

Introduction

Improving economic competitiveness

A few years back, The Gallup Organization launched its “world poll,” designed to gather more than mere opinions. It set out to collect insight about what people all over the world are thinking *about*. When it released the results of the first poll in 2007, Gallup minced no words. “[W]e may have already found the single most searing, clarifying, helpful, world-altering fact,” it said. “At the very least, it needs to be considered in every policy, every law and every social initiative. ... What the whole world wants is a good job.”

In an age of instant and ever-expanding communications, unfettered capital flows and footloose talent, this puts enormous pressure on policymakers and political leaders. After all, if *you’re* not thinking constantly about how to improve economic competitiveness and job prospects within your borders, the leaders of the next state over certainly are — along with those in the next country over and the next continent over. And the people who lead companies, as well as the workforce whose skills and knowledge are becoming increasingly important in highly competitive markets, are paying close attention.

The ground under policymakers’ feet is shifting. Emerging from the recent recession will not be a return to the status quo or easing economic and competitive pressure. In fact, it will be quite the opposite. Ongoing shifts in the foundations of

economic life are displacing and reshuffling the traditional building blocks of economic competitiveness. The result is that whatever state economic development efforts looked like a few years ago, they won’t resemble what is needed a few years from now.

State leaders would do well to wonder what this means for them. For instance, companies’ need for a skilled, knowledgeable and innovative workforce has implications for state education policy. The ballooning importance of the digital infrastructure provides clear opportunities for high-tech growth strategies. A company’s ability to profit from knowledge flows is just as crucial as a state government’s ability to access ample knowledge infrastructure.

States that remain economically competitive will share several characteristics. First, urban economic development strategies will make cities attractive to firms and their workers. Second, state economic strategies will build on long-term sectoral strengths and devote the resources necessary to buttress universities, research institutions and other organizations that can underpin those sectors. Finally, they will adopt organizational changes that allow them to adapt to the changing marketplace as nimbly as their private sector counterparts.



The shift to an innovation economy

Redesigning state economic development for the new economic realities

Formidable as it remains, the recession is not the most difficult economic challenge confronting governors and state policymakers. They also face deeply rooted changes that have been gaining strength for decades — changes that are dramatically reshaping the global business environment, which many states have yet to reckon with.

Three basic forces are at work. The first is a long-term trend toward economic liberalization, which has removed barriers to the movement of ideas, capital, products and people. The second is the exponential improvement in performance of the basic infrastructure of technological capacity: bandwidth, digital storage and computing power. The third is the ever-expanding penetration of new technology throughout the business world and society as a whole — that is, both the adoption of innovative products and the changing practices and protocols that allow business to use the growing power of digital technology.²³ The confluence of these three forces has been dubbed “The Big Shift” (see figure 2-1).

The fundamental changes outlined in The Big Shift have ramped up the competitive pressure on American firms. The “topple rate” at which big companies lose their leadership positions has nearly doubled over the last 40 years.²⁴ The average lifetime

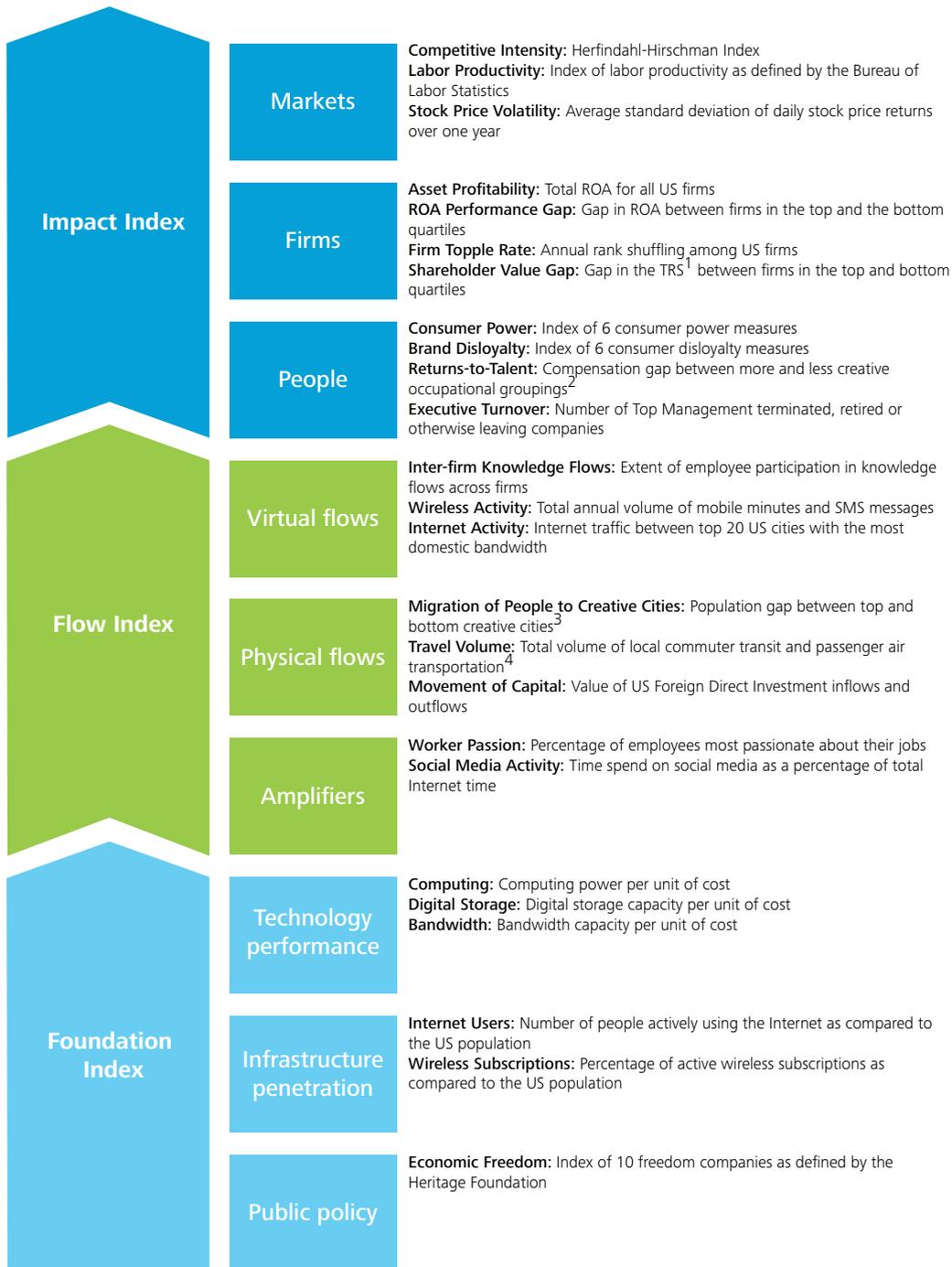
for companies on the S&P 500 has fallen dramatically. Perhaps most strikingly, U.S. companies’ return on assets has fallen to almost one-quarter of their 1965 level, even as labor productivity has improved.²⁵ “Given these long-term trends,” write John Hagel, John Seely Brown and Lang Davison, “we cannot reasonably expect to see a significant easing of performance pressure as the current economic downturn begins to dissipate — on the contrary, all long-term trends point to a continued erosion of performance.”²⁶

The way out depends on companies’ ability to transform the challenges presented by the changing competitive landscape into opportunities. Even while the initial wave of forces has proven exceedingly disruptive, it has also seeded a second wave that is reshaping the ingredients crucial to company performance. In other words, economic liberalization and the evolution of the digital infrastructure may put new pressures on businesses, but they also encourage the flows of knowledge, talent and capital that allow companies to innovate, boost productivity and create jobs. But first, businesses need to figure out how to turn these pressures into opportunities.

Where companies once gained competitive advantage through building and then safeguarding stocks of proprietary knowledge, they now survive by taking

2-1. The Big Shift Index

The Shift Index consists of 25 indicators within three indices that quantify the three waves of The Big Shift — the Foundation Index, Flow Index and Impact Index



1. TRS - Total Return to Shareholders
2. Creative Occupations and Cities are defined by Dr. Richard Florida, "The Rise of the Creative Class", 2004
3. Ibid
4. Measured by the Bureau of Transportation Services Index

To assemble the list of 25 shift index metrics, we carefully analyzed more than 70 potential metrics, using a process detailed in Exhibit 90 of the 2009 Shift Index

Source: Deloitte Center for the Edge



ACTION PLAN FOR RESHAPING STATE ECONOMIC DEVELOPMENT

What will pull firms toward success in the 21st century is their ability to find, attract and nurture talent, and to give workers at all levels — not just the most educated or skilled — the right environment in which to learn, innovate and solve problems.

advantage of other avenues. Knowledge flows; ideas for process-improvement conversations between people within and outside a company; and the problem-solving prowess of connected individuals with diverse experiences, perspectives and expertise are powerful tools for creating competitive advantage.

For businesses, success in today's changing economy hinges on three key capabilities: a) to position themselves to participate as fully as possible in knowledge flows; b) to learn from those flows and be able to scale what they learn; and c) to attract, retain, motivate and unleash people with the skills and talent that can help them thrive.

A reshaped state economic development strategy would use all the levers state government possesses to nurture these capabilities, helping companies position themselves to take advantage of knowledge flows and turning states and their cities and regions into places that draw the talent companies need. The following actions could form the core of this new approach:

Operate at the speed of business, not government

Soon after coming into office, Indiana Governor Mitch Daniels abolished the state's Department of Commerce and replaced it with a nonprofit called the Indiana Economic Development Corporation. "By being a nonprofit corporation, we're able to raise outside money," says Governor Daniels. "We hire real business people. We operate at the speed of business, not the speed of government. Employees told me of occasions when by the time they got a clearance to buy an airplane ticket to go somewhere, some other state had the business already."²⁷

Catalyze innovation

There are several ways state governments can help grow their capacity to innovate. To begin, a smart government will pay close attention to the market structure for information and communications technology services — the companies doing business, the degree of competition, the opportunities for a strategic nudge to spur innovation — and then use its role as a major customer for these services to spur innovation and competition where needed. It can identify and then eliminate barriers to entry for new service providers, offer incentives to companies that try to expand their knowledge networks and provide access to its information infrastructure where shared access makes sense.

Similarly, training programs to develop the information technology and Internet skills of entrepreneurs, business executives and the general population can stoke demand and help businesses understand how to take advantage of emerging innovations. Rhode Island’s Innovation

Providence Implementation Council (IPIC) includes leaders from the region’s business community, academia and hospitals, civic organizations, and state and local governments. IPIC’s charge is to boost the state’s knowledge economy. It does so by developing training and development opportunities to retain young talent and strengthening connections among entrepreneurs, universities, government and select grant recipients.

Build on strengths

Every city and state cannot be the biomedical capital. Each city and urban area is distinct, and the more state policies take account of their strengths — as opposed to forcing them to follow the herd — the stronger they will become as magnets both for businesses and the employees who will help them thrive.

Instead of going after whatever happens to be the hottest industry of the moment, states, cities and regions should map their existing assets and build upon those strengths. As Portland, Oregon-based

What works: BioBusiness Alliance of Minnesota

The BioBusiness Alliance of Minnesota produced Destination 2025, a 20-year strategic plan and roadmap for Minnesota in the six life science markets in which the state participates: medical devices, biologics and biopharmaceuticals, animal health, food, renewable energy and renewable materials. The process involved over 600 people from around the world who work in and with the industry and who are experts in their area of focus. One outcome was a roadmap that examined the overlap between the six industries and made a series of recommendations for the state to advance its position in the life science industry and beyond. Stakeholders then used the roadmap to align the recommendations with existing assets within their regions.

“Human and economic activity will cluster in areas where people expect to find jobs and opportunity, where innovation, ideas and freedom are welcomed, incubated and encouraged.”

~ *BACK FROM THE BRINK*

economist Joseph Cortright and graduate student Heike Meyer have written, “Contrary to common wisdom, high technology varies dramatically from place to place. Different metropolitan areas tend to specialize in certain technologies and have major concentrations of firms and employment in relatively few product categories. A region that is strong in one area, say medical devices, doesn’t necessarily have a competitive advantage in another area, like telecommunications, or semiconductors or software.”²⁸

The question at hand is a twofold one: “What do we have, and what can we do to strengthen those industries?” The Piedmont triad area of North Carolina looked at its furniture industry and surmised that it had a real future in the region and developed that base. Milwaukee 7, with its focus on the water industry, and the California Space Authority in Southern California have also done a commendable job building on their existing ecosystems.

Spur collaboration

States can also support research institutions and public-private collaborations that explore and stimulate opportunities for new businesses. Spurring collaboration between academia, industry and government is key to fostering innovation and developing the clusters that will drive economic growth. As the World Economic Forum’s *Global Information Technology Report 2009/10* noted, “The recent development history of some of the most networked economies in the world, be they Estonia, Israel, Korea, or Singapore, shows that the alliance between a farsighted government and an actively engaged private sector on the definition and implementation of a common [information and communication technologies] vision has been extremely powerful.”²⁹

What works: Georgia Research Alliance

Stung by losing its bid in the 1980s to host the headquarters of a cutting-edge semiconductor consortium, Georgia responded in 1990 by creating the Georgia Research Alliance (<http://www.gra.org>). Its goal was to bring business leaders, the state government and Georgia’s research universities together to find ways of using innovative research to fuel the state’s high-tech development. Funded by the state legislature, the GRA wooed a series of high-profile researchers to Georgia’s universities — often to the chagrin of universities in neighboring states — and helped those institutions invest in the infrastructure and technology needed to support high-end work. The GRA helped to establish more than 150 companies capable of commercializing the research it funded.

Recognize that metropolitan areas drive competitiveness

State legislatures are notorious for their urban-suburban-rural tussles over money and other state resources. These are political disputes that states simply cannot afford.

In the world's more developed regions, some three-quarters of the population already lives in urban areas, a figure that is projected to increase to 81 percent by 2030.³⁰ "Human and economic activity will cluster in areas where people expect to find jobs and opportunity, where innovation, ideas and freedom are welcomed, incubated and encouraged," writes Greg Pellegrino in *Back from the Brink*.³¹ Certainly that has been true in this country, where, as *BusinessWeek* noted at the height of the dot-com boom, "Today, big cities are developing into idea factories — tightly integrated combines that generate the information, the conversations, and the spontaneous innovations that are the lifeblood of a knowledge-based economy."³²

State policies, therefore, need to recognize that helping metropolitan regions resolve issues with infrastructure, traffic flow, provision of basic services, central-city public education and the like is not a matter of "the rest of the state subsidizing the city," but a crucial piece of the state's competitive posture in an economy where knowledge and talent pools are fundamental drivers.



Roadblocks to overcome

Legacy efforts

Every new gubernatorial administration must confront the legacy left by previous economic development efforts. There may be a plethora of public and quasi-public organizations, each focused on one small part of the picture, operating with no common direction. They may lack the connections or ability to catalyze strategic partnerships with the broad range of players (the private sector, community colleges, utilities and so on) that affect a state's competitive profile. Often, a state either lacks a clear economic development strategy or just focuses broadly on business retention and attraction without industry- or sector-specific approaches, defined metrics and measurable progress.

Funding

Efforts might also be hampered by vastly curtailed budgets or funding sources for economic development that were raided over the years to help the general fund. A state's regulatory environment may hinder competitiveness and increase business costs, and its infrastructure may need dramatic upgrades.

Boosting manufacturing competitiveness

Not your grandfather's manufacturing

We are not suggesting that the future of economic competitiveness lies solely with high-tech industries. Rather, a firm's ability to compete will rest, in part, on the extent to which it can use technology and knowledge networks and from them maintain an edge over its competitors, regardless of the sector it inhabits.

To understand this better, it's useful to look at one specific economic arena — manufacturing — and to consider how states can best help manufacturers thrive in this shifting economy. For most states, the competitiveness of its manufacturing sector is critical to its long-term economic prosperity and growth. It creates good jobs — not just within the sector but in financial services, infrastructure development and maintenance, customer support, logistics, information systems, health care, education and training, and real estate. A strong manufacturing sector also boosts a state's intellectual capital and penchant for innovation by underwriting research and development, pushing the technological envelope, and driving the growth in demand for highly skilled workers and scientists.

However, manufacturing has been one of the industries hardest hit by the recession. The United States has lost two million manufacturing jobs as a direct result of the recession. States that used to compete with one another for new factories and manufacturing jobs are now going head-to-head with countries all over the world. These countries

are creating aggressive tax and trade policies and negotiating trade agreements to position themselves to win in the new global economy.

Despite the recent troubles, a survey of the American public's opinions on the manufacturing industry and its future show a nation that is surprisingly bullish on the skills and abilities of our workforce in the face of global competition.³³ Moreover, Americans ranked manufacturing second in its importance to a strong national economy, behind only the energy industry, but ahead of technology, financial services, health care, communications and retail (see figure 2-2).

2-2. Ranking of industries by respondents as most important to maintain a strong national economy in the US

Industry	Rank
Energy	1
Manufacturing	2
Technology	3
Financial services	4
Health care	5
Communications	6
Retail	7

(Aggregate ranking of sectors by all respondents)

Source: 2010 annual index, Deloitte and the Manufacturing Institute.

“At the height of the global recession, 32 percent of surveyed companies reported moderate to serious skills shortages in the hiring pool.”

~ THE MANUFACTURING INSTITUTE

While bullish on U.S. manufacturing, Americans are very concerned about U.S. government policies and leadership in this area. Respondents singled out state and federal government leadership, tax rates on individuals and government business policies as their top three areas of concern (see figure 2-3).

With manufacturing playing such a vital role in a state’s economic health, state policymakers must take seriously their role in creating an environment in which manufacturing can thrive. Especially today, when the landscape of manufacturing dominance is shifting, synchronizing government policy with the investment decisions of manufacturing executives is critical for a state to remain competitive and create a positive cycle of prosperity.

Policymakers must look to the mid-term future of manufacturing competitiveness — as little as a five-year window — to enable a thoughtful dialogue between policymakers and business leaders. State governments that fail to understand the barriers

that prevent manufacturing investment may find themselves missing the window of opportunity to create a better business climate for investment.

ACTION PLAN FOR BOLSTERING STATE MANUFACTURING COMPETITIVENESS

For policymakers, the implication is clear: Take action before the proverbial train has left the station. An action-oriented blueprint for boosting manufacturing competitiveness would include these seven strategies:

Enhance talent pools

Talent, specifically talent that drives innovation, trumps all when it comes to competitiveness at manufacturing companies — well ahead of factors that have more traditionally been associated with competitive manufac-

2-3. Attributes behind U.S. competitiveness as ranked by survey respondents

Most important attributes to U.S. competitiveness	Attributes providing U.S. with biggest advantage	Attributes causing the most concern
Work ethic	Technology use & availability	State & federal leadership
Skilled workforce	Skilled workforce	Tax rates on individuals
Productivity	R & D capabilities	Government business policies

Source: Deloitte and The Manufacturing Institute

turing. Having a steady supply of highly skilled workers, scientists, researchers and engineers is seen as the top driver of manufacturing competitiveness. Having a capacity for innovation driven by a plentiful and talented workforce at all levels is what will ultimately differentiate the long-term winners in this race.

Create a low-cost economic environment

Cost still matters when it comes to where a company locates a manufacturing plant. “I can tell you definitively that it costs \$1 billion more

per factory for me to build, equip, and operate a semiconductor manufacturing facility in the United States,” says Intel CEO Paul Otellini.³⁴ According to Otellini, 90 percent of that additional cost of a \$4 billion factory is not labor; it’s the cost to comply with taxes and regulations that other nations don’t impose. States can increase competitiveness with tax policy, research grants and regulations that indirectly promote manufacturing and innovation.

What works: Edison Welding Institute in Ohio

The ability to join two materials together is crucial to manufacturing. Yet, as manufacturers strive to remain competitive, it’s difficult to invest resources in staying abreast of the latest technology — let alone obtain that technology for themselves. The Edison Welding Institute, a nonprofit corporation based in Columbus, Ohio, fills that gap.

It was founded in 1984, the result of a collaborative effort among Ohio State University, the Battelle Memorial Institute, England’s The Welding Institute, and then-Governor Dick Celeste, who established a program of “technology excellence centers” around Ohio, including one for research into welding techniques. With 150 employees, EWI works with some 350 companies to pursue innovations in materials joining, study and resolve process and production problems in specific factories, design manufacturing processes,

build prototypes at its own lab and then help clients make the transition to manufacturing and test new ideas. Funding comes from the State of Ohio, federal grants and its customer base.



There are 39 regional economies across the United States, according to the Council on Competitiveness

Connect the dots

Huge amounts of federal money for applied research and economic development flow through the states, but the funding is delivered through silos. Almost none of it is connected. To fix this, states need to create intersections between universities and institutes that deal with processes and research facilities for advanced computing and manufacturers. One way is to build greater access to talent and facilities. Modeling and simulation, for example, are an increasingly important part of high performance manufacturing, but 90 percent of small manufacturers cannot access this asset. Moreover, most are not trained to use these computational assets. Aligning postsecondary education and connecting small manufacturers to high-performance computing constitutes one powerful strategy for connecting the dots.

Boost manufacturing innovation networks

The old thinking about how manufacturing works — that it relies on linear, one-step-after-another supply chains and “R & D pipelines” — is outmoded.³⁵ Networks of parts and materials suppliers, sub-assembly plants, design and logistics suppliers, financial advisers and the like allow participants to learn from one another and to innovate faster. The more robust the network, the better its members can reinforce one another. Public policy related to workforce development and training, financial incentives, public services aimed at small manufacturers and cross-state coopera-

tion all need to take into account the networks that a given industry or cluster relies upon.

Build a virtual “one-stop-shop” shared services system

Linking existing manufacturing innovation networks to premiere shared services providers and networks — such as state workforce development organizations, economic development leaders, and management consultancy groups such as the various state manufacturing extension partnerships (MEPs) — will enhance the ability of manufacturers to promote growth and strengthen a state’s economy. Start by piloting small and focused programs. These can be used as a stepping stone for flexible and sustainable programs.

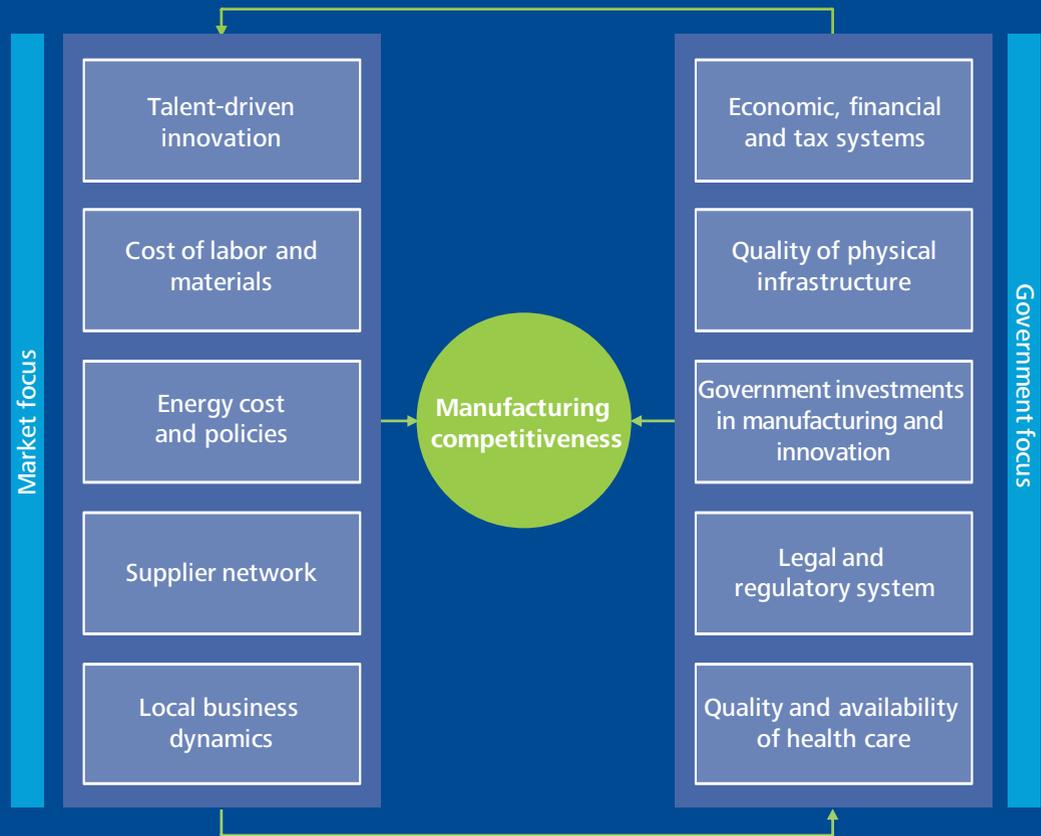
Engage regionally

States should explore a regional approach to economic development around a key emerging industry. For example, linking Great Lakes states together could create a regional center for clean energy production. Regional engagement requires moving from competition to collaboration with neighboring states and then creating a connected system of manufacturers, educational institutions and training. The Transformative Regional Engagement Network, for example, connects universities, government, businesses and nonprofit organizations in efforts to innovate around key industries on a regional basis.

Drivers of manufacturing competitiveness

In 2009, Deloitte and the Council on Competitiveness gathered data from more than 400 CEOs and senior manufacturing business unit leaders worldwide.³⁶ The manufacturers identified the ten most important drivers of competition. All ten drivers reflect the critical interplay between market and government forces (see figure 2-4).

2-4. Drivers of manufacturing competitiveness



Source: Deloitte and the Council on Competitiveness

The drivers were also ranked in terms of importance by the manufacturing executives who participated in the study (see figure 2-5). Overall, the classic factors of production — labor, materials and energy — constitute three of the four most important drivers of manufacturing competitiveness, as identified by the U.S. and Canadian senior manufacturing leaders who participated in this study. These are all primarily driven by market forces, even though they can be greatly influenced by government policy.

While this result should not be surprising, it is crucial to note the qualitative difference between the classic view of production and these findings. Namely, how the availability of talented people — scientists, researchers, engineers and production workers — now heavily drives manufacturing innovation and influences manufacturing's overall competitiveness.

Align educational and career pathways in postsecondary education

“Education leaders should be aligning educational pathways in degree programs to portable, industry-recognized skills credentials, creating more ‘on and off’ ramps,” says Emily Stover DeRocco, president of The Manufacturing Institute. This, in turn, will help close the gap between the high-tech skills that manufacturers need and those that recent graduates have upon entering the workforce.

The Clemson University International Center for Automotive Research (ICAR) in Greenville, South Carolina forms a bridge between academic research and practical applications in the automotive industry. It connects university researchers with research by companies involved in automotives, so all the testing

can be done in one place. BMW and the university worked together to develop the curriculum. BMW, along with Michelin, IBM and Microsoft collaborated on an information technology research center.

Over the years, other firms have set up shop at the Center. Proterra, a company that builds drive and energy storage systems for buses and other heavy vehicles, is building a new R&D and manufacturing facility there.

The research center collaborates with researchers from the other parts of Clemson University, such as those with expertise in textiles and advanced materials. Building off ICAR’s presence, Clemson also recently decided to create a graduate level department of automotive engineering.

2-5. Drivers relative importance to manufacturing competitiveness

USA and Canada	
Drivers	Driver score (10=High; 1=Low)
Talent-driven innovation	8.72
Cost of labor and materials	7.81
Economic, financial and tax systems	7.50
Energy cost and policies	6.79
Legal and regulatory system	6.68
Quality of physical infrastructure	6.43
Government investments in manufacturing and innovation	6.18
Supplier network	5.65
Local business dynamics	3.61
Quality and availability of health care	1.15

Source: Deloitte and the Council on Competitiveness



Interview with

Deborah Wince-Smith

CEO, Council on Competitiveness

Q...We lost two million manufacturing jobs during this recession. Are they ever coming back?

It is naïve to think we will reclaim these jobs. However, if we do things right, we're going to develop, retain and grow higher-value manufacturing jobs. We lost a lot of manufacturing jobs to automation, the rise of Asia, the rise of the emerging economies and to the commoditization of many of these products. A good example is the PC where we still play a role in design and a lot of the higher value functions, but the actual fabrication has migrated to lower cost countries.

Q...What would be an example of a higher value manufacturing job that we might grow?

Manufacturing has a very deep embedded use of computational capabilities and very advanced automation. Having a skill set that enables workers on the factory floor to understand and operate highly complex automation is one area where the game has changed. Add to that the use of modeling and simulation for design work. In the future, we'll be moving to self-assembly of materials. That will demand a whole different skill set and capability than existed in the past.

Q...Certainly not your grandfather's manufacturing. Won't all the automation mean fewer jobs for people?

We are going to have to move away from the more classic early- to mid-20th century assembly line type of jobs. The real challenge here is not that there aren't going to be enough jobs, it's that the jobs will change and be different. And that's where our skill base comes in.

Q...What can states do to be more economically competitive?

We have a very untenable, unsustainable federal and state regulatory environment for a 21st century innovation economy. Let's just look through the energy lens. If an entity wants to move on some of the new clean energy technologies — whether it's wind, or solar, or let alone try to move forward on nuclear energy — the permitting, the regulatory hurdles you have to go through are punitive not just in cost but in time. There's just no rationality on the regulatory front.

Then, there is the issue of the role of states versus the federal government. An example is product liability laws where each state has its own system, its own interpretation. You see class action suits that are just the bane of existence for U.S. companies versus their competitors. Trial lawyers take suits to specific jurisdictions where there is a better opportunity to extract awards for damages. This is a tremendous burden, not just on cost but also on corporate decision making about where high-value investments are made. A conservative number is that the United States spends more than 2 percent of our GDP on torts. The closest number to ours is in the UK, where it is .08 percent. There's no other country in the world that has this tremendous burden placed on it from product liability and tort laws.

Q..What other recommendations would you make to a new governor about competitiveness?

The first thing to do is identify what assets you have in your state. Do you have world-class universities? Do you have a network of community colleges? Do you have the capacity now and in the future to develop the human capital, the skilled workforce that's needed in a rapidly changing economy and that will make your state an attractive place to do business? And if you don't, what do you need to do to develop that capacity?

Second, you have to look at the state's overall cost structure and business environment. The old model that we would compete on wages within our own country, where manufacturing would move out of the northeast and go down into the south, that model has played itself out. That's not the way to attract investment and grow economic activity. States now compete against the whole world for investment and business activity. Companies can turn on a dime and decide they're going to move operations and people to places that are closer to their customers and where the overall business environment is more favorable.

If you have a total 40 percent cost penalty to manufacture here versus China, then a company's boards of directors will say go to China.

Q..Do regional approaches to economic development hold any promise?

Let's look at the north Midwest, the heartland of our industrial might: the rubber industry, the auto industry, the production slicing of all of those capabilities that existed. And many still do in Ohio, Michigan, Indiana and Illinois. Our country is poised to be a huge player in clean energy and to revitalize our auto industry if those states come together as a region and integrate their tremendous industrial capabilities. If the governors in these states pulled together and brought all the private sector players together, they could do something very powerful in the region.

Q..What about small manufacturers? How can they be more competitive on the world stage, and what is the role of the states in enabling this?

How you knit together the small, sometimes fragile, but critical supplier base to larger business enterprises is very important. First, states can inventory the regulations that are really hurting their small manufacturers, and then outline how to alleviate the burden. States could then go forward as a group to Congress with a reform package.

Second, high performance computing is really changing the game for this country. We need to get the power of supercomputing into the hands of the supplier base of small manufacturers in this country. If we can do this, it will be revolutionary.