HURON

How to Approach Industry 4.0 if You're Still Grappling With 3.0:

A GUIDE FOR MIDDLE-MARKET MANUFACTURERS

By Kathleen Dobrovic and Mike Gluhanich

Many manufacturers, particularly middle-market firms that have faced financial underperformance or disruptive changes in their customer base or end market, underinvested in the upsurge of automation technology that characterized the third industrial revolution.

In these organizations, it's common to see outdated information systems; a lack of integrated planning between departments, plants, and divisions; and highly manual processes with low (or nonexistent) adaptation to emerging technology. Nevertheless, late adopters can still bridge the gap between themselves and more advanced firms who have already capitalized on Industry 3.0 and moved on to 4.0.

Industry 4.0, or smart manufacturing, goes a step beyond the automation themes of 3.0 to focus on artificial intelligence and predictive analytics that optimize these previous technological investments.

Industry 4.0, or smart manufacturing, goes a step beyond the automation themes of 3.0 to focus on artificial intelligence and predictive analytics that optimize these previous technological investments. The Industry 4.0 market is expected to increase from $116 billion in 2021 to $337 billion in 2028.

This latest period of innovation presents an exciting future for industrial and manufacturing companies, with the potential for real payback. Imagine predictive maintenance systems capable of analyzing large volumes of internal and external data and providing risk warnings that could inform preventive planning. Or automated schedule loading that responds to new data in real time to create the most efficient production plan.

A world where this is the norm has the potential to transform the landscape of middle-market manufacturing as we know it. But it also carries with it the likelihood of driving a significant wedge between those organizations that leaned into 3.0 investment and those that did not.

Questions for Leaders

There are a number of questions middle-market manufacturing leaders should be asking to determine how to approach their Industry 3.0/4.0 investment.

1. What problems are we trying to solve (for ourselves and our customers)?
2. How does solving those problems align with our long-term strategy? (Hint: They need to be connected!)
3. How much capital do we have available (and over what time frame) to invest to solve these problems?
4. What proven technologies are available in our industry and for our processes? What 3.0 or 4.0 investments did competitors make that we missed?
5. What investments are we already planning, and are there 3.0/4.0 enhancements we should consider for long-term growth and competitive advantage?
6. How resilient and efficient are our manufacturing and administrative processes today? Should we target fundamental process improvements before investing in new technologies?
7. Do we have a robust change management process in place to support a transition to new process technologies and new ways to collect and analyze data?
8. Do we have the human capital to implement, maintain, and utilize new technologies? If not, what skills are we missing and how will we address those gaps?
9. Do we have localized and decoupled process efficiencies, but not integrated enterprise efficiency?
10. Are we using all of the data we're collecting? Is there more data we wish we had?

We have identified three tactics that work in tandem to help small or middle-market manufacturing companies gain ground in the race for technology-enabled market share. Each element of this three-phase approach is critical, prescriptive, and sequential. Manufacturers must invest in each to realize the full benefit. The investments take the form of reflection, analysis, and strategic planning — not just financial.

1. Focus on process improvement and strategy first.

Failing to focus on processes and strategy before implementing new technologies is an all-too-familiar trend in industrials and manufacturing. But the most innovative companies are leading with strategy, enabled and accelerated by technology, rather than relying on an investment in technology to reveal or confirm a strategy.

A clear organizational strategy, underpinned by robust, efficient, and ingrained processes, lays a stable foundation for technological upgrades. For investments to make an impact, they should be centered on a clear understanding of the business's growth objectives and intended to support practical, functional workflows and well-engineered manufacturing processes.

Even the most advanced technology in the world cannot (yet) improve the operational or financial performance of fundamentally flawed or ineffective processes or eliminate the need for human intelligence in developing and communicating corporate strategy.

2. Keep change management top of mind.

As with any major change, the introduction of new technologies can be jarring for employees accustomed to a certain way of performing their jobs. Yet, the intended impacts of technology investments cannot be achieved without enterprisewide adoption.

To that end, an intentional focus on change management is critical. Involving key stakeholders from the beginning helps them understand the role they play in the business's success or failure and, importantly, how their role will change with a transition to new technology. This goes a long way toward fostering engagement, empowerment, and a sense of inclusion in the organization.

This shift also requires an intentional upskilling and/or re-skilling program that helps employees build the skills they need to thrive in this new environment. Despite what science fiction novels may suggest, there is unlikely to be a time when factories are run entirely by machines, devoid of any human touch. However, robots, artificial intelligence, and automated data analysis will likely play an increasingly large role in manufacturing moving forward. So, giving workers the ability to retrain for new jobs (some of which may not even exist today) will help them to work in concert with these technologies and find their place in this new frontier.

3. Choose investments aligned with long-term objectives and core strategies.

For organizations with little capital to spare, it is essential to select specific avenues of investment that hold the greatest promise of return and the least potential for risk. The key is to determine what tools will give their businesses the most velocity as they seek to execute their strategies.

Larger companies that tend to be early adopters of new technology have more available capital and a longer time horizon for realizing a return on their investments (ROI). These organizations often make investments driven by economies of scale.

Smaller and middle-market companies, on the other hand, often do not have such luxury. In many cases, they are focused on shorter-term planning cycles, have more limited access to capital, and cannot rely on volume to achieve their ROI targets. Often, the natural inclination for these manufacturers is to invest in equipment, software, or other technology that will generate the quickest payback, even if the time horizon over which that investment is relevant is relatively short. Technology investments aligned with long-term objectives and core strategies do not always yield a significant return quickly.

In these organizations, leaders should focus technology investments using an appropriate time period and supported by strategic objectives, not tactical goals. They should also ensure that these investments align with the most fundamental strategies of the business, so unanticipated disruptions or external factors do not diminish the purpose and benefits of the investments.

The natural inclination for these manufacturers is to invest in equipment, software, or other technology that will generate the quickest payback, even if the time horizon over which that investment is relevant is relatively short.

Next Steps

Want to discover how Huron helps organizations transform their business operations?

LEARN MORE

HURON

huronconsultinggroup.com