's story, and reflections to why this matters. To be sure this might not matter. All of this might be fine. And in fact, a substantial number of economists have tended to argue that the current hyper concentrated winner-take-most geography might be the optimal, market ordained, geographical configuration for maximized innovation.

The presence of clustering is why we recognize the support regional and national prosperity, maybe we just need more of it. And yet there is now increased concern amongst scholars, policymakers and business people, that the nation's geographic polarization is now throwing off untenable economic, social and political costs.

The economic end of the equation, the cost of excessive tech concentration are creating serious negative externalities, or side effects, for the superstar hubs, the problems include spiraling home prices, traffic gridlock, rising business costs. That's well recognized.

For the rest of the country, a very troubling sorting of workers to sending college-educated workers to the star cities while leaving other metros to make do often with thinner talent reserves, this is increasingly recognized as a problem for the next tiers of cities.

As a result, whole portions of the nation may be falling into traps of underdevelopment, characterized by permanently lower productivity, and future prospects. That's something to be concerned about. Equally it concerns the fact that the nation's regional divergence is unfair in social terms. Amy alluded to this. Very starkly, tens of millions of citizens, black, white, brown, are being seriously disadvantaged with respect to job opportunities, income possibilities, health and happiness outcomes, simply by living in one region, rather than another.

We accept a lot variation in this country, but we need to hold open the possibility of mobility that the order of the land will change. And I think there are some concerns it might not right now. Where people live it's a huge determinant of their economic opportunities, so the nation's economic geography may be becoming a kind of geography of economic exclusion for some.

And finally, there are political side effects to these dynamics. To be sure, there are debates about whether cultural or economic dynamics are driving our nation's political divides, but for all that, plenty of scholars continue to stress the influence of economic trends.

So, it's not crazy to think that the nation's political polarization has something to do with its geographical polarization. After all, for most of America, it seems that America's elite economy is creating jobs and value far, far away. That may be a problem, fundamentally, for the country.

So, with that, I would like to turn this over to Kim Hart of Axios, to continue our program. Kim is going to talk to Steve Case of Revolution, about what he sees happening, why it's concerning, and what might help him in his work, trying to ameliorate things. Steve has been early in recognizing these dynamics. So, Kim, Steve, welcome. (Applause) Thank you.

MS. HART: Thank you, Mark. Good morning, everyone. It's nice to see you. I'm Kim Hart, at Axios, and I write the weekly *Axios Cities Newsletter* that launched about six months ago. And I have to say that part of the inspiration for that line of coverage started when I tagged along with Steve on one of his rise of the *Rise of the Rest* bus tours a couple of years ago, and really started to see this divergence theme that Mark went into such great detail about a few minutes ago.

So I wanted to start off with asking you, Steve, what was it that tipped you off to this dynamic so early? As Mark said, that you were one of the first people to really draw a lot of attention to this diverging paths of cities, and the economic futures.

MR. CASE: Well, first of all, it's great to be here, and I love Brookings, with Mark and others are really shining a spotlight on this, and also hats off to Axios, and Kim in particular launching *Axios Cities* to really make it a priority.

For me, it started almost a decade ago. I kind of stumbled into it. I was asked to co-chair something called the National Advisory Council on Innovation and Entrepreneurship here at the Commerce Department that led to a series of recommendations, including at the White House launching an initiative called Startup America, which President Obama did, and he asked me to chair that, so that got me kind of traveling around trying to understand what was happening.

It also led to the things like the Jobs Act, jump-starting our Business Startups Act, and Opportunity Zones, and other things, coming from a policy standpoint. And I was frankly shocked when I started looking at the data, which is something I hadn't really been paying attention to, that essentially all the job creation in this country comes from startups, young, new companies. Not from small business, not from big business, they each account for a lot of jobs in aggregate, but don't account as sectors for a lot of the job growth.

So, it mostly is the young companies, yet there is a huge, as Mark talked about, imbalance between the capital that most people need to start companies. You know, maybe you have some family money, but most people don't. If you're going to start a company, you usually need to raise some capital, and right now it overwhelmingly is skewed a few geographies.

Last year 75 percent of venture capitalists went to three states, California, New York and

Massachusetts, 75 percent. So, states like Ohio, Pennsylvania, Wisconsin, Virginia, you know, each get less than 1 percent. Last year California alone got more than 50 percent.

That then triggers a brain drain where people were growing up in different parts of the country, going to some of the best universities, and it would be Carnegie Mellon in Pittsburgh, or Michigan in Ann Arbor, or kind of, Illinois, Chicago, Wisconsin and Madison, et cetera, et cetera, then leave those places because the opportunity doesn't really exist there, and they have to go some place where the opportunity is, and then the combination of all the capital being there, plus all the talent essentially moving there, you know, creates this really strong increasing returns and network effect there, but disadvantages in other parts of the country.

So that's how we kind of got into it. Then we launched *Rise of the Rest* about five years ago, and so rather than just talk about this from a policy standpoint, let's hit the ground, see what's happening, try to identify promising entrepreneurs, try to drag along some coastal venture capitalists, try to do what we can to help catalyze stronger, more thriving, rising kind of startup cities, and so forth.

I was on eight of these tours, and we visited 43 cities, and we also created a Rise of the Rest Seed Fund, which so far invested 130 companies in 70 cities and 30 states. And we are seeing great entrepreneurs who are building remarkable companies, outside of places like Silicon Valley.

MS. HART: And you just launched your second fund, in fact?

MR. CASE: We did. We decided that (inaudible) has a venture group and a growth group, and with a seed group, we decided rather than go our normal route, which was more institutional investors, foundations, and so forth, we would, you know, go out to individual investors and try to identify and connect with some of the most visible, respected, you know, people in the country.

Entrepreneurs like Jeff Bezos of Amazon, or Howard Shultz in Starbucks, or Eric Schmidt of Google, or venture capital investors like John Doerr and Jim Breyer. Or private equity investors like Henry Kravis, David Rubenstein; hedge fund investors like Ray Dalio, basically, we said, let's go reach out to, you know, people like that, and try to create, together, a fund.

And that's what we did, we did a first a couple years ago, and did a second fund just a few months ago with this group of, I think about 40 investors now, together, it's about $300 million that we're investing in partnership with regional funds. We don't lead ground, we don't take Board seats, we're trying to catalyze more capital at this local, kind of regional level, and helping in the process, accelerate the growth of new, regional venture funds, and help some of the existing regional funds scale to the next level.

MS. HART: And are you starting to see the cycle break? The one that you've noticed over the past decade, and one that a lot of people woke up to after the 2016 Election when they started to realize that people were living in different realities, depending on what kind of city, and what region you live in. Are you starting to see, not just lip service and people talking about, oh, this is big problem, we should do this, and actually seeing some progress towards (crosstalk)?

MR. CASE: I think we're seeing some progress. It's still early, and it reminds me of the early days of the Internet when we started AOL in 1985. So what's that? Thirty five years ago?

MS. HART: We have to do the math.

MR. CASE: Thirty-five years ago, only 3 percent of people who were online, and 3 percent are online one hour a week. And we said we wanted to get America online. And most people thought, well, people don't want to get online. Like, well, it's not going to happen, that seems kind of weird. Maybe a few hobbyists, but it's never going to be like a big deal.

And for about a decade they were right. It was slow, and hard, and a struggle, and a whole host of reasons. But eventually broke through and now of course, we've gone from a situation where nobody knew about or cared about the Internet, to everybody is connected, and you kind of can't live without it.

So, I saw this, you know, sometimes it takes a while for ideas to get traction often, kind of revolutions happen in more evolutionary ways. So, with *Rise of the Rest*, it feels similar. It feels like people are starting to pay attention, they're or starting, you know, a little more capital, a little more attention, more events like *60 Minutes* did something on this last year. So, it's a little bit more, you know, focused, but there's a lot of work to do to scale.

But it does tie in, as you said, and also Mark said, with the political equation. I mentioned if 75 percent of venture capitalist went to three states, if you looked at the last election, the last Presidential Election, if you added up all the states that President Trump won, which was 30 states, in aggregate all of those states, together, had 15 percent of venture capital. The 20 states that Secretary

Clinton won, had 85 percent of venture capital.

So when people were talking about, given the role that startups play in job creation, economic, you know, vitality, and so forth, when people say there are parts of a country that fell behind, they actually were being left behind. You know, just if you look at the data, so how do you get more capital to more of those entrepreneurs, and more of those place, how do you reverse that brain drain, and you create a boomerang of people returning?

We're also starting to see, you know, we're seeing some early data where some of the university's people at Carnegie Mellon in Pittsburgh, for example, that 10 years ago overwhelmingly would leave, now more are staying there. We're seeing in a number of cities like Detroit where people left and are now returning, because there is a sense something is happening there.

So, it's beginning to, you know, starting to put some points on the Board. We are starting to see some breakout successes, we have a couple unicorn… kind of couple days in our seed portfolio already, including one in Detroit, another company we backed, Revolution, it's called Tempest, and is based in Chicago.

It's gone from a startup four years ago, and now, you know, a thousand people, they're doing some really interesting things with AI machine learning around oncology, trying to be more precise about diagnosing cancer, and predicting what the right therapy is.

I reckon that 70 percent of the National Cancer Institute Hospitals have something like 30 percent of all cancer patients in this country now have their data in the Tempest system. And that is not Silicon Valley, that is not in Boston or Cambridge, you know, that is in Chicago. And the other variables that I think are going to accelerate in the next decade, and that was part of this book I wrote, *The Third Wave* a few years ago.

Is place going to matter more? Obviously, *Rise of the Rest*, policy is going to matter more, the sectors up for disruption, and the next way, whether it be health tech, or ag tech, or smart cities, or what have you, there's a policy regulatory, kind of overlaid to them, and partnerships are going to matter more. That's conscious about the software, or sort of the table stakes, being able to, you know, get that software embedded in system-level change, like in the health care system is where the real action is.

So, I think the center of gravity is shifting from where the second wave of the Internet was, really, it was about software and apps, and virality, and so forth, Facebook and et cetera, et cetera, to basically disrupting some of the most fundamental industries and most important aspects of our lives, but the playbook is going to be different. Places are going to matter more, because the expertise in these sectors often is in (inaudible) country, and you're also going to have to be much more thoughtful and sensitive around some of the policy implications.

MS. HART: And a lot of the regions that are in the cities that you just mentioned, have something in common, and that they have large universities, and research institutions there that are helping to put out the funding, attract really high caliber talent. What role do you see institutions like that, particularly university is playing and drawing some of the center of gravity back to some of these cities?

MR. CASE: Yeah. Different universities are doing different things, but they are beginning to recognize they need to be much more entrepreneurial and figure out ways to take some of the ideas, the intellectual property that's developed there, and get it in the marketplace. And figure out ways to better serve the students that are there, that have more of an aptitude interest in being more entrepreneurial.

And some are doing it better than others, but more and more are beginning to realize that's sort of the -- you know, it's sort of where the focus needs to be.

They're also doing a better job, the ones where the cities are thriving and connecting to other parts of the community. One of the things that was surprising to us, when we first kind of hit the road with our *Rise of the Rest* bus, was how fragmented and siloed some of these communities are. Even relatively small, you know, communities that people are just doing their own thing, but there's not enough collaboration across the community.

So having the university work together with some of the larger companies, and Fortune 500 companies, and connect with the smaller startups, the entrepreneurs and work with the Mayor, or the Governor, and non-profits that are doing things around the community. That convening collaboration aspect is critically important, and if the universities can often decide not really at the center of the community, or it's more focused on -- kind of just doing things the way they traditionally did, and not connecting to the startup community in their area. Then those cities will not thrive as much as if you really have that collaboration.

MS. HART: There also seems to be a cultural gap, and differences between the top 2 to 5 percent of metro areas that Mark's charts pointed to, and the other kind of left-behind areas. When it comes to attitudes towards entrepreneurship and taking that kind of risk, it doesn't seem to be as much in the DNA of a small town in Indiana or Illinois, as it it's kind of baked into where you are in Seattle and San Francisco, and Austin, where it's like -- it's the badge of honor to have a failed startup.

MR. CASE: Right.

MS. HART: That's not something that people have the luxury of even thinking about in outer parts of the country, where they're under water on their mortgages, they have student debt that ended up not paying off, they just don't have the ability to take hat leap. So, how do you kind of bridge that gap as someone who is -- I mean, your business is investing in entrepreneurs and finding -- getting people to take that leap of faith, to find the next big thing?

MR. CASE: That is true. One of the other things that was a little bit of a surprise, when she started getting it through Congress; to the capital gap issue, and to get some ideas of how to deal with that, we understood, so the talent gap, this brain drain kind of issue, and add some views on that.

But the surprise was how many communities we visited, are kind of cautious and risk averse, and a little more skeptical of entrepreneurs. I have my criticisms of Silicon Valley, you know, there are something that I don't love. But there are some aspects that are unbelievable, and one of them is that sense of possibility that they must have fearlessness as they look at ideas.

And the way I frame it as I travel around, is if you are hearing a startup pitch, do you first mentally, focus on why it might fail, what might go wrong, the risk factors, or why it might succeed, and if it does succeed, what might be possible there?

Silicon Valley does the latter. It's like, well, I can see how that could be transformative, and that happens, this happens, this happens. A lot of parts of the country are more focused on when they hear these ideas, like here is why it won't work.

And so part of what we're trying to do is get, you know, get these communities to be a little more open to the idea of (inaudible) more tolerant of, as you say, entrepreneurs, there are many successful entrepreneurs who stumble the first time or two, and then, you know, finally kind of hit their stride.

Changing the culture around entrepreneurship is as important, perhaps the harder one to change, than the issue around, you know, capital and talent. We think getting those working together are going to be, you know, the key ingredient. One thing that helps, not surprisingly, is success.

When you have a -- you know, you have a breakout company, we saw this AOL here in the Washington, D.C. area, Indianapolis has benefited from this with exact target which is acquired by Salesforce, now it's the second largest Salesforce office outside of San Francisco, and 2,000 employees there. And Salt Lake City where I'm going tomorrow now has an approval, has half-a-dozen multi-billion-dollar enterprise.

You know, have got software companies, you'll hear from Judy and Epic, in terms of the roles they played, and letting people in Madison who are graduating there way, well, maybe I don't have to leave, I can stay, and creating a stronger startup, ecosystem, there we have a number of investments, the Rise of the Rest Fund, in Madison. You know, success begets success, momentum begets momentum, and also what happens naturally, is when companies get to a certain scale, some of the early, kind of pioneers, want to go do something else.

And say, launch new companies, then when a company has success some people in the company or investors -- you know, or investors in the area, invest in the company, have some capital and they want to invest in the next range in startups. So, I think it's possible.

The other two things I'd mentioned though, is if you look at Silicon Valley, I was speaking at a conference, TechCrunch, Disrupt Conference a couple years ago, there may have been 2,000 people in the audience, and I asked for a show of hands of how many people were from the Bay Area, less than 5 percent. Essentially everybody in Silicon Valley is from someplace else.

It's not that that's this magical kind of cauldron of creativity, it's the people who were creative and had a desire to be part of this innovation economy moved there. And so how do you create more of that opportunity in more places so they can stay where they are, or even return to where they're from.

And the last point is, if you think about the arc of innovation in the last 30, 40 years, certainly, particularly with the Internet, that this last 20 years, the second wave, no question, Silicon

Valley has dominated, and the big breakout successes have overwhelmingly been Silicon Valley.

But if you look at the first wave, the first 20 years, you know, companies like AOL as I mentioned were here, IBM's PC operations were in Boca Raton, Florida, Dell was in Austin, Texas, Gateway was in South Dakota; the big communications modem company, Hayes was in Atlanta, Sprint was in, you know, Kansas City, CompuServe was in Columbus, Ohio. I could tick through dozens of these examples.

That first wave it actually was more regionally distributed. It was only where as a second wave, when it became so centered around software and coding that Silicon Valley kind of dominated. In this third wave, because, as I mentioned, you know, the industry is up for grabs, and the skill sets, and the partnerships are more dispersed, there is an opportunity for many cities to rise, and then go from a few citizens dominating to a dozen cities, you know, really, really are thriving.

But only if people at the local level, as well as more of the regional and traditional level, make it a priority and say, you know, we care about our community, we care about eh seed corn of backing the startups today, some of which will end up being the big companies tomorrow.

And we care about leveling he playing so that everybody everywhere really has a shot at the American Dream, has a shot if they have an idea of building a startup as opposed to saying, you know, if you're most parts of the country, too bad. You know, unless you go there, or there or there, you don't get to participate.

MS. HART: And this is really being driven by the innovation economy, as Rob and Mark's research has shown, among other research out there. And so the tech industry seems to be seen that it's reaching a bit of a crisis moment for them as well, while they have been the beneficiaries of this enormous success and growth in their big hubs that they’ve really built and turned into these superstar cities.

People want to afford to live there, they're having a harder time recruiting people there, they are getting a lot more pressure on what their impact has been in their own backyard, and the larger national economic dynamics. When you're talking to business leaders in that sector, in particular, what are you hearing and what are you telling them about how they need to invest or participate in that next wave?

MR. CASE: What's happened, particularly in the last five years, has been pretty interesting, and gives kind of hope that we're kind of at a tipping point, because now the companies in Silicon Valley recognize they heed to have a more distributed workforce. They cannot continue to scale in Silicon Valley. It's super expensive, there's a mercenary culture, people don't stay with companies, you know, kind of very long.

So, all the big companies, Facebook, Google, et cetera, develop strategies around kind of building up regional. The (inaudible) Amazon of course had this celebrated second headquarters effort, and which led to this area of Northern Virginia area, but they also put 5,000 people in Nashville, and they're starting to put people in large numbers, thousands of people in a lot of different places. So the big companies are, essentially, starting to distribute their workforce.

The other dynamic that's has happened fairly recently, is now the venture capitalists that 10, 15 years ago said, I'll only invest in you if you move to where I am. Now, we're recognizing that investing in these other companies, in other places, kind of make sense, and even telling the companies in Silicon Valley they're investing in, what's your second office strategy?

If you get to a certain scale where will you go next, and why? And getting them thinking earlier about trying to king of have a somewhat more, kind of regionally distributed workforce. So those are the game changers in terms of the psychology that's starting to, you know, kick in. It will take a number of years for that really to fully kind of be deployed.

But I think it's encouraging. I also say, even though the focus of this event appropriately is on kind of a regional entrepreneurship, innovation, job creation. If you look at the venture capital data there are other places that we need to be sensitive about. Last year over 90 percent of venture capital in this country went to men, less than 10 percent to women. Last year less than 1 percent went to an African-American.

So even though we are the most innovative entrepreneurial nation, the reality is, it does matter where you live, it does matter what you look like, it does matter who you know. And we need to kind of level the playing field. And it's not just that, we should do that because it's the right thing to do, of course it's the right thing to do.

I believe this country can continue to be the leader of the most innovative entrepreneurial nation, with your global competition, China and others kind of really stepping up their game, unless we do have a more broadly-distributed innovation economy, and we do let everybody who has great ideas take those ideas and try to scale them into major companies.

And we have this -- within the country dynamic that Mark talked about of how this innovation economy and the dynamics are kind of impacting our politics in a pretty meaningful way, but also if you look at the next half century we -- what was a little startup country 250 years ago, and is now the leader of the pack, will not remain the leader of the pack unless we're winning the innovation battle. And we cannot win the innovation battle if it's basically a few people in a few places that we have all our eggs in those baskets.

MS. HART: And since you mentioned politics, and given the year that we are now in. My last question for you would be along those lines, and regardless of who wins the White House this year, and what party ends up in power. What do you think the federal government should be doing, policy-wise, to try to reinforce some of the ideas that you're talking about, because I think that people are very worried that the cycle isn't going to break on its own?

MR. CASE: I think some of the experience I had, particularly several years ago, around things like the Jobs Act, and then more recently with the opportunities on legislation was encouraging in that jobs, economic growth, innovation, entrepreneurships, startups, it's actually one of the few areas where (inaudible) is broad bipartisan support.

You don't have -- I run into people who say, I'm really not for startup, creating new jobs, and innovating, I'm not for figuring out ways to be more inclusive, and kind of figure out a better way to kind of distribute talent and capital, and opportunity, and so forth.

So that gives me some comfort in what is now obviously a hyper partisan city, that once we get to the selection there is an opportunity there is an opportunity for people to come together, and having Brookings and other people focusing on things, putting ideas on the table so that when it's time to have that conversation, there really is a vigorous focus on what can we do as a country to remain the most entrepreneurial nation.

And what can we do within our country to be more inclusive, to kind of level the playing field, and help more people in more places, help more cities, you know, kind of rise, help more people rise, help more ideas, you know, kind of flourish.

I think there is an opportunity to do that. I've see that a couple of times, I think we'll see that again in the next couple years. So, now is the time, while everybody is duking it out over impeachment, or over Iowa, and New Hampshire, and what have you, to say let's use this year to basically kind of put the ideas on the table, so next year we can move that innovation agenda.

And do everything we can to try to maximize the likelihood that America remains leader of the pack from an innovation standpoint, and also maximize the ability to level the playing field in terms of opportunity.

MS. HART: Steve, thank you very much.

MR. CASE: Thank you. (Applause)

MS. HART: And now, I'll introduce the next panel to come up and take the conversation further. And it will be moderated by Anne Kim.

MS. KIM: Good morning everyone. My name is Anne Kim, and I'm a Contributing Editor at the Washington Monthly Magazine, and I have the honor of moderating this highly distinguished panel this morning.

So I think what we just heard from Steve Case is a little bit more testimony about the urgency of the challenge that regional divergence is posing to the nation. As Mark mentioned this morning, it's a phenomenon that is literally pulling the country apart. We also heard I think, we saw a glimmer of hope here. Maybe regional divergence is inevitable, but it certainly is not irreversible.

And the purpose of this panel is going to continue on this vein of solutions. What can we do? How do we bring prosperity to the places that have been left behind, and can we get a galaxy of superstar cities throughout the country so that all of us in fact do rise.

So the full bios for the panel are in your handouts, so I am going to make introductions very brief. To my left is Tim Bartik. He is the Senior Economist for the W.E. Upjohn Institute based out of Kalamazoo, Michigan.

To his left is Anthony Hood, he's the Director of Civic Innovation in the Office of the President at the University of Alabama, Birmingham.

To his left is Pam Lewis. She is the Executive Director of the New Economy Initiative in

Detroit, Michigan.

And rounding out the panel is Rob Atkinson, who is the Founder and President of the Information Technology and Innovation Foundation, and the co-author of the paper with Mark Muro, of the paper that is at the centerpiece of today's event.

So, Rob, if we can actually start with you. The paper that you have co-authored with Mark lays out what I think is a pretty bold proposal for anti-divergence. If you could give us an overview of what you propose. And talk a little bit about why it's necessary to go as big as you do.

MR. ATKINSON: All right. Well thanks a lot, Anne, it's a pleasure to be here.

The title of the report that Mark and I did is called *The Case for Growth Centers, How to Spread Innovation Across America*. And I think it's important to be specific about what we're talking about. We're talking about spreading innovation across America. We're not talking about spreading economic opportunity written large across America. Those are very separate things.

They're separate things because the innovation economy is essentially an agglomeration economy, and you can not like that, you can wish it's not the case, but it is the case. Innovation jobs agglomerated in what regional economists call a cluster. And they do that because they're based upon innovation and knowledge, and you need that interchange, even in the world today with the Internet and Skype and all of that, you need that local interchange.

And so when Steve Case talks about all these Silicon Valley companies with a second office strategy, that's right. But you have to understand that second office strategy is not going to someplace with 3,000 workers. Hey, I can pay my software engineer $30,000 a year. Well you can't get a software engineer there.

So unfortunately what's happened is that the second office strategy all too often today is overseas. So these companies will say where do I want to go? Well I'm going to go to Shanghai, it's going to save me a bunch of money. I might go to Tele Viv, or I might go to Bangalore, I might go to Taipei. And so increasingly what you're seeing is the tech companies going overseas because they need to save money.

Now the real question I think is could they come here and save money? So for example, Taipei costs 16 percent less than Austin. But Indianapolis is almost as cheap as Taipei. Shanghai is 35 percent cheaper than Boston, but Detroit is equally as cheap. So if you go to Shanghai or Detroit, you're basically, there's no cost differential.

So why don't the companies go to these places? I think you saw that with the Amazon HQ2 decision. There are I don't know how many companies, how many places were competing for that. I mean it was like everybody, all of them, like I have 300 people, I want HQ2. The reality was Amazon HQ2 was never going to go to most of those places in a million years. Why did it pick New York and Washington? Because it was a safe choice. There's like a joke saying nobody ever got fired for hiring IBM. If you're a location consultant you don't get fired by choosing New York or Washington, because if you come here the worse that can happen is you've got to pay a little bit more, but you get everything you need. You get great air hub, you get good universities, and you got a great talent base and the like.

So our essentially key point, and is really simple. Is if we want to spread technology opportunity around the country, we're going to have to focus on concentrating it. We're going to have to find a few places that have some potential. So it's a little bit like the goldilocks strategy. We don't want to help the places that already are doing great, you know, San Diego, Boston, Seattle, Silicon Valley, they're on auto pilot. You know, they're doing some things locally, they don't need to do anything locally other than fix their roads and transit and get some affordable housing. They're on auto pilot, they're just going to keep going.

But there's a bunch of places around the country that we have highlighted in the report where we've said these places could be that. They have some of the ingredients, they have good research universities, they already have some tech jobs, they've got some startups, maybe related to what Steve's been doing. They're almost there, so how do we get them over the hump, if you will. And what we're proposing essentially is a Federal initiative which we believe has to be top down, has to be Federal, because to get these places over the hump you have to put a lot of resources in for a longer period of time. It can't be a $25 million EDA regional innovation program that gets spread to 20 places and each gets half a million dollars. It's just not going to do it.

So we propose this competition, places would compete, they would be eligible on the basis of things like, hey, we have skin in the game, we're going to put real money into this, we're going to improve our community colleges, we're going to fix our infrastructure, we're going to have smart cities, whatever it takes. And then if you win, ideally you'd win eight to 12 places. If you win the federal government would commit to a set of policies and then programs and incentives for a 10-year period that would help you then become self-sustaining at the end of that.

The core ingredient for us is research spending at universities. We propose essentially a $100 billion package over 10 years. But there's another component, which is there's research spending, there's tax incentives for R&D, there's Federal land issues, a whole set of Federal programs and initiative that could help these places.

But there's really two important parts of that and then I'll just stop. One is just simply the fact that we're designating places. Because when you're an Amazon or you're an Intel or a Microsoft, and you're in charge of location and you're going where should I go, what you really want to know is you want to be able to go to a place where number one, the local community understands and is committed to it, and number two, that you're not going to be the only one there. And if the federal government through a competition can say, hey, these are the eight or 10 or 12 places that are really, we're going to focus on, it sends a very clear message to industry. Yeah, these are the places we can focus on.

So our belief is that if we were to do this program, that after 10 years, we would probably see, if we picked 10, we'd probably see seven that are outstanding successes that could really be self-sustaining.

And I just close by saying Mark and I totally get that that's not helping every place in the country, totally get that. But I think the reality is it's just, it really is a myth that we can sort of spread technology out everywhere. When I got my Ph.D. in Chapel Hill and was focusing on high-tech development, the state was focused on how can we get more RTP out to the Eastern Shore. And the answer was, you can't. I'm sorry, you can't. I wish you could, but you can't. There's other things you could do for those places. So I think in our sort of narrow focus on how do we get more of the innovation tech economy to more places, that's what Mark and I are proposing.

MS. KIM: Tim, what do you make of this proposal that Rob has put on the table? And what would you add to it to widen the impact it's going to have and ensure that as many places around the country do benefit?

MR. BARTIK: Well I guess my perspective is that broadening high tech beyond Silicon

Valley is certainly a worthy goal, I'm certainly supportive of it, but I think that we need to go broader and help more distressed areas. And I would argue that for both substantive reasons and political reasons.

Maybe we can get into politics later, but the substantive argument is we have many communities in this country. Really most small and medium size communities, many rural communities, that have low employment to population ratios. They simply don't have enough jobs for all the population. They certainly don't have enough good jobs. And a high tech strategy, as was already mentioned, will not help a lot of these areas. So you need something broader.

Now one perspective is there's nothing you can do for these areas. I don't think that's true. I think there are proven job creation strategies that can work. You can look at business advice programs like manufacturing extension services that work with small and medium sized manufacturers, and try to give them advice on how to diversify their markets, how to be more competitive. You can look at customized job training programs where you have a community college work with area companies to try to provide the skills training that really is needed to upgrade their workforce and make them more competitive in the global economy. You have infrastructure programs that can strengthen areas. You have land development programs that can make more sites available for business development, whether that's due to ground fill redevelopment or you're developing business parks, research parks, industrial parks, that kind of thing. Those are all proven job creation strategies.

Now you might say why doesn't this happen already? And certainly in some cases, I mean we need strong local leadership, we need local leadership that was mentioned, getting beyond silos, you know. We don't necessarily have the optimal government structure in this country in the way local governments are structured. They're not structured around metro areas, for example.

But another part is simply resources. There's a vicious cycle where areas that are left behind, that have low employment to the population ratios also don't necessarily have the resources to really invest in an infrastructure and business services and job training and the things that will turn their local economy around, will increase employment to population ratios. Which by the way is not only of benefit for those areas, it's a benefit for the U.S. economy. This is not something, a social or moral issue or equity issue of helping areas left behind, it's also an issue of are we in this country fully utilizing our workforce all over the country? We have people who lack jobs, lack good jobs, who could be employed and could be in better jobs, and we're not doing it. And that has implications for the overall productivity of the U.S. economy.

So I think there is a rationale since these areas lack resources, the vicious cycle I referred to before of under development where they don't have the resources to invest, for the federal government to provide, intervening in the right way to help. And by right way I mean too frequently the Federal intervention in many areas is a one size fits all mentality. And this is clearly the situation where that does not work. Not every local area needs the same thing to be revitalized. Some areas can do a high tech strategy, some areas need infrastructure, some areas need job training, some areas have a manufacturing base that could benefit from manufacturing extensions, some areas do not.

So the notion that we can have one magic Federal program that is a highly targeted thing that just does one single, one size fits all solution, is a mistake. I think the Federal intervention needs to be more of a block ran approach, it needs to be very flexible, it needs to have a wide range of possible uses, and it needs to be done on a sustained basis. Now have we ever done that before? Yeah, I think we have occasionally. Things like TBA and, you know, the 1930s and on I think made a big difference. But it is not easy to do, it is hard for the federal government to do this kind of geographic targeting, and hard to do it in a flexible way. But if we want to really bring help to struggling places of all types, not just the areas that have a tech solution, we will need to adopt some such strategy that invests in a wide variety of infrastructure, business services, and job training for a lot of areas. And to me that makes more substantive sense, and maybe we can get to later on why it makes more political sense.

MS. KIM: I want to stay on this thread of what inclusive growth could look like. And I want to widen the conversation, but also just want to go to you, Anthony. Birmingham, Alabama is a place that has made an intentional effort to make inclusive growth a priority. And the University of Alabama, where you work, has been central to that. Can you tell us a little bit about Birmingham's story over the last few years? And in particular, how has the University's involvement really affected the trajectory of the city?

MR. HOOD: Sure. Good morning. So I'm in the City of Birmingham, a city that we call Magic City. It's called the Magic City because it seems like the city just kind of came out of nowhere because of the intersection of the railroads back in the late 1800s, and we just so happen to have all the ingredients to make steel and coal. So it is a city that really grew up because of the steel industry.

So we enjoyed a lot of growth over the early 1900s. But then as the steel and coal industries began to decline, that ironically was at the same time where the health care sector started to increase. So that's where the University of Alabama, Birmingham's prominence began to evolve.

Ironically, our University is only 50 years old, yet this past year we just topped $600 million in R&D funding, primarily from the NIH. And so at our University we are really focused on taking those research dollars and turning that into opportunity for those in our region, as well as those in our State. A large percentage of our population are Alabamians, a lot them are first generation students. And so we're giving opportunities to those students with partnerships with HBCUs where we have summer programs where HBCU students come, train in a laboratory of a scientist or a researcher at UAV, and then progress into medical school and things like that.

We're also very involved in our start-up tech ecosystem. We have an incubator called innovation deep hole, which is one of the top incubators in the nation. And so it right abuts our campus, and that provides opportunities to really get people involved in the tech entrepreneur ecosystem. Here recently we had a large buyout of one of our homegrown startups, a grocery delivery company called Shipt. I don't know if any of you use Shipt right now, but Shipt was acquired by Target two years ago for $550 million. That was huge for our community because I think it sent a signal, not only externally that there's tech entrepreneurship going on in Birmingham, but I think it also helped our own personal identity to say wow, we can do this. And we have one Shipt, can we produce two, two, three, four more Shipts.

I think one of the interesting things that came out of the Shipt store is that now Shipt is now intentionally doing a second office strategy. We have an initiative called Birmingham Bound, where essentially we do a 36 hour tour of Birmingham. So we're attracting the high tech, high growth startups that on the coast, we bring them to Birmingham and we give them the Southern hospitality. We take them to the breweries, we give them barbeque, we give them bourbon, we give them all those trappings of Southern hospitality, but we also show them how very quickly, if you want a start up an office here with three, four, five, seven people, we have space and innovation depot, we have housing, it is affordable. And we've been pretty successful over the past year of encouraging startups to open that second office in Birmingham.

Now our thesis is, if we can get part of your company we can get the whole thing after a while. So it's a stealth strategy to try to grow and recruit the tech startups that come in.

I would say lastly, some of the other things we've done. A couple of years ago we commissioned a study and we found that we had over 5,000 tech job openings that were going unfilled in our community. And that's another thing that we learned through the Birmingham Bound initiative is that the startups that are thinking about moving to Birmingham, one of their top concerns is where's the talent going to come from. Thankfully we have a lot of universities in and around Birmingham, State of Alabama has the largest number of HBCUs in our State in the country. So we have the talent there, we just need to make sure that we're equipping that talent with the tech skills that they need for the needs of startup companies.

So we got a Department of Labor grant a few years ago, a $6 million grant. We're using that now to have tech boot camps where we're teaching software engineering, where it's a 14 week boot camp, and now these students can graduate from that boot camp and go directly into a job, start up a company, or they can use that as a pipeline into our two-year or four-year system. So we're doing software engineering, we have data analytics boot camps, and we also offer scholarships for those students that want to go to our two-year or four-year colleges in the Birmingham area and major in tech.

So all that is supported by UAB as well as our partnerships with our corporate community and our mayor's office. We were fortunate to have a very young mayor, Mayor Randal Woodfin, that was elected a couple years ago. And I think he's brought really a lot of energy, but also to what Steve said, partnerships. And making sure that the University is at the center of the partnerships doing the corporate community, our elected officials, and our non-profit organizations.

I'll say the last thing I wanted to tell you is that we were very fortunate to have Rise of the Risk come to Birmingham, I guess it was last year. And one of our startups, Mixtroz, was fortunate to get an investment from Rise of the Risk. The founders of Mixtroz are Ashlee Ammons and Kerry Schrader, a mother and daughter team that actually we recruited from Nashville to come to one of our accelerator programs as supported by UAB. And after their investment from Rise of the Risk, they became only the 37th and the 38th African American females to ever raise a million dollars for a startup. Which is awesome, right? And discouraging at the same time. Only the 37th and the 38th.

And so I think another thing that lifts up the opportunity that we have to make sure that we are driving investment and inclusive economic growth outside of the coast in places like Birmingham and other places similar to Birmingham, and have that University at the center of those eco systems.

MS. KIM: Pam, we have a lot of discussion about Federal money on the table, both from Rob and from Tim. And some discussions about how universities can be involved in communities. But philanthropy clearly has a major role to play here. And then as a strategic grant maker in the Detroit area, how do you see philanthropy playing a part in this question of inclusive and broad-based growth?

MS. LEWIS: Thanks for the question. I have to back up a little bit because it hit me, Mark, this whole conversation around regional divergence. Southeast Michigan has been a microcosm of that if you think about Detroit sitting in the center, surrounded by Ann Arbor, Oakland County, etcetera, the automobile industry disbursing itself into the suburbs.

And the phenomena of people being left behind is not new. You know, unfortunately, a lot of African Americans, black and brown people across the country have been left behind, even in those cities that are thriving. And in Detroit it's been fascinating to see this whole notion of how do you take catalytic dollars and try to activate a new culture around innovation and entrepreneurship, which is what philanthropy decided to do 12 years ago.

In the project that I run called the New Economy Initiative, it's been the catalyst by which that happens. And so it was actually $100 million pulled together at that time and our whole focus was Ford Foundation, Knight Foundation, Kellogg, and others. And the whole focus was about how can we, as philanthropy, activate and reinvigorate this culture of entrepreneurship that we think the people of the City of Detroit forgot they had. Right? It's not that they never had it, I mean this is the community that put the world on wheels. This is the community that put universal music in our ears through Motown.

And so the point was, let us invest in things that not necessarily, in addition to things that are already happening, like adding the grant dollars to Wayne State University's technology commercial relation program. Or catalyzing a technology commercialization program within the Henry Ford Health System at the hospital. But also how can we activate new programming so that anyone with an idea and motivation to start and grow business can do so.

We also learned that relying just on tech wasn't enough, that Tim was exactly right.

Particularly if inclusion matters to you. But there's a tricky thing. When you're talking about entrepreneurship and tech and inclusion, you have to make sure that you're creating accessible points of entry and accessible capital and capital readiness for women and people of color that are pursuing that. Don't count them out of that side of it. But at the same time you have to consider small business, small business growth, and who are going to be the employers of a majority of the residence in a city like Detroit.

And so we decided to do both things, and I think the fascinating thing about philanthropy's role is that we could provide a lot of capital to things that could take higher risk than the commercial banks were going to do, that could provide lower rungs on the ladder to capital that small businesses need.

SBA, they deliver small lending to small businesses, but if you look at the data, a lot of those loans are so large that a typical small business, it could crush them. And, 90 percent of those loans are going to white founders. So even the government dollars flowing through, there needs to be someone on the ground to really insist that there's more intentionality around how you make that act accessible to women, immigrants, and people of color.

So I have a lot of opinions on this, but it hit me though, Detroit is this microcosm, and it was philanthropic dollars that invested in place, because we invested in things that people could point to, co-working spaces, tech town, one of the largest incubator accelerator spaces in Detroit. Where now is a community of hub where you have tech, growth, small businesses, non-profits, students, coming through there. We invested in CDFIs, so you can't necessarily rely on commercial things. But how do you catalyze capacity and community development financial institutions to make those loans, or even invest, like Invest Detroit Ventures and companies that can scale.

And then also how do you ensure that those organizations that are being activated see themselves as part of a broader network, that they're not trying to be the end all, be all to everyone. How do you make sure that they are aware of each other so they can make the system rational for entrepreneurs so that entrepreneurs aren't wasting their time? And everyone knows how to point people to something.

So anyway, that's my take on what's being discussed here.

MS. KIM: Well the common theme among the four of you is that it's all about intervention and not necessarily small interventions, but big ones. And, you know, let's start with kind of Rob and Tim. Rob in particularly spent a fair amount of time in the paper with Mark talking about why the market can't take care of this.

So what is the argument for these kind of large-scale interventions that we're talking about? Why can't we let the market take care of things?

MR. ATKINSON: The market does take care of it, it just takes care of it overseas. When I ran economic policy for a governor, he was a Republican, and it was very clear he believed in the market, he just didn't think the market was going to definitely help his state, and it needed active government policies. So he didn't care about the global economy, he didn't frankly care about anybody else's state, he cared about his state.

And I think that's how we have to think about this. So if you think about the market, what is the market, it's sort of what businesses do and all that other stuff, but the other thing it is is what is this, you know, 3,000 counties and hundreds and 50 states and all these cities, what are they doing? That's part of the market. And the people we have to recognize is these places have been doing this for 30 years, 40 years. And we have to recognize, it's not working. It just simply isn't working. And the reason it's not working is not because there aren't really great innovative efforts, like you're doing in Detroit or you're doing, not that those efforts aren't really innovate and great, they haven't been able to scale. And until we recognize that as the core challenge, we've got to get, you know, we've got to enable places who are doing these wonderful bottom up innovations, not in a way to tell you what to do, I have no idea how Washington could tell you what to do, only you guys know that. But you could use a lot more help, and I think that's really the key thing. That's why the market just simply won't work.

A lot of this is a chicken or egg question too. I think you were talking about, you know, the challenge of skilled software workers or tech workers. You know I was talking to a young person the other day who just got their CS degree from a very good school. And I asked him where are you thinking about going. And he said Austin, New York, San Francisco, or Boston. That's it. That's it. And I don't think he's all that unusual. And why does he want to go there? Because that's where all the good jobs there. Why are all the good jobs there? Because that's all the young kids want to go.

And so you have to sort of figure out how to break that cycle so young kids are going to, wait, I think Detroit could be a cool place, or I think Birmingham could be a cool place. You gotta get critical mass, and that requires a big push.

MS. KIM: There's a difference between an effective strategies and the wrong kind of strategies. So the question for the panel then is like how prescriptive do we want to be about the interventions that ultimately come to the fore. If there is massive Federal investment in some way, what kind of strings do we want to attach to this kind of intervention to ensure that growth does go to the right places in the right ways and so we don't have pockets of communities that are still left behind regardless of the money that's being poured into a place?

MR. BARTIK: I guess my response to that is I'm more worried about the federal government imposing too many strings rather than to few. So, you know, the strings I would attach to aid would be okay, there's a wide variety of things that have been shown to be effective different places, including investing in skills, customized training, meeting the needs of local employers, investing and helping business advice to small and medium sized businesses, investing in different types of land development. That's all been shown to be effective. That's a wide range of appropriate uses, I would maybe have a string that I would require that if a state receives aid for one of its major areas under some kind of Federal block grant, that the state needs to reduce its large incentives to large companies in non-distressed areas of the state. Let's put a cap on that and say, look, Wisconsin, you can't throw out all the rules and provide this large discretionary incentive to Foxconn that violates all the previous rules of what you've done. You can't do that, and you need to put a cap on that. So I would try to restrain some of the politically driven incentive competition for large companies, which I think does not, it's not actually I think in the interest of local areas or states, it's in the political interest of some governors and mayors, but it's not necessarily in the economic interest of states. It's certainly not in the national interest at a time when we're concerned about maybe some companies having too much market power.

MS. LEWIS: My thought about this is I think Tim is right. I mean you can't be dictatorial and prescriptive, but you also have to trust the people that are living in these places. You have to enter in in a respectful way. And I also would challenge how we even define innovators and entrepreneurship. I'm personally struggling with that. I think a lot of times we point, no offense, but we point things at just to the R&D of the university. We're not considering, you know, whether there's been an increase in venture capital in that particular city, because there's commercialized innovation that's happening through the entrepreneurs. We're not considering neighborhood innovators. In Detroit for example, there are people in neighborhoods that are creating solar solutions because Detroit, well DT Energy removed the lights from Highland Park for whatever reason. But there's a whole neighborhood group that's developed an innovative solution that has lit Highland Park. But that type of innovator is not categorized the same way as the tech guy, right, or the scientist at a university.

So I would encourage, you know, in a program like this, can we push the definition and the boundaries of who we see as an innovator and entrepreneur? And then how do you enter in in a way where your leveraging the assets that are already happening in that place, you know? How do you build on the fact that in our case where Ford now has come back into the city for the first time and reactivated the Michigan Central Train Station, and is bringing a focus on autonomous vehicles and mobility. And now you have UofM, Stephen Ross and Dan Gilbert layering on to that with the UofM Innovation Center coming in. That's added to the other activity that's been happening around TexStar's mobility and entrepreneurship that's happening. So how does the state layer in to what's already happening in that place?

For some people it may be mobility and autonomous vehicles. And another area for us of innovation is around food manufacturing. What's happening in terms of how people are manufacturing food in an innovative way. Cyber security.

So all that to say enter in with respect, engage the leaders of the community, build on what's already happening, and stretch the definition of what an entrepreneur and an innovator is in this process. And put the light on the unsung innovators who don't always get the benefit of investment capital, whether it's grant dollars or investor dollars, but are actually innovating to solve immediate problems.

MR. HOOD: I would totally agree with that. At UAB a couple of years ago we went through a new strategic planning process. And we added to our traditional pillars of our strategic plan, which is teaching and research, we added innovation and economic development as well as community engagement. And those things drive a lot of what we do at UAB.

A lot of the research that we do is founded on community-based participatory research where when we're writing the grant proposal we're identifying neighborhood leaders, neighborhood associations, non-profits, to be a co-author and a co-investigator on those grants. So that when the funding comes in, some of that funding actually goes into the hands of the people who are addressing those issues head on.

At UAB we actually have a community health innovational award program where we set aside funding for people in the community who are developing innovative ideas to tackle some type of health related issue in their community. Whether it's blight, whether it's the built in environment with its physical activity, addressing food deserts, all those things we see as being a part of health, but we also see it as part of innovation.

So it would be great for every innovation to be a high tech, high growth start up, we know that that's not going to be the case. But I agree with Pam, is that we need to expand what we think about with innovation. And so going back to the University, a lot of ways the University can support those things is, you know, through our supply chains, giving contracts to the local companies, whether they are a high tech start up or even just a small business, prioritizing and giving opportunities for folks in those communities to get the capital they need to be able to launch and grow their companies. And so the University can be a catalyst for that.

And I agree, we don't want the federal government coming in and telling us or constraining what types of industries we need to be supporting and things like that. We know, we've -- listen, we've done all the plans. We've done all the research. We know exactly what needs to be done, just having that additional funding I think would provide an accelerant to the initiatives that we already have going in our community.

MR. BARTIK: Can I just say, with all due respect, I don't agree with that because what we're talking about here is, and I get it, and I worked at the state level and we didn't want anybody to tell us what to do, we just wanted them to give us money. I'm sorry, that's not the partnership. I think one of the big motivators if something like this is going to happen, the principle motivator is how can the United States beat China technologically, both for an economic and national security rationale.

And you list, for example, Senator Schumer has proposed a massive investment, totally fantastic idea, in $100 billion in euro, and AI, robotics and all that stuff. I think one of the things we could do with that kind of commitment is to target it to places. But the key has to be you gotta pick one of these areas as important to the U.S. going forward economically. And I'm sure you could do that.

But I don't think it's one of those things where we can just oh, yeah, whatever the locals want they can do it. But I think there can be an alignment between what our key national priorities and what are local capabilities. Health care innovation is a national priority, autonomous systems, batteries, those are all national priorities. So I don't think it's a conflict, but I think it's better to think about it as a partnership.

MR. ATKINSON: Well the devil's in the details, but I would be shocked if any Federal grant program ever just handed out money with any requirements. So I'm more worried about adding on too many requirements than too few.

But I don't think it should be anything goes, but I think it needs to be flexible and responsive to local needs.

MS. KIM: Well part of the issue that we're dancing around here is the behavior of large companies. They have an extremely influential right in who is a growth center and who is not, who is a superstar city, what is not. Do we continue to think of large companies as essentially amoral actors that are pursuing their best interests, or are we at the point now that we demand more from the private sector in terms of where they go, how they grow, what they owe the communities.

MR. BARTIK: Or maybe do we try to strengthen smaller and medium sized businesses. There are policies in which many of the most effective job creation strategies are really interventions that deal with market failures that most acutely affect the smaller and medium sized business sectors.

So when you talk about customized job training, why do you need to have the government involved with skills training? Well one reason is for small and medium sized companies they really can't afford to have their own training program, they don't have the dedicated training staff, they don't necessarily, they're worried their workers will leave if they train them. So you definitely need to have a government role to provide the training. General Motors doesn't need customized job training so, you know. So same with manufacturing extension. The large manufacturers don't need that help in identifying new markets and improve their technology, but the small and medium size manufacturers can use that kind of thing.

So I think we need to think about the most effective local strategies which frequently will do a lot with small and medium sized businesses, and try to strengthen that sector. And then we need to restrict some of these incentives that we do something because it's easy and politically attractive. We give out a large cash grant to Amazon because that's easy, it will get headlines, it gets media attention.

I've never had a reporter call me up and say I want you to tell me about what manufacturer extension is doing or how customized job training can help small or medium sized businesses. They're always calling me up to ask about what do you think about this latest development with Foxconn, what do you think about this latest thing with Amazon. That's all the phone calls I get from reporters are about that.

MR. ATKINSON: So again, I have to disagree with Tim here. Not surprising, and as you would imagine, given that, as you know, Mike Lind and I wrote a book last year for MIT Press called Big is Beautiful, Debunking the Myth of Small Business. Read the book. Actually, I don't care if you read the book, I just want you to buy the book.

But look, seriously, the idea that we can somehow be competitive globally with a bunch of small companies, it can't be done. You have to have large anchor companies. You look at the auto supply sector, auto sector. Michigan, yeah, they have the tier one, they have the Big Three and the tier ones, but they have tier twos, tier threes, tier fours. The other key point here, you know, you look at all the data, it's all government data, we didn't make this up. Small businesses pay less than big businesses, they injure their workers more, they have fewer benefits, they hire fewer minorities, they hire fewer Veterans, they spend less on R&D, they export less, they have lower productivity, they have more cyber risk and cyber theft. I mean you just name it, every single one small business on average is performing worse than big business.

That doesn't mean that we should be handing out massive subsidies to relocate companies. I mean I've been against that for 40 years. But I think saying somehow that you can build vibrant economies only focusing on small businesses is not accurate.

MS. LEWIS: Yeah, I think I'm in the middle because this is not an either/or conversation. I mean this is an "and" conversation because the way that we see it, I mean you're exactly right. And it also depends on what you are doing in this in service to. So if this is about -- when it's only about industry diversification, right, then there's more of a push on large tech, high tech, life science, etcetera. What we discovered is though because you're dealing with -- don't talk about Detroit, talk about the State of Michigan where 40 percent of the residents there can't even afford basic needs. It's got to be an "and" solution.

And so if you're dealing with industry diversification that's one thing. If you're trying to solve the problem of raising peoples' quality of life so they can eat and pay for Internet and take care of themselves, you have to assume that those large opportunity, industry-driven firms don't always have accessible jobs for the majority of your residents. So you have to do it all.

And the other thing is there's this beautiful reinforcing loop between the two because as Birmingham grows and gets the big companies and grows their tech sector, those people that are coming are going to need a place to eat, they're going to need a place to get their dry cleaning, they're going to need, and it reinforces each other, so I'm not of the school of pointing which is which. I think we have to recognize the balance and respect both. And that's what I want to say about that.

MS. KIM: In the few minutes we have remaining I'd like to open up for questions from the audience. Please state your name and affiliation and phrase the question as a question.

MR. GOSSIN: Hi, good morning everyone. My name is Ryan Gossin, I'm with an organization called the Center for Public Impact. And our work is focused on unlocking the positive potential of government, particularly at the local level. And that's what I want to ask the panel about.

I've heard a lot about what the federal government needs to take into account in order to, you know, catalyze these growth hubs, but what would you be looking for at the local level, would there be chief innovation officers, dedicated entrepreneurship offices, whatever it may be, to know that at the local level they're really catalyzing and spurring the types of things you're looking for.

MR. BARTIK: I think it was already referred to in some of the earlier discussion about getting outside of silos. And so there are silos you want to link the university with the local community, you want to hopefully link the city with the suburbs and the rural communities.

I mean look, this is a local labor market issue. Local labor markets are bigger than the city, or certainly than a neighborhood. So we need to figure out, I mean one of the problems we have in the U.S. is the way our local governments are structured is frequently not optimal from the point of view of making local labor markets work.

So I think you need to somehow, as local leadership, work to overcome those silos that both separate economic development from workforce development. They tend to still to operate totally separately. They shouldn't. I mean, you know, workforce development should be tied to what jobs are needed, and when you create jobs you should be tied to what skills are available in the local labor market. I mean this makes sense. The labor supply and labor demand, they're part of the same market. They need to be linked. So we need to get beyond these silos, and it takes creative local leadership because our local governments are structured in the silo way.

MS. KIM: Rob, do you want to add to that?

MR. ATKINSON: Well I don't think the issue is should you have a CIO or this or that. I think the issue is much deeper than that. And that's by and large virtually, I want to say no, but also no city in the U.S. is really innovative. They talk a good game, you know, they have chief innovation officers who sit on the side and talk about innovation. They're not really innovative.

So all I would want is I would want most cities to be half as innovative as Singapore, and we'd be a long way away. I mean Singapore has a digital twin of the entire city, if you know what digital twins are. An entire digital twin of the entire city, unbelievable. I mean fantastic.

So I think that's actually one of the points of what Mark and I's proposal is to win this competition you've got to commit to the hard, political, and institutional barriers locally to say yeah, we're in it for real innovation. We're going to confront the bureaucratic structures we have in our systems and really push them to be innovative. I think that's much more about anything else than having a particular person or a particular office.

MR. HOOD: I just want to quickly build on that. I think another thing we have to think about in our regions is who's going to be there for the long haul? You know, in Birmingham we used a lot of the banking industry had their headquarters in Birmingham. We have one left now, that's Regent's Bank, that's because of merger and acquisition, things like that. The administration in our local counties and cities change every four years or so. But you know who's always going to be there? Your universities and your utility companies.

And I think a lot of the partnerships that we're going to see in our regions probably should be centered and anchored around those anchor institutions, which are our universities and your utility companies, particularly your electric companies because they have a vested interest in economic development and they can provide a level of sustainability that a lot of other institutions cannot.

MR. AULTMAN: Hi. I'm Fred Aultman, I'm retired so I can come to these sessions. As far as I can see there are two separate problems that interface a great deal. One is technological development, how do we stay a world leader, and we're not likely to do that by remaining concentrated.

The other problem is getting good employment benefits nationwide. Those two things are both important. How do you merge them?

MR. BARTIK: Read our report. Well I think you need to pursue both. And I think that it would be substantively wiser to pursue both. I mean, you know, I mean one is an issue of whether or not we have the right Para technological development, are we involving enough the Detroits of the world, the Birminghams of the world, the Ann Arbors of the world. And the other is the issue of how we spread economic opportunity. And those overlap to some extent, but they're not quite the same thing.

MS. KIM: We have time for one more question. Okay. Right here in this middle row.

MR. JOHNSON: Thanks. Mark Johnson from Clemson University. I think one of the strengths of the report you published is actually not that we have a place that has things and places that don't, is that you actually stratified it and defined different categories of cities out there.

And much of the discussion today has been about developing a policy. Do you think we need actually five policies, and how might each of those policies be different, depending on which kind of area you're in?

MR. ATKINSON: That's sort of the tension between Tim and I. I think our conversation is that, you know, in an ideal world if, you know, Tim and I were Czar, we'd have at least two. We probably have a third for rural, like really rural. You'd have to have something specifically for them and then, you know, give some crumbs to Silicon Valley so they feel good.

MS. KIM: Okay. Do you want to add to that? Okay. We actually have time for one more question. I'd like to go to the second row here.

MS. GERHART: Hi, I'm Jackie Gerhart from EPIC, that you'll hear about in just a second. And my question is, you said a lot of things about your solutions, but specifically what does it look like to win, for each of you? Does that look like increased market share, does it look like increased jobs, is it that the six of the 12 cities that you invest and win, or is that 70 percent of those companies are successful? What does that look like for each of your communities?

MS. KIM: That’s a great question.

MS. LEWIS: For me, what it looks like to win in Metro Detroit, I’m going to try to keep this short.

But it’s not just about jobs, it’s about jobs that are paying at least over $55,000 a year to start, that are available to people that live within the city. Right now there’s a spatial mismatch issue because people that live in Detroit that are working, are leaving Detroit to work. People that are in Detroit working, most of them are coming from out of Detroit to work, and those are the higher paid jobs.

So winning would be that the residents of Detroit are actually having access and equipped for jobs that are in proximity to them. The other win would be that I just feel like a lot of problems are solved when people have income and agency. And so if you can use these strategies to deliver that, I don’t care if it’s an innovation job or a job that’s just giving someone income and agency. And then opportunities to build their own individual wealth so that they can put back into their community, I think that’s winning.

And winning would also be bridging between how we see, I’ve said this before, how do we see innovators and entrepreneurs and not limiting that visual of who they are.

MR. ATKINSON: So I think for our proposal it’s pretty straight forward. If you read the part of the intro or exec summary, you note that there is a number there where we identified, Mark’s team did this, all the types of industries, the jobs that something was at 93 percent go to really four places, Silicon Valley is one.

So I think the metric would be you put this program in place and after a decade 40 or 50 percent of all advanced tech job growth is in the next 10 metros. I think that would be a huge success. Then you’d have gotten something.

MR. BARTIK: I would view success as being we have huge disparities across local labor markets in the U.S. now and employment to population ratios and an access to good jobs. I would like to simply narrow those disparities. If we did that, if we increased employment to population ratios in Flint, and lots of California, Oregon, Washington, outside of the coastal cities, upstate New York, Appalachia, all those places, it would put upward pressure on wages there, it would provide better job opportunities, and it would be not only fairer for the U.S. but it would also better utilize workers throughout the country not just in a few places.

So to me that's success. I think it's fine to have more high tech centers, but I think we need more than that if we're going to really have a broader equity across different neighborhoods and communities in the U.S.

MR. HOOD: I think in Birmingham we see ourselves trying to challenge Atlanta and Nashville to see who's going to be the Silicon Valley of the South. So beating our sister cities I think would be awesome for us. I see my colleague, Rodney Sampson, here from Atlanta. If you guys haven't looked at our Opportunity Hub, please take a look at Opportunity Hub because they're doing some awesome things around, exposing college students, particularly under represented, under estimated students, to take an entrepreneurship.

But we've been engaged with the Brookings Institution for the past 12, 13 months, around rethinking economic development. And that was a partnership that involved the Universities, the corporation community, the non-profit, as well as the elected officials. And I think we finally coalesced around a certain set of goals for our region, particularly around job creation, job preparation, and job access. And it looks like we have broad buy in, everybody across the fabric of our institution or our City around one of the goals around creating quality jobs, giving access to those quality jobs, particularly those who are under or unemployed in our community. And then providing access to capital and other supports to support our start up ecosystem.

So I think we're clear on that. And again, having the resources through which we can implement and execute on that is what we need in Birmingham.

MS. KIM: Terrific, thank you. Please join me in giving our panel a hand.

So I now have the privilege of turning the stage over to our keynote speaker. Judith Faulkner founded EPIC Systems in Madison, Wisconsin in her basement in 1979. Today this company is the nation's leading medical software company covering more than 250 million patients' lives. The company also employs 10,000 people in the Madison area, and is one of its leading employers.

The success of EPIC I think captures many of the themes that we've discussed here this morning, entrepreneurship, innovation, the value of university partnerships, and the shared success that can flow when a company is deeply engaged with its community.

This story is one of the reasons why the Brookings Institution has singled out Madison as one possible candidate to be among the nation's next growth centers. Ms. Faulkner.

MS. FAULKNER: All right. So I'm here to talk about what it's like to start up a company from nothing. And I'll start with some background.

When I went to school I loved math. I had some really good math teachers. So I think at heart I'm a mathematician. And my undergraduate major was math, and in my junior year I went to the University of Rochester where I was supposed to have a summer program sponsored by the NSF in aerosol physics, which I knew nothing about. I was supposed to work in that role. And when I got there they expected me to do programming. Well I had never seen a computer, I told them that. And so they handed me a Fortrend book and gave me one week of access. At the end of the week they said I was a really good programmer. And at the end of the summer we wrote two papers.

Then I went back to school and applied for graduate school. I applied to several different places, and then my husband I had to choose do we go to Boston, Harvard, do we go to Wisconsin, UW, do we go to California, Stanford. And we thought about it and decided we wanted to go Wisconsin. They were all good schools but we liked the idea that Wisconsin was in the Midwest, that it was a place where we'd probably be able to have trees and see animals, and it felt like a good place. Well when we drove there we found it was a city. And indeed there's so much of it that is really good as a company when you start up. And I'll get into that a little bit later.

When I went to school there I got to say, back up a minute, that both Stanford and Wisconsin did something I didn't expect. I applied for graduate school in mathematics and those two switched me on their own to computer science. I thought that's wonderful, that's just playing games, that would be so much fun. So I was really glad that it was computer science.

And I took probably the world's first class ever in computers and medicine. The person who taught it, Warner Slack, asked me to work with him and his team, and I said okay. And they had a bunch of different projects like calculate call schedules for the doctors and things like that.

And then one day I was brought in and they said that they needed a system. They were trying to solve a problem, which I think is so much about what we're talking about with creativity. They need a system that would allow them to keep track of patient clinical information. Well back then there were systems keeping track of labs, and there were systems for billing, but there really wasn't anything broadly available that we knew of at all for clinical.

And they wanted to be able to define their own data elements and design their own screens. Well, that made real good sense because if you're going to do clinic, everybody's clinical is a little bit different. But there was no oracle or psi base or D base, and we didn't know the words "data base management system." So pretty much had to invent that, with the help of a little system we saw at Beth Israel.

So I went away for about a year and wrote *Chronicles, The Underlying Infrastructure*, and you can tell there's a sense of time in its name, and came back with it. And started putting it in different places at the University because different departments asked me to please set them up with the system, that they wanted to keep track of the clinical information of their patients in their specialty.

Well I would start getting calls from the people that I had worked with as they went around the United States and showed people what they were doing. They showed their peers, they wrote papers, and they'd call me up and say "Judy, start a company." I would laugh.

That happened for about two years and I kept saying no. I didn't see myself as running a company. But eventually I said, I think the last week before I said yes, I had four calls "Start a company." So I said yes, had no idea what to do. Went and saw somebody who had spun off, a lab company from the University, and he said three things.

One, get a good lawyer. Two, get a good accountant. Three, get permission from the University. So obvious that I hadn't known any of them. So I went and did all of those three things. Then I did something that only maybe 15 years later did I find out that both the accountant and the lawyer thought that I shouldn't have done it, at the time at least. But it was really a good thing.

I went back to my customers at the University and asked them, who would like to be part of the company. And for that, keep your day job and work weekends, evenings, sometimes you might have to take a day off. And for that you could buy stock. Well they all said yes. And we valued the entire company at $70,000. So if you bought 10 percent of EPIC, you paid $7,000, and they got good returns.

We started after about two years of preparation, in the basement of an apartment house. And we had two rooms, one and a half people, I was paid half time, had a morning assistant and an afternoon assistant. And next to us was American Girl Dolls, except it was known as Subject Index at the time, but it turned into American Girl Dolls. So two real beginning start-up companies in that one incubator basement.

When (inaudible) came in and moved them to a nicer facility, we bought her used furniture. So let me show you a few slides. Oh, and I do want to say something, which is we avoided from the beginning venture capital, private equity, any outside funding. And part of it was because we weren't really thinking that way. I remember we put our house up for collateral, and we got a $70,000 loan from the bank as well to buy a computer, and that's why we put our house up for collateral. Never bothered me, I never thought that the company wouldn't make it. I had no idea how big it would become, but I never thought it wouldn't make it.

And I'm going to show you some slides now. When I developed the software I put the patient at the center of the software and all the data around the patient, for whatever purpose that would be. Then this slide represents three things. The pedals on top are everything around the patient, that's a kid. I'm married to a pediatrician so you have to have kids. And sense of humor. If you come to EPIC you'll see a sense of humor everywhere.

Let's go into the early days. How many of you remember these? That's what it used to be. I don't think people would want to go back to that now.

Then you get to '79 when we started the company. Upper left-hand side is the apartment building, and you can't see it there very well, but there's two little windows at the left-hand side where the bushes are, those were our windows.

And right here is a 50 megabyte drive. You couldn't get near it because if you got near it you disrupted the data inside and you would corrupt it.

Why were we called EPIC? An epic is an Iliad or an odyssey, it's a Homer's poem. And so if you change nation to patient, that's where the name comes from. We have a smaller version called

Sonnet, Hye Ko and Kento are the phone and the table version, and the watch is Limerick. So we say even though we're software developers, it doesn't mean we're not literate.

How did we start? So in '79 the world was hard coated, usually cobalt, lab and building, and a snapshot in time. And so what I had developed was dictionary driven so everybody could change it themselves and create their own clinical information. Was a clinical information system, called Chronicles because it's over time.

Time, by the way, there's three kinds of time. Things that never change, like your birth date, things that always change, like your vital signs, and the things that sometimes change, like who your general practitioner is and what your surgeries are and your major medical problems, etcetera.

My youngest daughter was born three months later, and so you're going to see in some of these pictures is how she has grown along with the company.

Then in 1986 you see that other companies were creating separate clinical systems and billing systems and scheduling systems. So we put the patient at the center and made it one system. I like the idea of you look for problems and try to solve them. And that's what we've done through all of this, the problems we're solving.

And going back to what Steve said about saying "Yes, if" and not "No, because." I probably use that phrase at least once a day with somebody who's come to me with a "No, because," and I say "Yes, if." One of my favorite examples of that is someone who asked her financial advisor if she could retire and live comfortably for the rest of her life. And he said "Yes, if you die next week."

So I wanted to talk a little bit about the Midwest here too. I really feel it's very lucky that we stayed in the Midwest. Much more stability in the workforce, you don't have job hopping. Those of you who have been to the Midwest know it's hard working area, people really hunker down and enjoy the work. And of course in the wintertime, what else is there to do?

The education is good, which I think is key. We were able to buy a lot of land so we could pop up a new building like a mushroom when we needed it, and not run out of space, and it was affordable for the land. One of the folks recently who moved from California to the Midwest recently said that he was able to reduce his mortgage by half and get three times the size of a house. He didn't have to decide do I choose between buying a house or sending my kids to college. And he didn't have to have a two-hour commute if you count it an hour each way back and forth going to work.

So there's a lot of good reasons why going to the Midwest is good. And when I think about that I think that we went to Madisen and it wasn't much of a tech place when we got there. I don't think Seattle was much of a tech place before Bill Gates got there. I've heard Jeff Bezos say "Are you a missionary or a mercenary? Because it's the missionaries who generally win even though they weren't in it for the money. And the mercenaries generally don't." So I think that's an interesting thing too.

We didn't take, as I said earlier, venture capital, private equity, because what happens then, you get flipped. That's how they make their money. If you really are in it for the missionary side you want to stay in it and watch it grow and watch it become something useful to human beings and a valuable thing in terms of what it contributes. That's why you're in it. And so if you're in it to flip it, that's fine, then go with venture capital. But if you're in it to grow it, then that's a risky thing to do.

Another problem that was solved, how do you get the doctors to actually be hands on in the system and not fill things out on paper and have it entered in. On the left-hand side the old version, black and green screens, the right portion, and that's an actual first green that we used that was graphical user interface.

How many of you use a patient portal? Okay. How many of you use MyChart? Okay. How many of you know, well, no I'll ask that question later. Okay.

So the patient portals have been stand alone. You're to enter your own data in, you're to keep it up to date, you didn't really know the diagnosis or the medications so you got it wrong, and after a while you got tired of doing it and it didn't work very well. So we made the patient portal integrated with the software.

Then we built an in-patient system. So there's a hospital and a clinic -- oh, you can see my daughter keep growing up. That's her older brother there with her. There's a hospital, there's a clinic, they should be one system. You are one patient, it should be one system. So we made it one system.

This is showing that before if you were in one health system and then you went to another, your data didn't go. There was no inner operability. And we wrote Care Everywhere because my husband had a patient who died when she went to the wrong ED and they didn't have her record. And he said "She didn't need to die if they just had her record they would have known what to do." I will always remember his words. He said "They would have known what to do, it would have been easy."

So we went to HIMS, the vendor group organization, and said "When will they have standardization of data so we can send it back and forth?" And HIMS said "Don't hold your breath." So we said well at least for the EPIC customers we can make it so their data can go back and forth. And that's what we did. We wrote Care Everywhere. It was difficult because nobody would take it. The lawyers and the compliance officers would alert their executives that it was too dangerous to do. So it took two years for us before the first user agreed to do it. And we heard a talk from the CEO of one of the places, who said that the CIO just came in and said "I need the software, will you sign it?" And he signed it. And he said if he had ever known what he was signing, he wouldn't have signed it. So it was a lucky fluke that we got Care Everywhere off the ground.

And there's Francis, the first patient ever, who got her data Care Everywhere'd, inner operable. And she was so proud of it, wanted everyone to know.

This is called Community Connect. Another problem, what is that problem? And that problem is that you've got your hub organization and then you have small little organizations all around. Two-doctor clinic here, four-doctor clinic there, this is Community Connect so you could connect with them. And again, have the patient in one.

My daughter's getting married there, and we're bringing the Care Everywhere information all together.

And here we've got extending outside the walls of the clinics and the hospitals, and extending to other groups such as CBS or dental. All right. So how many of you have tried to get your records transferred and couldn't do it? Okay. Those of you who have MyChart, make sure you look on your screen. What you'll see is that you have Share Everywhere. We got so frustrated that patients couldn't go places and the record being transferred, that Share Everywhere allows you individually to move your record anywhere you want, as long as there's Internet.

And I'm going to go into today now. Okay. So that's our campus, up there is our corporate treehouse. Everybody needs a corporate treehouse. We're in multiple countries. Most of our customers, U.S. News and World Report are listed there as the top facilities. They do really well in quality and safety. They do well in operating margins. They do well in doctor happiness, with the reds.

A little bit about culture and management. It is a challenging industry. Why can't you get it right?

1992, or about there, the different organizations who were in high tech, and tried to be, for healthcare. They all went into it saying a lot of money to be made. These are the only three who survived, the rest went away.

The three who survived have in common that they were all healthcare IT companies. The others came into it, found it too hard, and got out.

So go where the market isn't, and this goes back to location. I'd say go where the location isn't also. So stay away from the really heavy hubs. We avoided Wall Street, all those reasons there. And we're builders, we're not acquirers. Most acquired other companies, and I think there's a really interesting reason why. If you were trained in finance or business, then what you were taught was venture capital, acquisitions, mergers. And what I was taught was programming. So that, by the way, comes on the webs, we didn't write it.

This is us. So this is a direct, very common picture, all the acquisitions, and this is us. And I just think the difference is what was the education. So a few more things, there's our campus, it's a fun campus. The more you invest in your buildings to make your building good for the staff, the more productivity you will have. Because with an 11 percent compared to 80 percent, if you can increase productivity by 20 percent you've paid for all your buildings. And the buildings are fun. Have a fun campus.

We were told recently that we are the number one choice of college graduates who are looking for jobs. And I think the campus plays a big part of that because they come there and they see it as a fun place to be.

It's environmentally conscious too. And having individual offices allows you to be productive. So those of you who are in cubes, which is common in IT, or those who are in open seating, common in IT, it doesn't give you the productivity that you need.

Our dress code is when there's visitors you must wear clothes. One of my favorite sayings.

Finance, we have no budgets. How many of you have no budgets? No cost centers, no profit centers, we say if you need it, buy it, if you don't need it, don't buy it. It works.

Worldwide we have seven sales people. We use no financial incentives in the company, those folks have no quotas and get no commissions.

These are our Ten Commandments. We go over them every staff meeting. Why have things that are your mission statement or whatever and not go over it? So we constantly go over it.

Same thing with our principles, we go over them all the time. And then we ritualize them, put them in all the bodily functioning areas, break rooms, bathrooms and copy rooms. And once a month we talk about them. We have a required staff meeting, you must go to the staff meeting. And if not, you can't make it, you need permission from your team lead, from the President of the company and from me, in writing.

How many of you have job descriptions? Okay. How many of you have job descriptions, are they accurate? Okay. We have no job descriptions for that exact reason.

And then these are things about us, saving lives, doing good, having fun, making money, in that order.

And what we do is try to share with our health system customers what's good.

(Video played)

MS. FAULKNER: And so we're not wizards, but we have to fix healthcare. We have a book for what different health systems have done to improve healthcare. And what we tell them is read the book, you're sharing the same software, learn from each other, and learn all this. Instead of the chief innovation officer, oh, that's fine you can have a chief innovation officer, but have a chief imitation officer. Figure out what others have done well and imitate it.

And so we have this big book with lots of information n it. Then we have directions for a number of things, like how to -- sepsis kills 11 million people, it's 20 percent of the avoidable deaths. It should be avoided. How to avoid sepsis.

And then what we have is for CEOs, one sentence for CEOs. They appreciate that. You may think it insults them, but no, they appreciate it.

And that's everything. Thank you.

MR. MURO: Well thank you very much for that unique story, Judy. Which to me underscores how thousands of jobs and a surge of prosperity can result if we really try to push back against the kind of divides we've been talking about, through, you know, an incredible university, a great eco systems, and great entrepreneurships.

So I just want to thank not just Judy, but all of our speakers and all of you who have joined this morning. For our part, know that we at Brookings will continue to stay focused on this important issue and work to inform the discussion, and maybe help proliferate some more ideas since we're heard we need more.

So thank you all, and have a great day. Take care. Thank you.

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CERTIFICATE OF NOTARY PUBLIC

I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

Carleton J. Anderson, III

(Signature and Seal on File)

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