

# Solving the Reshoring Dilemma

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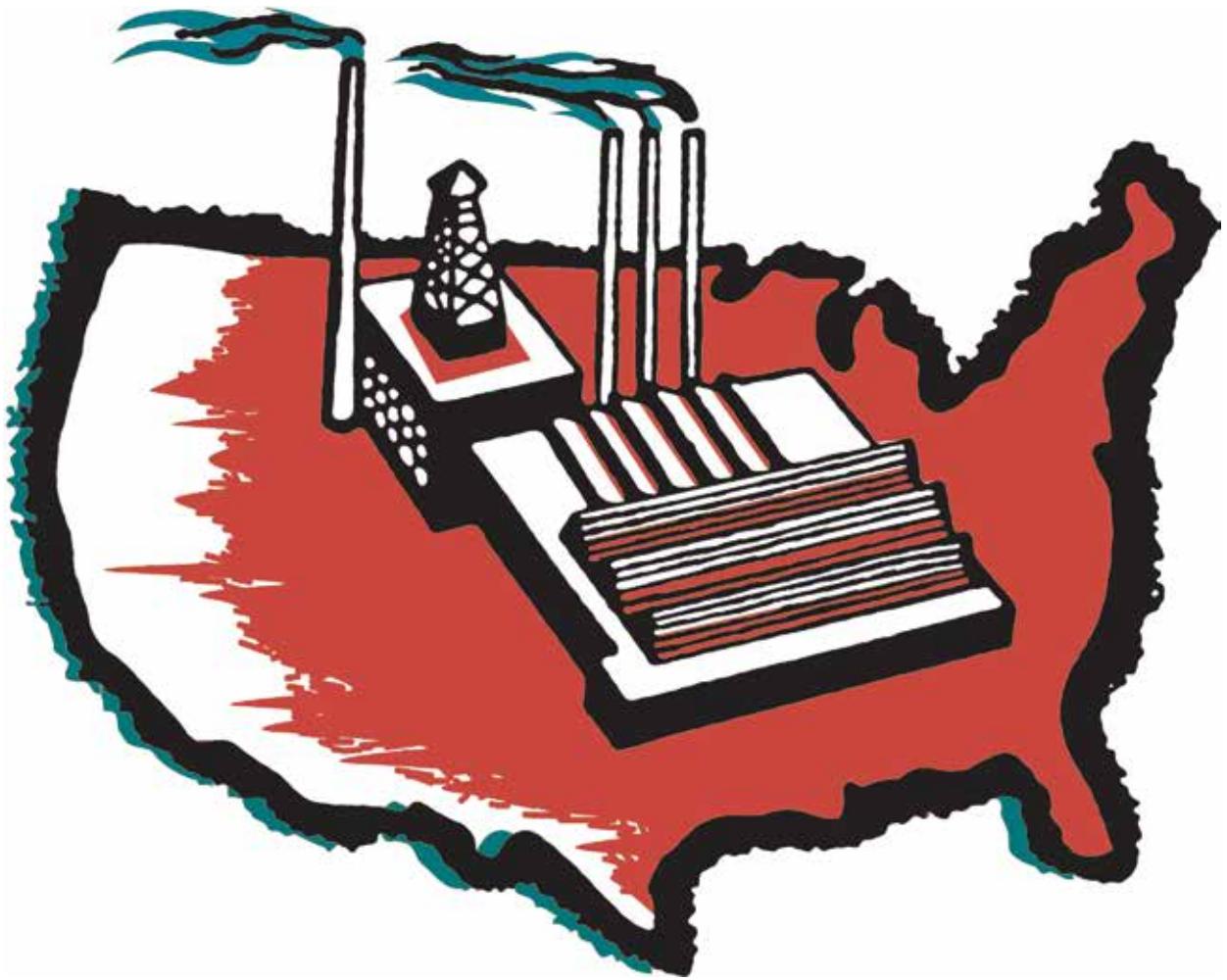
**A number of events have tipped the balance in favor of domestic manufacturing, leading to a growing reshoring movement in the U.S. Still, bringing manufacturing back isn't for everyone. Here are some of the tools and factors you should consider to assess whether reshoring is right for your company.**

It's not news that manufacturing in the U.S. has become more attractive in the past few years. And, even though there is no torrent of renewed manufacturing activity moving the needle just yet, it's clear that the reshoring movement is growing. At the very least, it should make U.S. companies think twice about where they will manufacture their products in the next few years. But how do you figure out whether to jump on the reshoring bandwagon or sit this one out? There are a few tools and tests that can help you assess whether reshoring is the right choice. And if the answer is "Yes," making sure your assumptions are realistic and you are factoring in all the moving pieces into your analysis is crucial to avoid any nasty surprises.

A number of macroeconomic factors have tipped the balance in favor of domestic manufacturing, at least for some industry sectors. Among them are the appreciation of China's currency versus western currencies, China's labor rate inflation, increased concerns about supply interruption, lower energy costs in the United States as a result of shale gas exploration, and a general push from federal and state governments to reduce the costs and administrative barriers of bringing manufacturing back.

Companies are responding: A growing number of reshoring cases, ranging from heavy machinery and appliances to chemicals, have been covered by the media in the past few months. Several recent studies have added even more fuel to the fire by identifying a number of industry sectors that, based on macroeconomic factors and industry cost models, should consider reshoring their operations. The usual suspects include computers and electronics, appliances and electrical equipment, primary metals, machinery, furniture, plastics and rubber, paper, and fabricated metals.

A list of recent reshoring cases published by The Reshoring Initiative\* shows many of these industries indeed at the forefront. If you are active in these industries, reshoring should be on your radar screen. There are, however, cases from less straightforward industries, such as that of an Indian textile



### Recent Reshoring Cases

Industry	Number of cases	Percentage
Electrical Equipment, Appliance, and Component Manufacturing	33	22%
Transportation Equipment Manufacturing	24	16%
Computer and Electronic Product Manufacturing	17	11%
Plastics and Rubber Products Manufacturing	13	8%
Fabricated Metal Product Manufacturing	10	7%
Machinery Manufacturing	10	7%
Apparel Manufacturing	7	5%
Furniture and Related Product Manufacturing	7	5%
Chemical Manufacturing	5	3%
Food Manufacturing	4	3%
Other Manufacturing	12	8%
Other Non-Manufacturing	10	7%

Source: A.T. Kearney

company that recently set up manufacturing operations in the U.S. The move placed the company closer to raw materials (cotton, for example) and also helped position it to take advantage of Wal-Mart's promise to source an extra \$50 billion of domestic products over the next

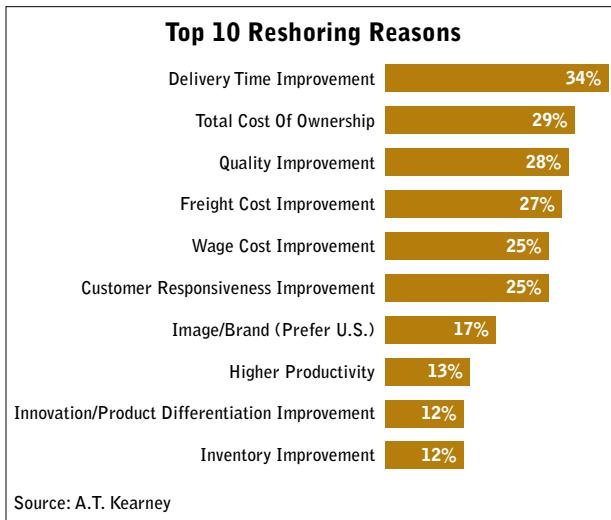
decade. Of all the industries, textiles would be one of the last you would expect to return to the U.S. if only the macroeconomic picture was considered. On the other end of the spectrum, several companies in slam-dunk industries aren't planning on returning anytime soon. So only taking into account the macroeconomic factors does not provide the complete answer.

### What Drives Companies to Reshore?

What's more interesting is that when asked why they decided to reshore their operations, the companies on the list cite a variety of reasons. (See chart on following page.)

Several of these reasons are linked to being closer to the customer. It's important to remember, however, that the location of your suppliers is a crucial factor in realizing these benefits. Unfortunately, most domestic supplier networks have evaporated or followed their customers overseas. Because there's typically a delay of a few years between companies moving and their supply base following them, companies that return their own manufacturing operations may still have to rely on suppliers from overseas, at least until the economics for the supplier also drive them to return to the U.S.

This would of course diminish the proximity-related



benefits of reshoring because the end-to-end supply chain could still be as long as before and therefore prone to disruptions. As a result, manufacturers may now have to stock up on supplies or parts instead of on finished goods, as was the case when they had their own manufacturing operations overseas. This would mean less money tied up in inventory (parts have less value than finished goods), but it would still require approximately the same amount of storage space, albeit more concentrated near plants than finished goods inventory, which is typically stored closer to points of sale.

As suppliers start to move back, several supply chain and logistics changes would take place that would affect cost and service. You would see much less container traffic to the West Coast ports and therefore less need for intermodal transport to deliver those containers from West to East. Because it appears the non-union states in the South may be attract-

ing much of the returning manufacturing operations, you could anticipate a shift in goods flow to more of a south-to-north pattern, which has already started to emerge due to the rise of manufacturing in Mexico. This will require logistics services companies to adapt their networks and fleets, and the availability of warehousing space and transportation will depend on the pace with which that happens. So the expected cost, inventory, and even service benefits related to becoming “local” again are far from guaranteed.

Similarly, the cost-related reasons are not that straightforward, as many of the forces that drive the reshoring cost equation are very much still in flux, such as the labor cost gap and the energy cost differential between the U.S. and Asia. It’s true that in China labor

costs are projected to rise six-fold from 2004 to 2016 (The Economist Intelligence Unit wages time series). However, labor costs in the U.S. are also creeping up. Manufacturing labor is becoming scarce due to a higher retirement rate than graduation rate and an overall lack of skilled workers. The past years’ wage inflation of nearly 2 percent is forecasted to continue (*Reuters*, “U.S. labor costs rise, point to more steady inflation”).

In addition to labor costs, the positive outlook for U.S. energy also makes the case for reshoring look attractive. The relative success of American fracking initiatives is expected to keep U.S. electricity costs 40 percent to 70 percent lower than in Europe or Japan. However, the longevity of the many fracking wells is in question. According to DrillingInfo, an international oil and gas intelligence company that tracks the performance of U.S. wells, the production of wells bored into so-called tight oil formations has typically declined by 60 to 70 percent in the first year alone. And the U.S. isn’t the only country that has shale gas; other regions of the world are also sitting on sizeable reserves. China has even greater reserves than the U.S., but they are more difficult to access (*The New American*, “United States to Become the World’s Primary Energy Producer in Four Years”). However, once these reserves are successfully tapped, China’s yearly electricity price growth, which currently sits around 8 percent, will slow down and prices may even decrease (Enerdata China Prices time series). It is therefore unclear if the U.S. will be able to rely on shale gas as a sustainable energy cost advantage.

Finally, the impact of brand improvement is predicated on the fact that the “Made in America” designation is making a comeback. But what remains to be determined is the size of the price premium that consumers are willing to pay; this has largely been untested. Companies that make sensitive goods, such as baby food, can claim that by being U.S.-based, they are safer and better regulated than ever and that justifies a higher price. But as many companies found out as they signed on to the green movement, there’s only so much that consumers are willing to spend on goods that match their values and world views. Especially in more commoditized industries, the quality and brand proposition of “Made in America” does not necessarily have the same uplifting effect on price. Similarly, in highly competitive industries, the price premium diminishes as well.

After looking at the reasons that drive companies to reshore, it’s not clear how robust the business case is. As a result, the decision to reshore should not be taken lightly.

### Better Safe...

After studying the possibilities and determining if reshoring is right for your company, develop an initial business



case (see Exhibit 1). However, rather than diving into a location search immediately, it's important to answer three questions, in the following order:

1. Is my reshoring decision future-proof?
2. Is my company ready to reshore?
3. Where is the best reshoring location?

**Is My Reshoring Decision Future-proof?**

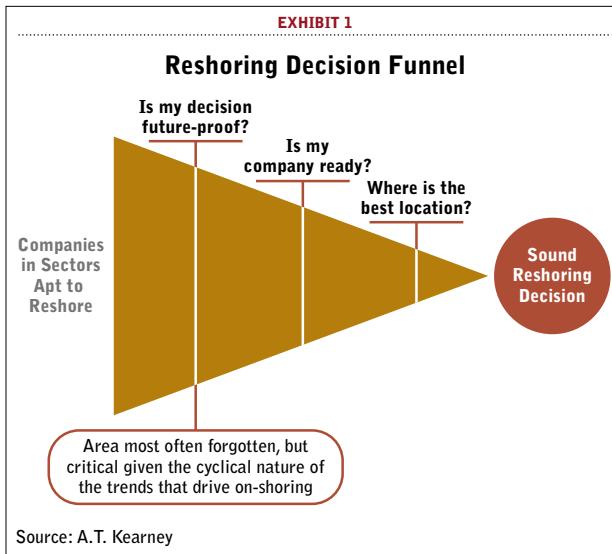
When considering whether reshoring is right for your company, it's important to remember that the answer isn't a simple yes or no, but rather a more qualified answer, such as: "Yes, but only under conditions X and Y."

Understanding these conditions requires thinking through potential scenarios (see Exhibit 2). The tried and tested methods of scenario planning can help you find the right balance of testing for operational efficiency and robustness by determining the potential impact of

can drive change in your business to the extent that it could impact your reshoring decision. The list of trends or business drivers obviously depends on the business environment that your company competes in but, regardless of industry, these exercises usually result in a healthy list of 10 to 15 factors that could affect the reshoring dilemma.

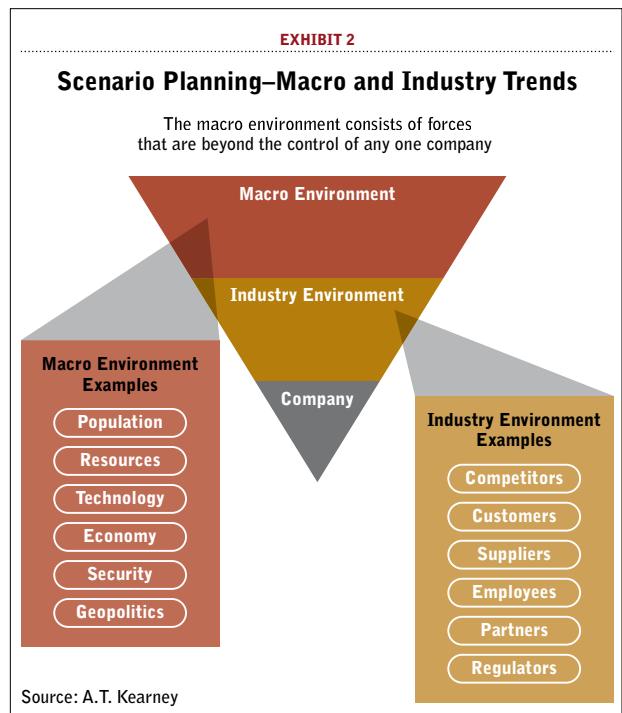
In the somewhat simplified and more practical approach that we would recommend to find the right reshoring answer, the second step involves selecting the top two drivers that could shape a company's performance and articulate the polarized outcomes for these drivers. For example, if energy costs are indeed one of the top two variables that will affect the reshoring decision for your company or industry, the two polarized outcomes could be "Energy Costs Stay Low" within the chosen timeline or "Energy Costs Revert to Pre-Shale Gas Levels." Once the two ends of the spectrum are articulated for each of the top drivers, a 2 x 2 grid of plausible and relevant futures, or scenarios, can be created.

Once the four scenarios are laid out, the reshoring evaluation team needs to determine the expected probability for each future scenario relative to the others and figure out how the business case to reshore is affected by each scenario. This approach provides a stress test by comparing the results and developing a transparent analysis that indicates whether the decision to reshore is future-proof. The reshoring evaluation team can then easily share its findings to stakeholders, refine as necessary, and move on to the next step.



macroeconomic and industry trends on different reshoring options in an unbiased way. The process can help test alternative future scenarios, such as energy cost differential and supplier network developments, and include them during the development of the reshoring solution to ensure that your company has the right balance of steady state efficiency and future-proof robustness. It can also help identify potential areas of weakness and the risk mitigation plans to overcome them.

In a typical scenario planning exercise, alternative futures or scenarios are developed by generating interactions between the macroeconomic environment and the industry environment. The first step involves determining the timeline that you need to consider to make sure the cost and capital related to reshoring are adequately paid back. Given that timeline, you then need to determine the set of macroeconomic and industry trends that



## Is My Company Ready to Reshore?

While the macroeconomic math can provide directional confirmation that the environment is ripe for you to consider reshoring, several internal factors, specific to each company, will have to be further investigated before announcing any strategic reshoring move publicly.

For example, the fundamental macroeconomic drivers of the chemical sector—high energy consumption, proximity to the supply base, significant domestic demand, low level of manual labor needs—create a good high-level business case and probably prompt many companies in this space to consider reshoring to the U.S. However, the actual attractiveness of setting up a new manufacturing operation stateside can vary significantly from company to company.

For example, available capacity is one of the more important factors to consider when assessing reshoring attractiveness as it can provide multiple economies of scale and scope while accelerating the operation's transition and learning curve. So, if a company determines that they can make enough existing capacity available—by adding shifts or by restarting a mothballed operation—to meet the needs of its business, they can avoid the significant capital investment that's required to build new operations. However, even though the short-term savings and benefits that reshoring to existing sites provides are substantial, companies could be missing out on long-term savings or advantages that other manufacturing-hungry destinations and their governments may offer.

When locations with free capacity are available, however, the (psychological) pull to reshore into those locations is usually pretty strong. Our research of companies that have reshored found that 74 percent of companies reshored to existing locations. These companies mentioned existing capacity, supply chain ecosystem synergies, and favorable labor relations as their top considerations.

Companies that believe they may benefit from reshoring but don't have available capacity or optimal locations in the U.S. need to make a key decision about whether to own or outsource the reshored operation and all its transition needs. This "make or buy" decision should obviously fit into the broader business and manufacturing strategy and should consider both internal and external aspects, such as a company's ability to run the operation in a cost-effective way, and the competitive landscape and evolving ecosystem around it. Other factors that may impact the best ownership scenario for the reshored operation include



intellectual property concerns, need for direct control over the operation, total volume, and redundancy considerations.

Once availability of internal capacity or the right ownership model for new capacity is established, different internal capabilities must be assessed and, if needed, the cost associated with any required improvements should be included in the reshoring business case. Creating an objective view of your capabilities, acknowledging any systemic flaws, and working ahead to fix them (or ignore them) could mean the difference between a successful and a failed reshoring effort. Readiness factors must be weighed and evaluated rigorously in order to determine if reshoring is the right decision for the company. These factors include practical considerations that will also play a role in the successful execution of the reshoring effort, such as a company's capability in the area of technical expertise, experience in building greenfield sites and in ramping-up the new reshored operation, and experience in managing large projects effectively. Examples of reshoring readiness factors and typical upgrade decisions as used by some of our clients are shown in the table on the next page.

Skills availability, in particular, has become an area of concern as long-term demographic trends continue to play out. As a result of years of widespread offshoring, the skilled trades—such as electricians, advanced machinery operators, and plumbers—have become the most in-demand segment of the U.S. workforce. Across industries, more than three out of four manufacturers reported they have a need to fill certain skill gaps over the next 12 to 24 months (*The Global Manufacturer*, "The Critical Shortage Facing U.S. Manufacturers"). Furthermore, skilled tradesmen are much older than the average workforce—53 percent are 45+ compared to 44 percent in the overall workforce—and many are nearing retirement. In particular, more than 25 percent of electricians and electrical engineers, extruding and drawing machine setters, stationary engineers and boiler operators, machinery maintenance workers, and computer-controlled machine toolers are already 55+ (*Forbes*, "America's Skilled Trades Dilemma: Shortages Loom as Most-In-Demand Group of Workers Ages"). To make the perfect storm complete, young Americans have gradually moved away from manufacturing and STEM-type classes due to the perceived lack of opportunity, and community colleges, technical schools, and apprenticeship

**Reshoring Readiness Factors**

Capability	Description	Decision
Skills Availability	Degree of functional expertise of current workforce	If capability not at par, consider relocation of experts or local acquisition of capability
Asset Health and Performance	Age and health of machinery, OEE performance	If not in good health or performance, include capability enhancement in business case
Knowledge Transfer	Existing processes and infrastructure to transfer knowledge and experts	If process or infrastructure not in place, include capability enhancement and ramp-up in business case
Project Management	Internal capability to run high stakes projects effectively	If capability not up to task, include capability enhancement or external support in business case

Source: A.T. Kearney

the key decision drivers and some of the potential pain points a company may face during implementation, and provide an understanding of where the reshoring business case stands. As a result, the evaluation will deliver sufficient confirmation to go ahead with the strategic decision to reshore manufacturing to the U.S. If the evaluation is positive and a

programs have followed suit and cut back on those programs. Even if we started today with seriously rebuilding a manufacturing education curriculum, it would take at least a decade for the effects to show. It's not just that the students aren't there; the teachers have left, too, either to retirement or to more lucrative industries. As a result, the skills availability problem will only grow more acute over time.

Not being able to find skilled resources that could be plugged in immediately may not be that big of a deal—if solid training programs were available. Unfortunately, training was often a casualty during down times as companies looked to cut costs. A building block that's crucial to any effort to teach freshly minted graduates how to function in a manufacturing environment is standard operating procedures (SOPs). SOPs are in place at almost all manufacturing plants, but they're most likely outdated as they relate to operations that were sent overseas. Operating guidelines and procedures that are often 15 years out of date will not help a person straight out of school get up to speed quickly, but given the state of the workforce, SOPs are a crucial piece to solving the reshoring puzzle. As older generations who have a wealth of experience and knowledge retire, it's especially important that SOPs are documented as it will help educate new employees. Recreating SOPs (or keeping them up-to-date), using apprenticeship models to orient new hires, or having new employees shadow others on the job are all potential ways to deal with the skill shortage, but they all come at a cost that needs to be factored into the reshoring business case. A company must therefore anticipate the skills shortage by taking an honest assessment of its workforce readiness and the potential fixes (such as training and SOPs) and developing plans to leverage its existing workforce to the maximum extent possible.

For some reshoring readiness factors, the evaluation may be largely qualitative. However, it will help identify

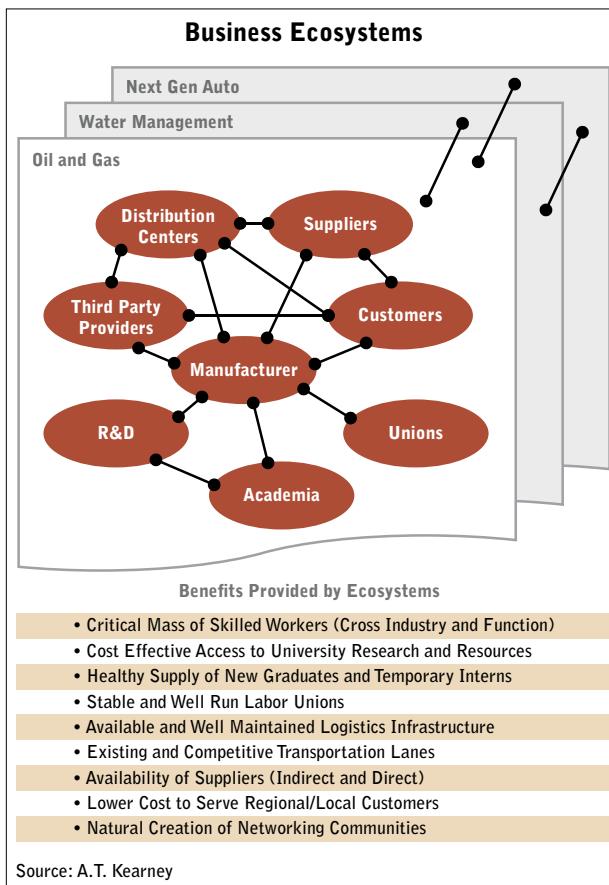
new location is required, the next step is to find the best reshoring location.

**What is the Best Reshoring Location?**

A thorough location selection exercise must be conducted, including an evaluation of quantitative cost measures and qualitative capability assessments. The evaluation of these location selection factors includes defining the right factors, setting a specific weight to each factor, and rating the performance of each factor for each of the selected locations (cities or states). This is commonly conducted by a multifunctional committee in order to bring different points of view while maintaining the transparency and objectivity of the exercise. Examples of location selection factors used by some of our clients are shown on the following page.

The location selection factors mentioned above provide a good template to compare and shortlist potential reshoring locations. As previously discussed, labor availability is an operating risk that companies should be particularly sensitive to. In fact, our research of companies that have reshored found that 26 percent of companies that moved to new locations picked those locations based primarily on advantaged skilled labor, supply chain ecosystem synergies, and proximity to customers.

Skilled labor and customer proximity are obvious in that equation. However, factors such as the economies of scope and network externalities that existing business ecosystems provide are often hard to measure independently. What is the value of established universities or trade schools that provide research and new talent? What is the value that established supply chains of different industry sectors can provide to your company? What is the value an established and thriving community can provide to your employees? As it turns out, rich and diverse business ecosystems can provide positive linkages within and across industry sectors at all levels of an organization (see Figure 3). Business ecosys-



tems are especially valuable for companies considering a greenfield reshoring operation as they could provide a shortcut to build capabilities while lowering startup and ongoing costs. Indeed, they help address the shortage of labor by providing a critical mass of workers for a variety of key needs. Nearby universities can also provide high-potential, local labor that comes without the often sizeable relocation fees.

Choosing the reshoring location is one of the most critical decisions, not only for the reshoring company but also for the potential destination locations. State economic development programs have acknowledged the reshoring trend and the economic benefits that come with it, and are actively benchmarking and improving their offerings to attract operations that are being reshored. A best practice in determining the right location to reshore is to understand the perspective of the potential host locations by engaging and collaborating with them to find the best reshoring scenario for both sides. It may be useful to know some of the key considerations that host destinations take into account as they determine how to “sweeten the pie” during reshoring negotiations:

- Is this company in a strategic sector for our state?
- Does this company have critical mass to create an economic impact immediately? In the future?
- Does this company have a sound business plan?
- Does this company already have an operation in our state?
  - Can this company leverage the infrastructure investments we’ve made in our state?
  - Can this company leverage the workforce training programs we’ve set up in our state?
  - Would this company operate within the boundaries of current regulation?

During this collaboration it’s important to understand where your company ranks on a state’s attractiveness index and also be transparent in what your key decision drivers will be in order to find the sweet spot for both partners. Also, when defining the right reshoring location, it’s important to keep in mind that what is right today may not be right tomorrow. Using the scenarios defined as part of the exercise to determine whether your reshoring decision is future-proof (see above) and looking at the potential locations through the lens of each of these scenarios is a good practice to ensure that the reshoring location decision holds in the future.

### Not Straightforward

The equation to determine whether reshoring is right for you, both now and in the foreseeable future, is probably a bit more complicated than you had envisioned. But that’s not necessarily a bad thing, as the process may help you avoid making decisions that you could live to regret. Multiple pitfalls and headwinds can negatively affect the timing, effort required, and even the business case at the root of your reshoring project. To do reshoring the right way, companies must understand the underlying conditions that drive the attractiveness of reshoring for their company. Knowing that your company’s overseas operations are good candidates for reshoring, even under multiple future scenarios, is only half the task. Testing your readiness and deciding who should own the operation and where the best reshoring location should be is equally important. Only by going through a rigorous analysis and process will companies know if reshoring is the right decision for them, both now and in the future. ☞☞

**\*Editor’s Note:** *The Reshoring Initiative is an industry-led effort to bring manufacturing jobs back to the United States. The initiative works with U.S. manufacturers to help them recognize their profit potential as well as the critical role they play in strengthening the economy by utilizing local sourcing and production. Among the tools and resources available from the initiative are a Total Cost Of Ownership estimator. For more information on this program, visit [www.reshorenow.org](http://www.reshorenow.org).*