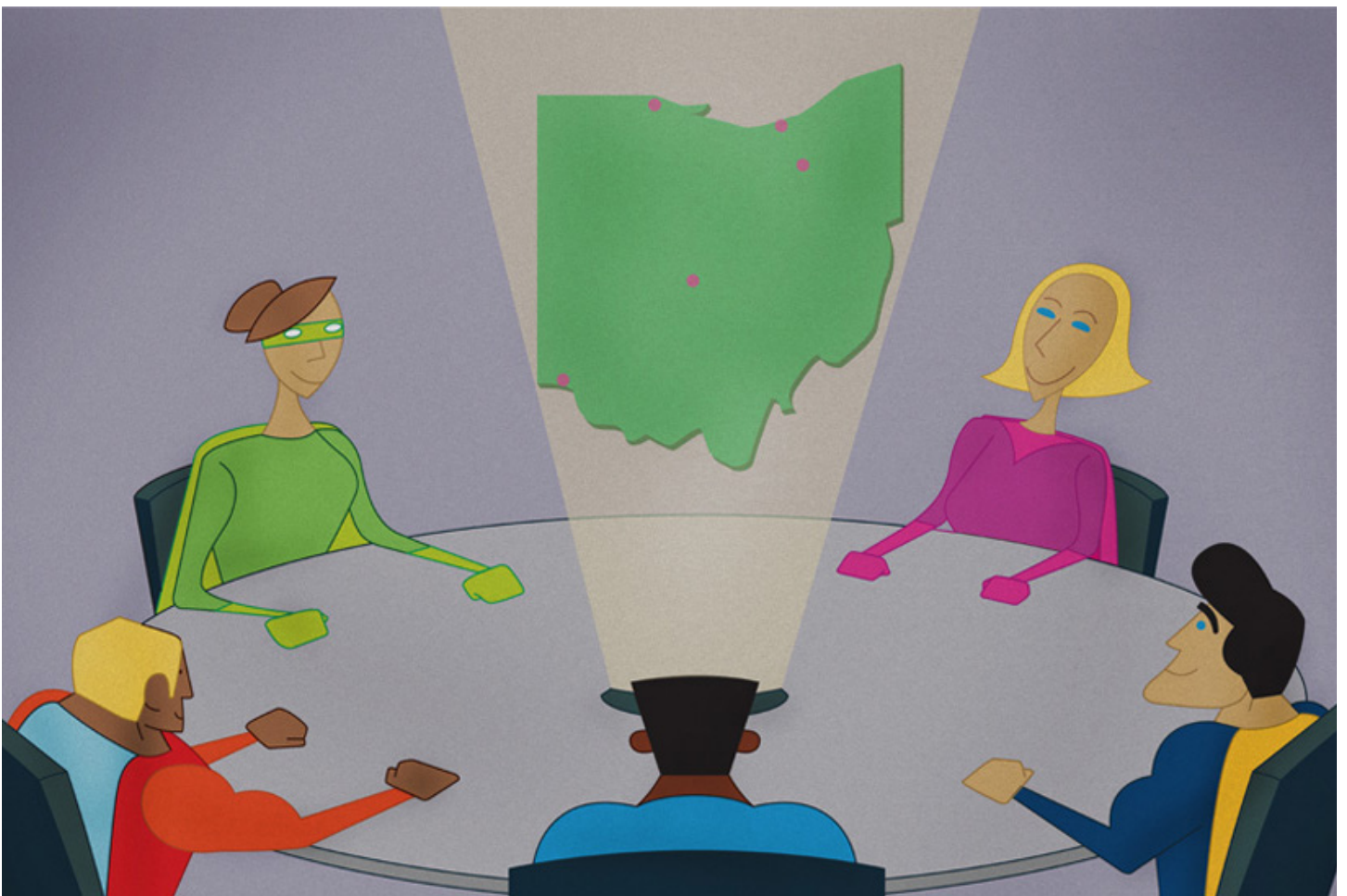


ISSUE
061

FOREFRONT

THE POST-HERO ECONOMY

Learning to Lead Through Networks



The following is an edited excerpt from the upcoming book *The Metropolitan Revolution* by Bruce Katz and Jennifer Bradley. Brookings Institution Press will release the book on June 17.

Story by *Bruce Katz and Jennifer Bradley*



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When economic sociologist Sean Safford first began comparing midcentury board lineups of local Boy Scout chapters and garden clubs in the cities of Youngstown and Allentown, the idea that such data could have any bearing on the future of a city seemed shaky at best. Safford's research, about who knew who and from where, was coming at a time when communities had begun to take seriously the idea that civic participation, even participation in something as seemingly superfluous as a bowling league, mattered to the health of a community. Even so, his question — how the structure of civic relationships shapes economic trajectories — seemed rather far afield. Networks mattered. Did their composition matter to a region's economy?

That was the early 2000s. A decade later, Safford's argument that networks must cut across class, social and political boundaries to be effective — laid out in the book *Why the Garden Club Couldn't Save Youngstown* — is particularly on point. Through his careful reading of archived society pages and board minutes dating from 1950 through 2000, Safford determined that Youngstown, Ohio, a fading steel industry hub, was actually stymied by its most powerful insiders. The network of elites that called the shots in the city were too tightly enmeshed, intertwined and isolated from other groups in the region to effectively guard against the steamroll of change that would gradually wipe out the local economy. In other words, there were too many strong ties and not enough weak ties.

These elites, marooned on their own small island, lost power as the domestic steel industry declined all around them, leaving behind a fragmented and uncoordinated region. Allentown, Pa., by contrast, had looser networks that provided alternative relationships that cut across social, class and political lines, encouraging new alliances and exchanges. All this meant that while these two areas of the Rust Belt had very similar demographics, economic structures and challenges, Allentown was better equipped to bounce back from the decline of the steel industry, specifically because it had individuals and organizations that could serve as bridges between the various groups that needed to be engaged in the region's recovery. It turns out it did matter who was on the board of the Boy Scouts.

When telling stories of transformation and turnaround, it is tempting to shape them into personal stories about heroes. One charismatic visionary — a mayor, school superintendent, entrepreneur, outraged citizen — steps up and, with unrelenting vigor and inspirational leadership, starts an irreversible cascade of change. But there is a growing body of research suggesting that, as a system or problem becomes more complex, arriving at a solution requires multiple minds from multiple sectors or perspectives. As Safford found in Youngstown, this search for the lone superhero, or one lone team of superhero buddies, is misguided. Metropolitan areas are so big, complicated and diverse that they don't need heroes. They need networks.

A NEW NETWORK FOR NORTHEAST OHIO

Networks, **defined simply** by popular science writer Steven Johnson, are “webs of human collaboration and exchange.” What makes them powerful is their ability to achieve more than any one entity could do alone — something the strongest networks do, again as Safford found, through bringing together a multiplicity of weak ties rather than the repetition of strong ones. After all, if everyone knows each other already, it's not networking but just another meeting.

But it's hard to describe the particular alchemy of networks because there are so many actors and so many places to start. And that's the point. Every actor matters, and any particular interaction or transaction could reinforce the network and breakthroughs tend to come about as the result of a hundred small things.

Here, we bring the story back to Northeast Ohio, which spans four distinct metropolitan areas: Cleveland, Akron, Canton and, of course, Youngstown. By the early 2000s, citizens recognized the quiet crisis that was gradually bleeding the region of people, jobs and vitality. A 1990s-era building boom in Downtown Cleveland had produced headline-grabbing tourist draws like the Rock and Roll Hall of Fame and Museum, the Great Lakes Science Center and three new arenas for the city's professional basketball, baseball and football teams. But the investment wasn't spreading. The new stadiums attracted crowds on game days, but when games wrapped up the spectators mostly drove right home, leaving empty streets and

boarded storefronts in their wake.

The *Cleveland Plain Dealer* offered a solution. “Talk to civic leaders, entrepreneurs, academics, builders, business people,” then-editor Doug Clifton wrote in 2001. “They all agree: Greater Cleveland must get serious about creating and backing a master plan for economic development or face economic extinction.”

The story of how networks are shaping this recovering Rust Belt economy could be told in many different ways. One narrative might focus on the actions of CEOs and business groups, who had backed efforts to jumpstart the manufacturing sector (or advanced energy, or medical device development) and eventually coalesced around a broader, interlinked agenda. Another story would start in the city of Cleveland,

When telling stories of transformation and turnaround, it is tempting to shape them into personal stories about heroes.

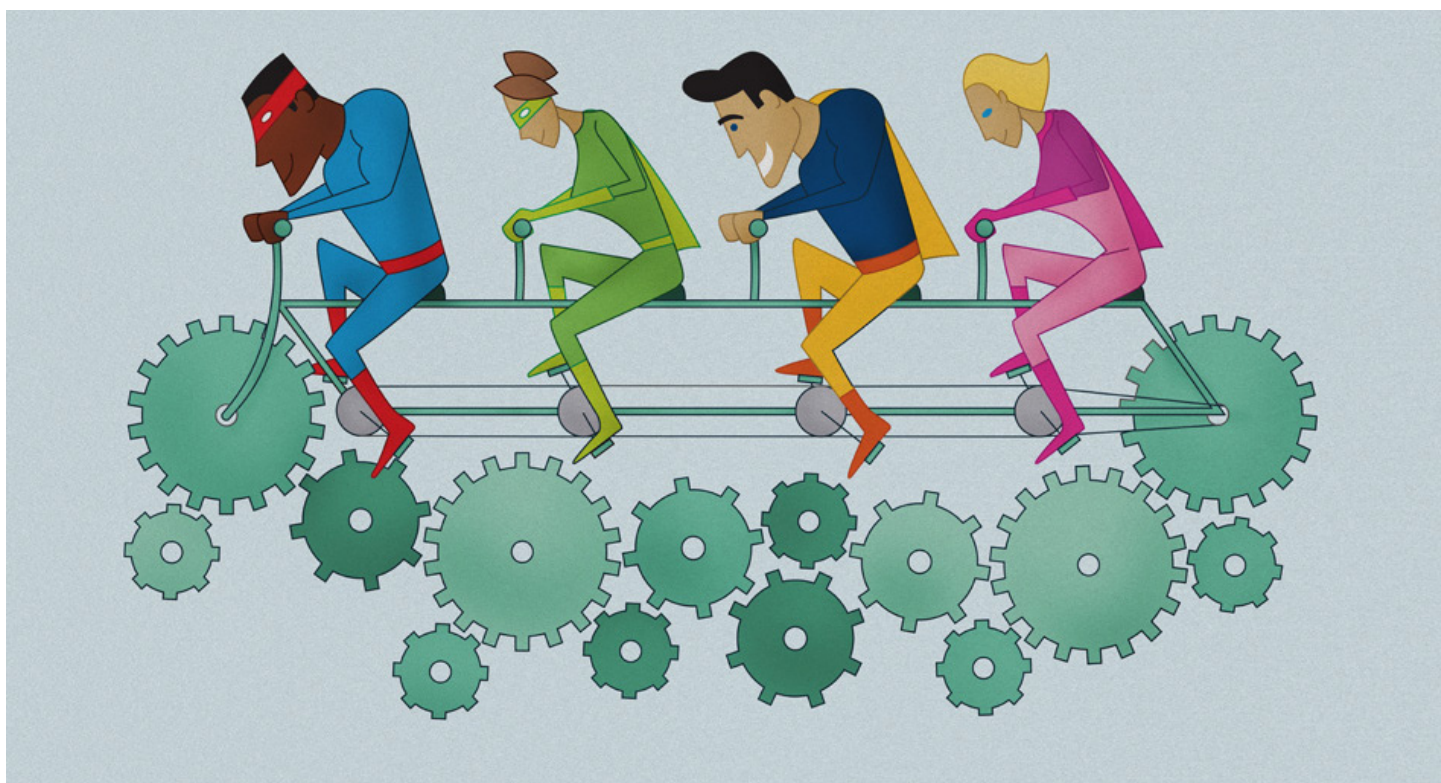
The problem was, “Greater Cleveland” didn’t exist. It was, of course, a real economic entity, a metropolitan area of 2.14 million people that comprised a \$79.2 billion economy spread across five counties and 60 separate municipalities. Greater Cleveland bumped right up against, and was also economically linked to, metropolitan Akron (696,000 people, \$21.2 billion gross metropolitan product or GMP), Canton (406,000 people, \$12.2 billion GMP) and Youngstown (602,000 people, \$16.5 billion GMP). But there was no single, overarching entity charged with creating a plan for Cleveland and its neighbors in the northeast corner of Ohio — and just as importantly, it was hard to imagine any single entity that could take on the task.

“No mayor, however persuasive or dynamic, is unilaterally going to transform the northeast corner of Ohio,” went one 2002 *Plain Dealer* editorial that captured the challenge. “No lone-eagle innovator, however ingenious, instantly will reverse decades of income stagnation and educational neglect. No single public project, however daring, will make this region a magnet for the smart, industrious people who are the raw material of the Information Age. Instead, lots of people, acting individually and collectively in different arenas and different niches, must step up and lead.” The *Plain Dealer* was saying that the region needed a new network and more specifically, one composed of a diversity of links.

and describe local leaders’ growing realization that they needed to treat their neighbors as equal partners and build a larger, robust economy together.

The story that follows focuses on one organization called the **Fund for Our Economic Future**. The Fund is one node in overlapping layers of networks, making it a particularly good place to start. One layer consists of the network of foundations that created and still operate the Fund. Another layer is the organizations that the Fund supports, which themselves operate as networks. Yet another layer is the network that these organizations have created among themselves.

All of these various layers began to converge in 2003 when a handful of program officers from foundations in Cleveland, Akron and elsewhere started talking about how their philanthropies could play a larger role in rebuilding the region’s ailing economy. These philanthropies were giving about \$300 million every year to various groups and institutions. Maybe there was a way to collaborate so the money could more effectively support a few interesting endeavors aiming to bring the new jobs and industries the region desperately needed? The state of Ohio had recently launched a new program of grants and loans to help old industries move toward more advanced technologies — for example, helping glass manufacturers move from making car windshields to solar panels, which often rely on glass. There were a handful of new



organizations in Cleveland and other cities that were trying to create a similar program geared toward the biosciences. Perhaps foundations could be a catalyst? They could provide critical funding to help these new organizations grow and win highly competitive state grants while connecting disparate economic development efforts in a way that could potentially benefit the region as a whole.

By in July of the following year, a small group of foundations had circulated a white paper making the case that all philanthropies, whether they supported fine arts or environmental health, had a tremendous stake in the economic health of the region:

Economic prosperity goes hand in hand with cultural amenities, education, health, arts, racial diversity, and many other causes that are the focus of foundation activities. In a weak economy, long-term funding for these areas comes under additional pressure and contributing organizations are called on to do even more. Thus, supporting economic development can help foundations that are focused on quality-of-life issues to achieve their mission.

The call to arms recommended that every foundation consider how its grant making supported economic development because “the stakes are too high to ignore this issue.” It also encouraged foundations to join the Fund for Our Economic Future.

Members of the Fund vowed to raise a \$30 million pool of money to support economic development efforts throughout Northeast Ohio. With this notion of creating a new network rather than simply reassembling Safford’s old garden club, the Fund brought together disparate foundations. These groups didn’t typically work together and were not typically involved in the regional conversation about economic development. Social justice, anti-poverty and community-building organizations were suddenly at the same table as foundations that focused on jobs or the arts.

“We realized that we could collectively commission research, collectively engage in a big public outreach process, we could gather intelligence and voices around this that would help shape [an economic development] agenda and build a constituency,” said Bob Jaquay of the Cleveland-based Gund Foundation.

But operating as a network in a world looking for heroes is an intricate process, one that takes time-consuming conversation, patience and careful

stewardship. In the first years, the philanthropies that had contributed to the Fund, most of whom had no experience in the economic development arena, were themselves learning how to operate as a network. To assure a sense of shared responsibility and authority, the members adopted a “one member, one vote” policy. Each member, whether they contributed the minimum of \$100,000 over three years or \$10 million, as did the Cleveland Foundation in the first three years, had one vote. This policy continues to be a key piece of the Fund’s design and empowers much smaller foundations to influence the Fund’s work.

Setting such organizational policies was a necessary, if unglamorous, first order of business. The network had to have its own collaborative culture in order before it could support other entities to create their own. Brad Whitehead, president of the Fund, described this process as creating “a center of gravity” around which the larger network could coalesce.

With this groundwork in place, the nascent network could now go out into the world and develop a shared set of goals and priorities. Enter Voices and Choice, a two-year effort to develop a regional economic competitiveness agenda for Northeast Ohio. Throughout 2005 and 2006, the Fund connected with more than 20,000 residents of the region in one-on-one interviews, town meetings and workshops about the region’s assets, challenges and priorities. With these insights gathered, Fund collaborators were able to distill four goals to guide regional action: Business growth, talent development, racial and economic inclusion, and government collaboration and efficiency. In testimony to the network’s efforts, more than 90 individuals and organizations, including U.S. senators, local chambers of commerce, local governments, universities, hospitals and business groups, agreed to be partners in this sweeping agenda and orient their activities around those four goals.

For all 90 stakeholders, an unfortunate truth eventually reared its head: It is easier to agree on what should be done than it is to actually get it done. Despite near-universal support on paper, the agenda stalled. Five years after Voices and Choices’ last meeting, an independent review found that the regional economic competitiveness agenda “has [had] limited influence on the agenda, priorities, or direction of other organizations.” Some potential partners felt that the

strategy was too general to guide their own actions. Others felt that the challenges were so complex that the Fund needed to narrow its efforts rather than try addressing them all. The struggle highlighted one of the challenges inherent in networks: Even people who are willing to work together have to learn how to do it effectively.

But the Voices and Choices undertaking did have a galvanizing effect. People started to see the potential power in acting as a region, and the need to work collaboratively to direct its economic destiny. People from many sectors of the region — academia, government and constituency groups — were broadly supportive of the Fund’s work. Academics interviewed about the Fund’s impact said things like, “the greatest consequence to date is that we are talking as a region... the spirit is pervasive,” and, “it has created awareness and visibility for regional thinking.” Others were inspired to collaborate with their own peer organizations to see if they could accomplish more together than separately: One leader of an organization that focused on meeting minority group needs said, “It has become clear to me what is important [is] to have organizations working together.”

INTERMEDIARIES

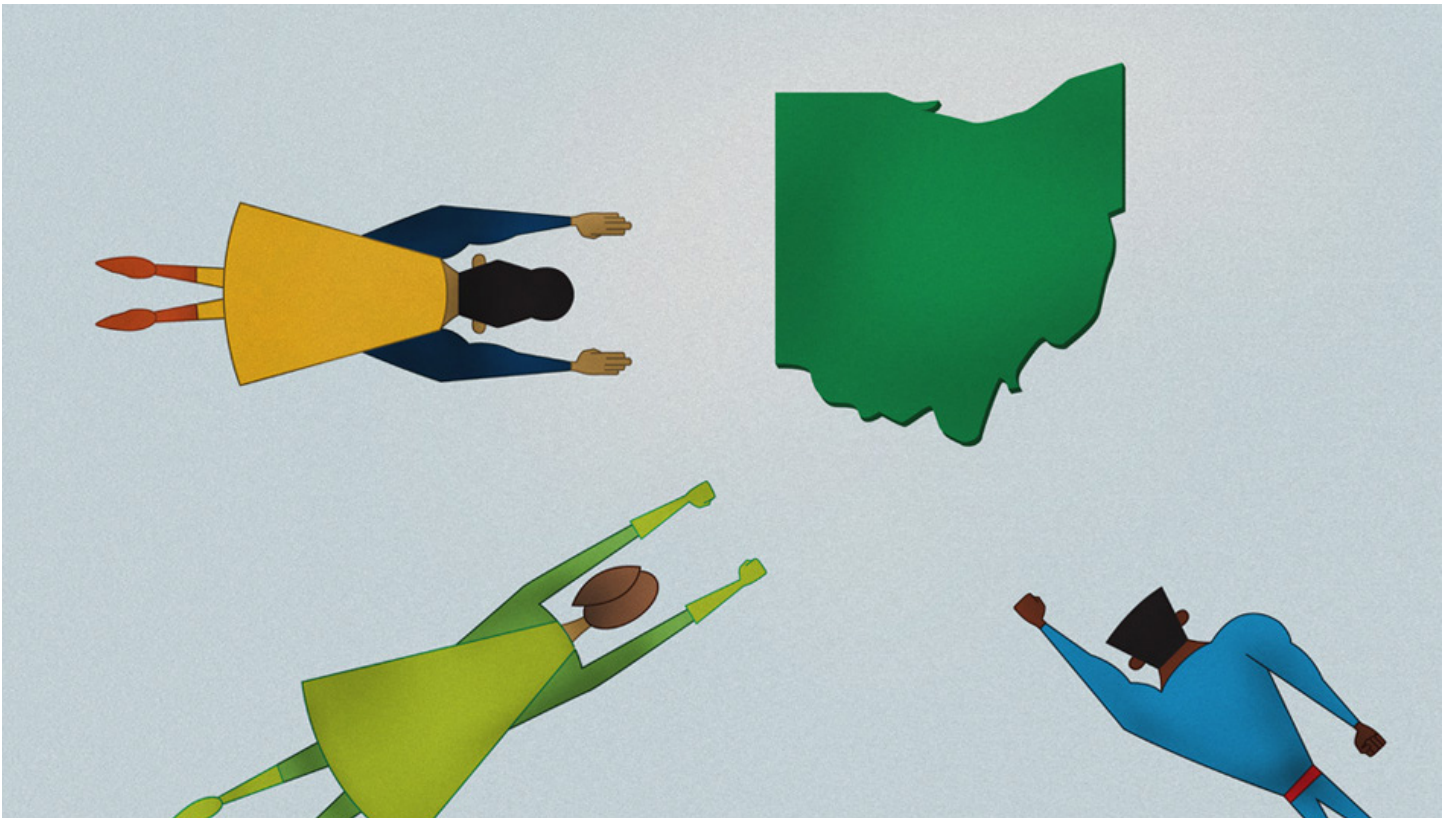
So once you have the network, what’s next? If you want to translate the conversation into economic activity, it helps to direct resources toward a particularly promising sector and figure out what connections are needed to take that sector to the next level. In Northeast Ohio, two of those sectors were bioscience and technology.

The doctors, researchers and scientists at the region’s many universities, hospitals and research institutions are constantly developing new technologies. Most universities and hospitals have special offices for technology transfer, meaning that they manage the transfer of these innovations to companies, usually by letting the companies have a license to use an idea, process or product that the university has patented. In practice, this usually means letting the highest bidder develop these inventions in factories or office parks somewhere else in the U.S. or the world. This arrangement can provide abundant

revenues for the institutions, but does not necessarily do much to advance the regional economy.

A 2009 report by the Center for an Urban Future in New York City carefully detailed how technology transfer offices in New York’s major research institutions “have been overly focused on a handful of technologies with the strongest potential to be scooped up by existing pharmaceutical companies, IT firms or financial corporations — at the expense of other discoveries that could be commercialized

and universities to recruit new staff. So economic development support is ultimately in their self-interest, although not always as immediately lucrative as licensing deals. By the early 2000s, executives and board members from the Cleveland Clinic, Case Western Reserve University, Cleveland’s University Hospitals and Akron’s Summa Health System realized that they had to change their paradigm. By developing local companies that could themselves take homegrown technologies to market more jobs,



through forming start-ups.”

The report further noted, “Some say that NYU and Columbia, among others, got so used to earning large royalties from a small number of blockbuster patents that they came to view their tech transfer office as a cash cow. Instead of trying to get large numbers of innovations into the marketplace, university leaders essentially directed tech transfer officials to focus on technologies that have the greatest potential to lead to blockbuster deals and continued high earnings.”

Back in Northeast Ohio, that failure to create a robust local economy makes it harder for hospitals

more revenue could stream back into local coffers. With that virtuous cycle in mind, stakeholders in the region started [BioEnterprise](#), a non-profit that helps inventors connect with experienced managers, venture capitalists, production facilities, other inventors, state and federal grants and whatever else they need to build their company. The end result was a new cluster of growing businesses, institutions and investors that could, with its rich network, attract other companies to the region.

For existing hospitals and universities, the cluster makes it easier to attract and retain bright and

inventive people who benefit from working in an idea-rich environment — and who may decide to make the jump from scientist to start-up founder.

The same basic model applies for **NorTech**, a Fund-supported non-profit that specializes in what's known as technology-based economic development, or economic growth through the intelligent cultivation of industries such as advanced energy and flexible electronics — the thin electronic components used in clothing that monitors vital signs and other “smart” accessories. The 14-year-old non-profit provides the support infrastructure to nascent technology clusters across the 21 counties of Northeast Ohio. Through its work, the organization helps to set an overall direction for how the clusters might grow, identify new overseas markets for exports, seek out public funds to support research or business development, and figure out how to train people for jobs in these clusters. It also provides hands-on assistance to individual companies in the cluster, helping them develop new products and find and keep so-called anchor customers — the customers that will establish their credibility with other buyers.

NorTech came to its focus industries naturally. Kent State University, a school in the region, has had a special research institute for liquid crystals since the mid-1960s, and in 1969 a researcher there made dramatic improvements to liquid crystal display (LCD) technology. In recent years, the tire companies that made Akron the onetime rubber capital of the world had given way to a new generation of companies experimenting with other kinds of polymers. When Kent State's LCDs met Akron's flexible polymers, flexible electronics was born. Meanwhile, advanced energy arose out of the interactions between NASA's top advanced energy research center, in Cleveland, and the companies in the region that make big, complicated mechanical things like wind turbines and generators.

BioEnterprise and NorTech are intermediaries. They provide the links between entrepreneurs and manufacturers, suppliers and customers, workers and jobs. “You have to be able to energize so many disparate elements to make it work,” said Baiju Shah, former CEO of BioEnterprise. “All sorts of different actors that need to get energized to row in the same direction. They will do it as long as you've got an approach that unifies them.”

The intermediary helps the diverse actors determine their approach, helps each actor decide which piece is its responsibility and which needs to be run by the intermediary, and then relentlessly communicates the vision to reinforce it among partners and to attract new partners. More generally, intermediaries are the glue that holds networks and long-term collaborations together.

The Fund's dollars were critical in the early phases of BioEnterprise, NorTech and similar intermediaries, providing 30 to 50 percent of their operating budgets. During those early years, the organizations were still finding their feet. The Fund, along with business groups, universities and others, helped stabilize these fledgling entities with grants and guidance. But as happens with successful start-ups, after a few years the kind of support needed from the intermediaries shifted. BioEnterprise, NorTech and the rest had proven their model and had adequate funding to show for it, but they needed more connecting, both to other local groups working on similar issues (bioscience, manufacturing or entrepreneurship) and to each other.

The intermediaries, for all the good work they were doing individually, still needed framework to help them work together, rather than in silos or at odds. In the mid-2000s, the Fund started to require its grantees to show how they were participating and building networks in their area of focus (such as biosciences or advanced energy) and explain what that network would accomplish in the next five years. On top of that, the Fund began insisting that its grantees connect with each other and collectively set broader goals for the region's economic competitiveness. The Fund asked its grantees to create a logic model, increasingly common in the not-for-profit realm, to show how network collaboration would apply both to the organization's mission and to the “overall competitiveness of the region.”

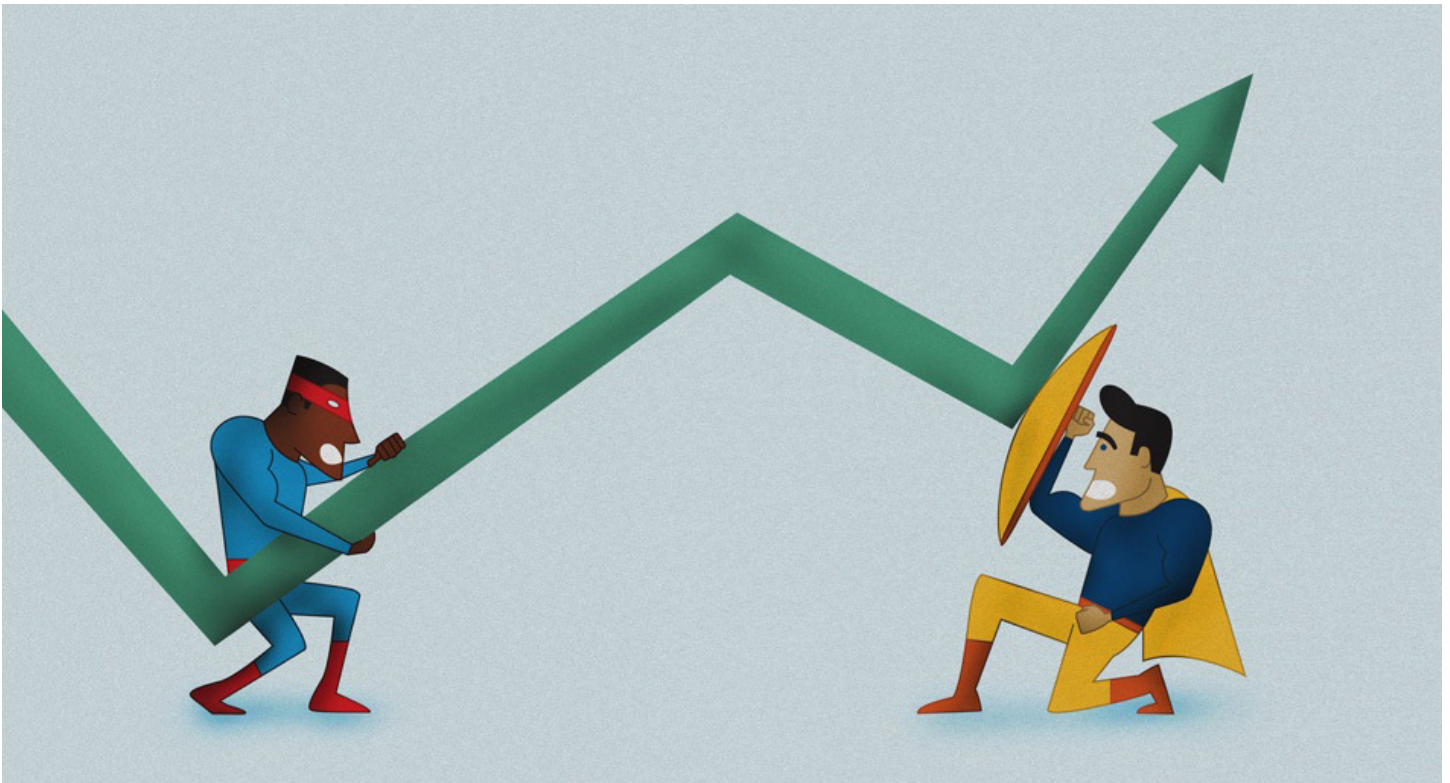
The State of Ohio gave a nudge, too, by insisting that entities apply for grants as members of a collaboration rather than individually. The Fund created a structure (and the state an incentive) so that the CEO of BioEnterprise could connect regularly with the CEO of NorTech, and both of them could learn from and share ideas with the CEO of JumpStart, another intermediary supported by the Fund. This

structure helped the now-solid intermediaries figure out how to work together, how to collaborate on grants from the state or the federal government, and work more effectively on their huge shared task of ramping up Northeast Ohio's economy. "We're all trying to build the economy," said Rebecca Bagley, CEO of NorTech. "We have a responsibility to the region. If we fight amongst ourselves, we aren't meeting that

THE MEANS

But building and protecting a network is not an end in itself. The network exists as a tool to strengthen the region, through building more equity and more capital, the social kind and the banked kind. And so far, the tool is getting the job done.

Last year, for example, the Fund played a critical role in helping the region win a \$30 million federal



responsibility."

Stewarding this network has been one of the Fund's most important contributions to the region, as it is doing what no other entity could do: Become the integrating force needed to propel a wide-reaching conversation that necessarily involves smaller organizations with their own self-interest to protect.

"For every node [of the network], the first priority has to be their own node," said Chris Thompson, the Fund's director of regional engagement. "The beauty of the Fund is our mission is to strengthen the network. We're not trying to protect our node, we protect the network's culture."

grant to **start a new center in additive manufacturing**, also known as 3D printing. The grant was awarded in 2012 to a huge consortium of universities, businesses and non-profit groups (including three Fund grantees) in Northeast Ohio and two neighboring regions, Southwest Pennsylvania and West Virginia. As exciting as the prospect of 3D printing was, getting more than 40 institutions and organizations to agree on a vision and codify that vision in a grant application was still a significant undertaking. The Fund and other philanthropies spent \$425,000 over four years to facilitate meetings, organize grant application reviews, conduct relevant research and generally do what it takes to hold dozens of partners together.

"The Fund put \$25,000 in to buy the donuts," Thompson said, "and we got a \$30 million return on

investment.”

This year, the Fund marks its ninth year of networking in Northeast Ohio. The region is still not where it wants to be in terms of job growth or other indicators of competitiveness, but there are some promising signs of a turnaround. The Fund estimates that, during its first nine years, the work of its grantees helped add 10,500 jobs, \$333 million in payroll and

Gund Foundation, said in 2012. “Our organizational coming together has modeled behavior for others that are thinking about questions of the economy vis-à-vis families and the people we care about. We’ve got hospitals, companies, thinking more about collaboration and how to work with clusters than ever before.”

Building shiny new stadia and office towers

“Nobody has the resources to be ‘the one’ to save anything... It’s not kumbaya. There’s recognition that this is a big, complicated set of issues.”

\$1.9 billion in investments to the region. More than half of these gains — the millions invested, the jobs created — have come in the last three years. Fund leaders take that as a sign that their efforts and those of other groups are having a compounding effect.

In a specific set of research and development-rich industries, Northeast Ohio gained jobs faster than the national economy between 2010 and 2012. The region has added 1,500 jobs in computer systems design, 1,300 in machinery manufacturing and 1,300 in scientific and technical consulting. Across a variety of advanced industries (more on that below), there are thousands more jobs than there were two years ago. Greater Cleveland, Youngstown, Akron and Canton still have far to go to replace the tens of thousands of manufacturing jobs they have lost since the 1970s, but people are starting to see a new kind of economy in Northeast Ohio, one that marries existing skills in production with a strong base of research to invent and build new technologies.

These efforts to revitalize Northeast Ohio’s economy and reverse years of decline are still a work in progress — almost everyone involved in the Fund uses that phrase. But the work is in progress and that itself is an important victory.

“Our work has revived a moribund pipeline of entrepreneurship and created a robust network that is thinking more about firm formation, what it takes in terms of finance, lawyering talent, C-level talent and what it takes to run a company,” Jaquay, of the

downtown is infinitely easier than reinvigorating a 16-county, \$178 billion economy of four metro areas. That is why there are so many examples of the former and so few examples of the latter. There is no magic formula for economic growth, only a series of well-informed (or ill-informed) experiments. Given what we know about how economies grow, how they use old specialties to create new strengths, and how knowledge flows between people and sectors, Northeast Ohio is running exceptionally smart and promising experiments.

A NETWORK OF NETWORKS OF NETWORKS

Northeast Ohio has embraced the network idea out of necessity. Being a one-man band just isn’t enough anymore. “Nobody has the resources to be ‘the one’ to save anything,” said David Abbott, head of the Gund Foundation. “It’s not kumbaya. There’s recognition that this is a big, complicated set of issues. Any one of us acting independently isn’t going to make a very big impact.”

The idea of networks, collaborations and alliances as imperative for getting things done has also taken root in private sector companies, particularly those engaged in advanced research and production. Since these industries are exactly what the people trying to change Northeast Ohio’s economy want to foster, the alignment seems propitious. The notion of competition between firms and between people is

deeply ingrained, but innovation, in fact, is often deeply collaborative and networked. As John Seely Brown, a former chief scientist at Xerox, and John Hagel, of Deloitte consulting, [explain in a 2008 paper](#):

If we look at historical periods and geographic regions characterized by significant economic growth, we certainly find bright individuals and innovative organizations, but we also find something else. These individuals and organizations come together and collaborate in evolving networks of creation, or creation nets. They play off each other, appropriating each other's work, learning from it, building on top of it and then watching and learning from what others do with their own creations.

Research and development in firms has historically alternated between collaborative and innovative, and closed-off and proprietary. Beginning in the early 20th century, companies opted for the closed model. They created special divisions populated with brilliant scientists and turned them loose to think and invent, often in a lab in a bucolic setting. Within the lab, researchers interacted constantly, learning from each other and collaborating to solve problems. But outside the lab, there were few intentional efforts to share knowledge or work together. Companies wanted to maintain tight control over their intellectual property, and their large R&D divisions gave them an advantage over small, upstart firms that lacked these resources. The disadvantage, though, was that firms could not, or would not, commercialize all of their new ideas, and new innovations grew stale if they were not put to immediate use.

During the 1970s, formal R&D partnerships such as joint ventures and contractual agreements surged from about 30 per year at the beginning of the decade to almost 200 per year by 1980. Partnerships continued to [grow by huge leaps](#) — 500 per year at the end of the 1980s, 700 by 1995, before dropping back to about 500 per year again at the end of the '90s.

An [extensive scan of research](#) by William W. Powell and Stine Grodal on collaboration specifically for the purpose of innovation in R&D finds that “collaboration across multiple organizational boundaries and institutional forms... is no longer rare.

Indeed, many analysts have noted that the model of networks of innovators has become commonplace over the last two decades.” Powell and Grodal sift through research from the 1960s through the 2000s, from several countries and several industries, concluding that, “The general picture that emerges from research in organizational sociology and business strategy is one in which networks and innovation constitute a virtuous cycle. External linkages facilitate innovation and at the same time innovative outputs attract further collaborative ties. Both factors stimulate organizational growth and appear to enhance innovation.”

The faster a field is changing with respect to scientific and technological development, the stronger the imperative to collaborate, and the more technology alliances are forged.

Some of our colleagues at the Brookings Institution have identified a specific group of advanced industries, which are distinguished by their intensive investment in and reliance on research and development and their potential for breakthrough technology development — exactly the kinds of industries that are most likely seeking to form networks for innovation. These industries include, among others, pharmaceutical, medical equipment and supplies manufacturing; specialized machinery manufacturing, such as engines and turbines; computer and communications equipment manufacturing; and highly-specialized instrument manufacturing for navigation, measuring, electro medical devices and electrical equipment. They comprise 8 percent of the overall economy and create more than 5.5 million skilled jobs.

Advanced industries hold tremendous promise for Northeast Ohio. McKinsey & Company, which is working with Brookings on advanced industries, describes the mix of products, materials and inventions that are (or will be) characteristic of advanced industries as such:

Enabling clean transport requires lightweight materials — like carbon nanotubes, alloys, and lightweight batteries. Clean power requires rare earths for super-conductivity, polymers and filters for water and gas filtering, and flexible substrates for photovoltaics. Managing the health of an increasingly aged

population requires breakthroughs in biopolymers and materials for medical devices.

Researchers, manufacturers and entrepreneurs in the region are working in many of these areas.

The important point about these sectors is that they combine production, intensive research and development, and technological intricacy (for instance, there are 10 million lines of computer code **powering each Chevy Volt automobile**). Only about 10 percent of the jobs in these advanced industries are “manufacturing in nature” according to a McKinsey & Co. report (which uses a slightly different definition of the sector than our Brookings colleagues).

But without a foundation in manufacturing, these industries lose some of their innovative edge.

companies, called **PRISM** (Partnership for Regional Innovation Services in Manufacturing). PRISM is designed to plug promising small manufacturers into the rich networks of university research in Northeast Ohio. PRISM also connects these manufacturers with business development experts, financiers, management support and, perhaps most importantly, their peers with whom they can collaborate and share ideas. PRISM is managed by MAGNET, a regional non-profit economic development organization that supports manufacturers in ways that are analogous to what BioEnterprise and NorTech do for their more specialized constituencies. MAGNET itself is part of the network of organizations that receives money from the Fund for Our Economic Future (along with funding from state, federal and other sources). BioEnterprise,

Too many metros are still looking for “the next” Bill Gates, Michael Dell or Mark Zuckerberg. But there is a growing appreciation for the power of networks, and we need look no farther than Northeast Ohio to see why.

Several studies have documented how innovations bubble up from the shop floor, as engineers learn not only about the products that they are developing but also about the limits of existing technology and the need for new processes, materials and machines. There are several examples of American companies sending production facilities overseas in search of cheap labor, only to see research and development capacity take root in the countries where production landed. For example, in the electronics sector, 90 percent of R&D now occurs in Asia, due in large part to the steady offshoring of manufacturing by American companies since the 1980s.

Manufacturing and innovation, once thought to be two entirely different aspects of the U.S. economy, have turned out to be closely intertwined. Production teams and invention teams need to collaborate with each other.

The Fund and several of its partners are creating a more specific collaboration to benefit small

NorTech, the Fund itself and other Fund grantees are all part of the planning and implementation team for PRISM.

Business networks are not a 21st-century invention. Steven Johnson, in his book *Where Good Ideas Come From*, traces them to the emergence of the market economy itself. But the conditions of 21st-century business — speed, relentless cycles of reinvention, ease of movement of capital and labor, and abundant but highly specialized and fragmented knowledge that is too much for most human brains to contain — make networks particularly important now. Northeast Ohio’s economic development actors deeply understand this topography of business because they organize themselves like the businesses they seek to bolster.

In strong networks, participation is relevant and rewarding. That can only happen when the network participants are themselves helping guide and set the agenda. People who run multimillion-dollar

organizations are not going to join a network to be bossed around. At the same time, though, they want to know that participating in the network is helping them make progress toward a shared goal. It's a very difficult balance to strike, and the Fund is still trying to get it right. Bagley, of NorTech, suggested that they are getting close. "The clarity of focus helps to engage networks," she said, but once there is a common goal and strategy, "everybody goes off and does [their part] opportunistically."

Too many metros are still looking for the next Bill Gates, Michael Dell or Mark Zuckerberg. But there is a growing appreciation for the power of networks, and we need look no farther than Northeast

Ohio to see why. These efforts to use networks to bring about a new economy — built on the foundations of the old economy — are aligned with powerful social, economic and cultural forces.

This feeling of alignment motivates people like Chris Thompson to go to all those meetings and bring all those donuts. His work and the work of the Fund, he said, reflect "the civic challenge of our time. We live in an era where power is diffuse and value is created through networks built on trust, not hierarchy. We're going to have to learn how to manage in a networked world, where you can't rely on a hero to save the day. That is the challenge and we are a test bed."



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