

Highlights from the 2016 Global Manufacturing Competitiveness Index

China and the United States (US) jockey for top honors while Germany holds firm

- **China is the most competitive manufacturing nation...for now:** Consistent with the previous 2010 and 2013 Global Manufacturing Competitiveness Index studies, China is again ranked as the most competitive manufacturing nation in 2016, but is expected to slip to second position as global executives provide their perspective on how the next five years will play out (*Figure 1, page 5*).
- **The United States is expected to take over the number one position from China by the end of the decade while Germany holds firm at number three:** The United States continues to improve its ranking from 4th in 2010 to 3rd in 2013 to 2nd in this year's study. Moreover, executives expect the United States to assume the top position before the end of the decade while Germany holds strong and steady at the number three position now through the end of the decade (*Figure 1, page 5*).

Shifting dynamics among global manufacturing nations

- **CEOs say advanced manufacturing technologies are key to unlocking future competitiveness:** As the digital and physical worlds converge within manufacturing, executives indicate the path to manufacturing competitiveness is through advanced technologies, ranking predictive analytics, Internet-of-Things (IoT), both smart products and smart factories via Industry 4.0, as well as advanced materials as critical to future competitiveness (*Table 2, page 7*).
- **Shift to higher value, advanced manufacturing tilts the advantage to developed nations in the future:** As the manufacturing industry increasingly applies more advanced and sophisticated product and process technologies and materials, traditional manufacturing powerhouses of the 20th century (i.e. the United States, Germany, Japan, and the United Kingdom) are back toward the very top of the 10 most competitive nations in 2016. These nations which invested in advanced manufacturing technologies, are projected to remain in top 10 until the end of the decade. Innovation, talent, and ecosystems play a key role in their renewed strength (*Figure 1, page 5*).
- **Regional clusters of strength emerge:** Out of the top 10 manufacturing competitive nations, two regions, North America and Asia Pacific dominate the competitive landscape. All three North American countries are in the top 10 today and are expected to remain in the top 10 ranking five years from now. As many as five Asia Pacific nations (China, Japan, South Korea, Taiwan, and India) are expected to factor in the top 10 by 2020, leaving only two spots remaining for Germany and the United Kingdom to represent Europe in the top 10 (*Figure 3, page 9*).

- **BRIC breaks down:** Of the BRIC countries (Brazil, Russia, India, and China), only China is viewed by executives as a top 10 manufacturing nation in 2016. The other three BRIC nations have experienced a significant decline in their rankings over the last few years. Among the three, Brazil has had the steepest fall, ranking 29th in 2016 compared to 8th and 5th in 2013 and 2010, respectively. Similarly, Russia slumped further down the list to 32nd in 2016 from 28th in 2013 and 20th in 2010. On the other hand, hope still remains for India's rank position to improve from 11th in 2016 to the number five spot by 2020.
- **The rise of the "Mighty Five":** The five Asia Pacific nations of Malaysia, India, Thailand, Indonesia, and Vietnam (MITI-V aka the "Mighty Five") are expected to pierce the top 15 nations on manufacturing competitiveness over the next five years. These nations could represent a "New China" in terms of low cost labor, agile manufacturing capabilities, favorable demographic profiles, market and economic growth, with their competitiveness ranking rising in the next five years as China continues to shift its focus towards a higher value, advanced technology manufacturing paradigm (*Table 4, page 15*).

Top drivers of manufacturing competitiveness

- **Talent remains number one:** Consistent with the 2010 and 2013 Global Manufacturing Competitiveness Index studies, manufacturers continue to rank talent as the most critical driver of global manufacturing competitiveness (*Figure 6, page 17*).
- **Cost competitiveness (number two), productivity (number three), and supplier network (number four) are also key:** In an era of sluggish economic growth, containing costs and increasing productivity to boost profits remains critical for manufacturers, alongside building a strong network and ecosystem of suppliers (*Figure 6, page 17*).

Impact of public policy

- **A more favorable policy environment for manufacturing:** Executives throughout the United States, Europe, and China indicated their respective nations have a number of more favorable policies around key elements of manufacturing competitiveness than even three years ago. Specifically around the areas of technology transfer, as well as science and innovation, executives indicated their nations have favorable policies to encourage manufacturers to increasingly use advanced technologies to improve their manufacturing competitiveness. Intellectual property protection also rose towards the top of competitive advantages in the United States and Europe, while it was absent from the list of advantages in China.

- **US perspective:** United States executives were more favorable toward policies in the United States than the last study three years ago. According to US executives, favorable US policies centered on sustainability, technology transfer, monetary control, science and innovation, foreign direct investment (FDI), intellectual property protection, and safety and health regulation help to create a competitive advantage for their businesses. On the other hand, US executives identified policies around corporate tax rates, healthcare policies, labor, and taxation of foreign earnings as disadvantages for manufacturers in the United States (*Figure 30, page 39*).
- **Chinese perspective:** In China, policies either encouraging or directly funding investments in science and technology, technology transfer, sustainability, and infrastructure development appear to be helping Chinese-based companies to create a competitive advantage. Chinese executives indicate that some policies are inhibiting their competitiveness, including corporate and individual tax rates, labor laws, and government intervention and/or ownership (*Figure 29, page 37*).
- **European perspective:** European business leaders see the continent’s antitrust and product liability laws along with policies around intellectual property protection, healthcare, technology transfer, sustainability, and science as competitive advantages for them. At the other end, only four policies were cited as contributing to a clear disadvantage, including labor policies, individual and corporate tax rates, and economic and fiscal policies (*Figure 31, page 40*).

How global manufacturers can succeed

In order to succeed in the rapidly evolving global manufacturing landscape, companies will need to embrace a targeted approach to some of the key elements of manufacturing competitiveness, including:

1. **Ensuring talent is “the” top priority:** A focus on creating differentiated talent acquisition, development and retention strategies to be regarded as “employers of choice,” as well as identifying and nurturing new models of collaboration that leverage key sources of talent outside of the organization will be key. As talent is ranked as the most important driver of competitiveness by executives around the world, the competition among nations and companies is expected to be fierce.
2. **Embracing advanced technologies to drive competitive advantage:** Advanced technologies are increasingly underpinning global manufacturing competitiveness. Leading 21st century manufacturers have fully converged the digital and physical worlds where advanced hardware combined with advanced software, sensors, and massive amounts of data and analytics is expected to result in smarter products, processes, and more closely connected customers, suppliers, and manufacturing. Predictive analytics, the Internet-of-Things (IoT), both smart products and smart factories via Industry 4.0, as well as the development and use of advanced materials will be critical to future competitiveness.
3. **Leveraging strengths of ecosystem partnerships beyond traditional boundaries:** Adoption of innovation strategies aimed at embracing a broader ecosystem approach, developing and taking advantage of integrated manufacturing and technology clusters and partners, will be a growing imperative going forward. Competitiveness will be directly correlated to the strength and robustness of an organization’s collaborative networks and ecosystems.
4. **Developing a balanced approach across the global enterprise:** Increasingly sophisticated tools and strategies will be required to optimize the global manufacturing enterprise from a talent, technology, operational, financial, tax and regulatory perspective. The core of this approach is achieving a successful balance across a variety of drivers, including talent management, innovation investments, portfolio optimization, cost competitiveness, manufacturing footprint, and supply chain in challenging and rapidly evolving new markets. Indeed, both leading companies and countries are taking a more balanced approach by building a foundation for growth across multiple drivers of global competitiveness.
5. **Cultivating smart, strategic public-private partnerships:** Governments are becoming increasingly aware of the significant benefits a manufacturing industry provides to national economic prosperity. Likewise, manufacturing companies are keenly aware of the role government policy can play in their success. Therefore, many nations with unfavorable or overly bureaucratic manufacturing policies are working to improve and reform those, invest in greater economic development, and strengthen overall manufacturing infrastructure, while seeking to partner in more productive ways with businesses. Leading companies, in turn, are targeting new, smart and strategic public-private partnership models to help drive improvements not possible alone, resulting in non-traditional business-public sector alignments as the global competitive playing field undergoes a significant transformation at both the company and country level.