Written by Jagannath Rao, President, Customer Services Division, Siemens Industry, Inc.
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In recent decades, the American economy has transitioned many times—*from manufacturing to outsourcing, to economic crisis to a potential resurgence*
. But this revival is not going to happen through a simple “reshoring” of manufacturing. For the United States, a combination of factors will lead to a robust rebirth in manufacturing.

First, there needs to be significant growth in cutting-edge innovation of new technologies. We are already seeing the revival of startups and entrepreneurship, not only in the traditional havens like Silicon Valley, but also in many new locations across the country. The economic crisis, unemployment and the digital age have been catalysts to a revival of entrepreneurial culture.

Additionally, the gap between product design and manufacturing is fading away and the emergence of the digital factory is imminent. I call this transition in the world of production technology “seamless manufacturing.” America will most likely lead this renaissance—*and we need to be prepared.*
We are beginning to catch glimpses of such a shift in automotive and high-tech industries, which will aid in the birth of a new manufacturing era in the U.S.

Another important factor to consider is the increase in basic labor costs in developing nations. While many industries still thrive on China’s low-cost manufacturing base, for example, medium-sized and niche-technology industries that are looking at long-term, sustainable business models prefer to operate in a more local manner. Collaborative product-development techniques and crowd sourcing—*enabled by the Internet*—are also playing a major role in the return of manufacturing to the U.S.

Finally, the increase in new manufacturing jobs in the U.S. requires a workforce with different skill sets than those of past eras. Our education system needs to be refocused to produce specialized technologists and business people that are prepared for the manufacturing renaissance. Certificate programs and flexible online courses can help build expertise. The need for well-trained workers will shift toward more advanced skills in high-end automation, material-sciences-based innovation and precision engineering. Global organizations like Siemens are partnering and working closely with universities and technical schools to help design programs and curriculums to suit the needs of this new paradigm. It is more important than ever that we train and develop our labor force.

When combined, all of these factors—*education, innovation, increasing offshore labor costs and development of specialized workers* —will help boost America's economy and welcome back manufacturing to the U.S.
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