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Blended Synergy: The Balance of Automation & Expertise

Robotic Process Automation (RPA) is becoming an important innovation across many industries and is beginning to catch the attention of many supply chain professionals. The idea of robots in the workplace might conjure up likeable characters such as Rosie from the Jetsons, Vicky from Small Wonder, or Bender from Futurama. Or maybe you went directly to an image of a doomsday scenario where terminator-like robots take over the world and enslave mankind. Now that I have your imagination running wild, it might be a good time to take a step back and reset.

What is Robotic Process Automation? RPA is a malleable solution that leverages computer software and digital networks to manipulate data, process transactions, and execute defined activities across enterprise systems. See, nothing scary about that. RPA is particularly successful when applied across large labor pools responsible for executing high-volume, transactional functions, but the right solutions can have a positive impact regardless of the size of your labor pool.

RPA will significantly increase productivity by freeing up your most valuable assets to focus on delivering better products and solutions, moving your company forward. Robots don't make mistakes so your company will benefit from 100% accurate data. Data is becoming increasingly valuable and higher quality of work translates to better data, compounding value. Data allows you to make better decisions that impact how you operate, focus capital investments, scope of products and solutions, and position yourself in the marketplace. And, if you manage your customers' data, improved insight and visibility to their organization could lead to higher revenue streams.

RPA solutions differ by company because they reflect the unique demands on your business and how you deliver products and solutions to your customers. These solutions can assume various roles such as automating a highly repetitive task like retrieving documents, sending emails, or executing a definable process. Robots can also augment humans by reducing the time and effort it takes to gather information that requires human intuition and provide single-click execution. They can even assume a

less conventional role to help reduce IT costs by assisting with repetitive system configuration, executing test scripts, perform audits or monitor system performance. Your options are limitless.

There are many RPA solutions in the industry and each has specific strengths and weaknesses. Understanding your company's business, technology, security, and financial requirements is critical to your selection process. Once you clear that hurdle, your focus should be on fully understanding how your business operates. At this point, you can't get too far into the weeds.

Understanding and untangling years or decades of business procedures can be complex, but improving a process is not just applying automation. You should challenge why the process is necessary, question how the process is accomplished, and understand who is executing the process. Making sense of your processes will help drive your RPA solution architecture, which will be very different for every company, and forms the foundation for success. Once architectural framework is identified, having the right people and disciplines to design, develop, and support solutions will have the greatest impact on long-term success. The biggest barrier to implementing new technology is overcoming resistance to change. Change is new and new is unknown, and humans don't do well with unknown. Our brains crave predictability, knowns, and constants.

History judges Johannes Gutenberg or Eli Whitney favorably because their disruptive technology changed the status quo in a dramatic way. Scribes were probably not wild about Gutenberg's printing press and laborers adept at picking cotton were not wild about Whitney's cotton gin, but does anyone today think the printing press or the cotton gin was a step back? At the time, those disruptive technologies caused real pain as they reduced the demand for skills in high demand.

Newness eventually becomes normalcy and order is restored. Eventually, robotic automation will be commonplace, and will ultimately assume its place in history when replaced by future technology. Until then, it is our job, our responsibility, to move technology and your company forward.



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Working Alongside Robots: No Longer Science Fiction

Working alongside robots in warehouses is the way of the present, rather than the way of the future. The recent ProMat and Automate conferences, in Chicago, featured robotics and automated materials handling equipment. “Solve for X,” the theme of the conference, emphasized the need for manufacturers, warehousing and third-party logistics companies to embrace change to stay relevant.

Rather than focusing on the technological capabilities of these high-efficiency robots, our team attended ProMat & Automate with an eye toward the changing workforce. As we strolled the aisles, observing robots in demonstration booths, we reflected on the results of the 2017 MHI survey. The MHI survey, the fourth in a series of annual industry reports developed in conjunction with Deloitte Consulting, focused on “Next-Generation Supply Chains: Digital, On-Demand and Always-On.” The survey received 1,100 responses from manufacturing and supply chain industry leaders.

Approximately 80 percent of respondents to the survey said automation will dominate the logistics industry in the next half decade. Even more relevant, 61 percent of MHI survey respondents indicated that they view robotics and automation of warehouse materials handling equipment as either a disruption or an advantage in the supply chain industry. For comparison's sake, 39 percent of respondents to the 2015 MHI survey reported this view on robotics and automation.

According to the survey respondents and other research, using current logistics methods in urban areas is unsustainable. Sorting robots that use flights and pushers within a small warehouse footprint, such as in a tight-spaced urban setting, will maximize efficiency. Small unit robots in warehouses, like Amazon's Kiva robots, and delivery bot-pods, like Skype founders' new food delivery venture Starship Technologies, will be key to reducing congestion and gaining efficiencies both inside and outside the warehouse.

In addition to well-known retailers like Amazon and Skechers, at Under Armour's manufacturing facility, humans and robots already work alongside one another, to a much greater extent than at most other manufacturing facilities.

Technological disruptions are generally considered positive for industries. However, for those in the materials handling workforce, a robotic disruption could seem

threatening. We want to help assuage those concerns about potential diminishing warehouse job openings. Instead, warehouse employees should look forward to easier physical labor, less stress and more intellectual stimulation on the job.

Robots can take the pressure off of warehouses and 3PLs during seasonal surges. Robots can take shifts during the hottest or coldest parts of the day and drastically reduce the amount of walking humans need to do on a daily basis picking orders throughout the warehouse.

A *New York Times Magazine* article published the week of Feb. 23, 2017, emphasized that most robots working alongside humans in warehouses are not eerily human-like, but machine-esque. The reporter implied it is less unsettling to work alongside machines than it would be to work alongside animatronic bots. In this observation, the *Times* addresses and then debunks a common fear: that robots will replace all human workers. Materials handlers should rest assured that there will always be work that needs to be done by humans, namely work that requires observing and anticipating needs in social situations and work that demands emotional intelligence. Customer service situations, like communicating with a major manufacturer about space needs and limitations, inventory shortages or damage, still require abundant human interaction and interference.

Moreover, a *Los Angeles Times* article published Dec. 4, 2016, points out that, while fewer warehousing jobs are being added for materials handling tasks, the new job positions pay more, due to the higher skill set required to monitor automated lift equipment. In the coming years, new automation technology should create approximately 15 million jobs, according to Forrester, a research firm. With these new jobs come important consideration factors. For example, lights-out automation would be much more possible with robots, creating a new set of safety considerations, such as creating adaptive zones, complying with new regulations and providing both bots and humans with clear instructions on how to operate within the designated zones.

Has your organization implemented automated lift technologies yet? How much have you saved in operational efficiencies and utility bills? (Automated lift trucks can work in the dark.) The future is now.



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Planning for the IoT and the Future of Your Supply Chain

The rise of the Internet of Things (IoT) has been noticeable across every aspect of everyday life, from controlling the lights in our homes to tracking the way we shop. It's no surprise that it's also having a huge influence behind the scenes of the supply chain, altering and improving processes from end-to-end to enable retailers to compete within the ever-changing digital landscape.

IoT refers to the internet working of physical devices such as vehicles and buildings, which are embedded with new software and sensors that enable the device to collect and exchange real-time data. This data can then be applied to improve efficiency, make services more personalized, or create new user experiences. When applied to manufacturing and the supply chain, this data can be utilized to bring to life a more streamlined process that runs faster, cheaper, and with fewer mistakes than traditional methods – all of which are vital to keeping up with the increasing customer expectations from e-commerce.

In 2014, there were 1.8 million tracking devices in use on trailers, containers and pallets, allowing organizations to keep track of where their assets were at all times. The benefits of the IoT developments go much further than location tracking though. As it advances, this new technology is being seen as the 5th mobile generation of wireless systems coming into action, beyond the existing 4G signal. This new generation of networks is envisioned to solve the challenge of joining communications and computing together – i.e. entirely for connecting the IoT, leaving 4G focused on 'human' connections. This will allow for complex, real-time feeds of data, such as detailed inventory tracking, which not only allows retailers compete visibility of how much stock is being

held and where, but also if it's being held in the right conditions – for example the temperature and humidity of the warehouse at any given moment and receiving alerts if it goes outside of the necessary levels.

Further back in the process, the new technology will also help retailers and businesses to optimize their own supply chain, by monitoring the product lifecycle to incorporate various product performance measurements. Enterprise resource planning (ERP) systems will be able to monitor parts that need replacing, automatically sending an alert before a fault occurs. Similarly, demand forecasting for manufacturers will mean devices that need ongoing support or supplies, for example, printing machines, can effectively monitor themselves, checking levels and automatically placing replacement orders when supplies are low, so there's no need for additional, expensive excess inventory to be ordered and stored, and businesses can stay focused on what they do best. Over time, this will also be able to predict seasonal highs and lows – both for the individual business and the industry as a whole – and pre-empt when demand will be high to alert users and increase stock levels.

For manufacturers and retailers, the IoT will also give previously unimaginable insights into their products when they are actually in use, helping them to refine their offerings, provide predictive maintenance and receive invaluable data on their audiences.

When you look at all of these factors combined, it becomes clear that the Internet of Things is set to change the supply chain in its entirety. By adapting the core dynamics of business processes from marketing to final mile delivery, the IoT will streamline and optimize to never before possible levels, dramatically impacting the supply chain for the better.