



MILLIONS OF MARKETS

Through advanced technological breakthroughs, the United States becomes highly self-reliant in terms of energy, agriculture, manufacturing, and other needs. There is increased migration towards smaller urban areas that are supported by nearby regional innovation hubs that can manufacture highly customized goods.

The last three decades have been witness to tremendous technological advances and social changes that have led to a high level of regional self-reliance in matters of energy, health, food production and manufacturing. Not only has the United States as a whole become highly self-sufficient, individual regions and cities have also become much more self-sustaining. The primary drivers of these changes were technical breakthroughs that are collectively referred to now as the “Three Pillars.”

The first pillar is abundant and low cost energy. Advances in drilling techniques and improved seismic testing enabled the economical location, capture, and production of tremendous quantities of natural gas from the massive shale formations across the United States. Renewable energy sources, such as solar and wind power, have also increased the total United States energy production. The net effect is some of the world’s cheapest, safest, and most stable electricity production. The lower cost of producing electricity contributed to the almost universal adoption of first hybrid and then electronic vehicles.

The second pillar is the widespread use of intelligent manufacturing to include 3D printing, flexible robotics,

and other advanced manufacturing techniques. These advances enabled the production of small to medium batches of a wide variety of products at reasonable costs. Essentially, the cost advantages of leveraging economies of scale that dominated manufacturing throughout the last several decades of the 20th century were replaced for many products by the ability to cheaply produce a wide range of highly customized products. While manufacturing has not advanced to the stage of “home replicators” that local Maker enthusiasts once envisioned, it has led to the development of regional manufacturing hubs across the country. These manufacturing facilities are close to consumption centers and are fueling the expectations of consumers for the rapid creation and delivery of highly personalized goods. A key innovation that transformed the manufacturing industry was the separation of the digital design from the physical production process. This has in turn lead to the creation of a new industry sector of pure digital design firms that develop and sell small-run or custom designs.

The third technological advancement was the wide spread adoption and use of virtualization. Working and shopping from home – or from any other location –

has become the standard rather than the exception for many people. Most households order products and services directly from the home and receive them there as well. On-line shopping with prompt delivery to residences has largely replaced physical stores. People still go shopping in person – but the retail experience has evolved into an event rather than just a way to acquire physical products – similar to how movie theaters adapted when home entertainment systems were introduced. As goods and services have become more mobile than people, there is less physical commuting to work. Ironically, the level of travel for pleasure has increased since a large percentage of the workforce can work from any location.

A social change that has emerged over the last several decades is the increase in social interaction – both virtually and in-person. It appears that while people can now work and live totally isolated from other humans, very few actually do. Instead, there has been a groundswell migration towards “livable cities” of a moderate size where people can enjoy the benefits of interacting with others in an urban setting without the overwhelming congestion and other drawbacks of an impersonal mega-city. As these mid-sized cities continue to grow, however, pockets of exceptionally high-density residential and commercial space are being created that mimic some of the problems and challenges faced by mega-cities – albeit at a smaller scale.

In this widely fragmented, yet highly connected, society, small and mid-sized cities are growing at a faster rate than the megacities. Local governments compete with each other to attract investments to create “innovation clusters” that feature a mix of technology, manufacturing, and distribution facilities.

Technological advancements and cheaper energy have ushered in a new age of affluence: average household income has increased, personal consumption has soared and standards of living have improved. It is not a technology-utopia, however. The income gap has widened between the traditional “blue collar”, “white collar”, and the newly established “no collar” creative

class. Many traditional jobs have been displaced and those workers struggle to find new vocations. This is especially true for older workers who are not as able to adapt to the newer technology. Government programs and regulations at the Federal, and more commonly, state and local levels have been introduced to minimize this gap – with limited success.

Also, while new agricultural techniques, mainly genetically modified fruits, vegetables, fish, and livestock have significantly increased the quantity and variety of food products available to consumers; there has been a significant amount of resistance from some sectors of the population. Food considered “Absolutely Organic” is generally available, but at a much higher cost. There are also still lingering suspicions in some parts of society over the safety of hydraulic fracking for natural gas.

In this fast-paced environment, the optimal production site is closer to consumption centers. The affluent and savvy buyers of this world demand products customized to their needs and tastes. While American consumers prefer locally produced goods, they are not inherently against foreign products, provided they meet their high expectations of personalization and delivery speed.

Trade between countries is still active, but for the first time in history, the value of imported and exported services exceeds that of goods. The United States is a net exporting country when considering services, such as digital designs. Physical trade still occurs, but at a lower level and in different forms. For example, global trade of raw materials has increased while transportation of finished goods has decreased. Raw materials and components are transformed into goods when and where demanded by the final consumer. Also, intellectual property that is used within most local manufacturing is traded freely across the globe although there are some risks concerning theft of these “recipes” and instructions in certain areas of the world. ■