THE TECHNOLOGY SUPPORTING THE SUPPLY CHAIN

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June 2013

National Center for Supply Chain Technology Education
RESOURCES FOR EDUCATION & INDUSTRY

We've heard the buzz around how the global economy affects us in one fashion or another. We have seen how political instability, natural disasters and lack of resources impact the cost of the products consumed.

Walk onto any local college campus today and you'll find courses on Supply Chain, Logistics and Distribution. These disciplines help solve the need to get product from one place to another. It is through Supply Chain Management that we apply the understanding of every step in the process of the flow of goods. To quantify and measure, performance metrics are put in place. We "lean out" processes and track product from manufacturing to the retail shelf. Employees are trained and the culture of the organization is formed through policies and procedures. But yet, Supply Chain Technology can be considered as equally as critical a component to enabling a seamless and consistent flow of goods.

Supply Chain Technology is the mechanism which can help enable constancy so that the delivery is made on time, on budget and to the consumers' expectation.

As goods began to come into our ports as a result of inexpensive labor oversees and globalization, the focus on efficient processes began. Any opportunity was exploited to cut costs in order to maximize bottom line revenue, all while ensuring the lowest possible price for the consumer. Lean and Six Sigma tools were used to identify and eliminate opportunities, increasing efficiency in these processes. An industry for material handling equipment sprung and began to find solutions where automation facilitated the movement between one process to the next. The need for an educated workforce to address the complexities throughout the supply chain became evident as well.

While the industry was quick to see the importance of establishing education around the theory of supply chain, the importance placed on available technologies for distribution were left to evolve on its own or not at all. It was not until recently, as a result of smaller components such as more affordable pricing and standardization that the integration of technology began to tie into the automation needs of a modern day distribution center. The importance of an education around optics, energy savings and artificial intelligence evolved. This created a Supply Chain Technology industry that often involves a system of mechanics such as motors, gears, belts, racking systems and robotics that work together with multiple virtual systems in order to process goods the least costly.

Unlike Supply Chain Management where we had to understand processes, with Supply Chain Technology we are now seeking an understanding of tools and automation available that would address process driven constraints such as complexities around a labor force (not having sufficient or reliable labor), the need to determine metrics, as well as the opportunity to get product out of the distribution centers quicker and into the hands of the consumer.

Supply Chain Technology is a critical component within the Supply Chain, whether it be very simple or a complex system. In the simplest form, it can be observed with something as simple as a hydraulic jack used to move pallets from point A to point B. Or as complex as highly automated robotic arms utilizing lasers and preprogramed dimensional information to efficiently offload a container. In 2013, the Material Handling Institute forecasts an increase of up to 6% growth of material handling equipment (technologies) orders.

Supply Chain Technology also covers the vast range of software systems that factor in complex business variables across multiple geographies and optimize decision making. Enterprise Resource Planning solutions (ERP) and Business Intelligence systems are prime examples. With the help of ERP systems, all business functions such as Finance, Operations, IT, HR, Sourcing, Demand Planning, Logistics and others can integrate on one platform, share real-time information with one another and their customers. The access to real-time information and insights into an organization's customer base are critical to staying ahead of the game in this competitive market place. Supply Chain Technology systems are vital to achieving this level of success.

ProMat, a trade show that showcases automation and future technologies for warehousing is sponsored by the Material Handling Institute. This year ProMat registration had over 34,000 vendors and visitors from over 125 countries. Next year's registration is expected to grow in attendance. Vendors and integrators that attend ProMat are solution providers to the opportunities which are identified through Supply Chain Management.

Edward H. Frazelle, Ph.D. wrote in work titled World-Class Warehousing and Material Handling

"We often believe automation is a way to streamline a complex process, manage a complex process, and/or make a complex process more efficient. Instead, automation is inherently complex. By applying complexity to a complex situation we, get complexity squared. The correct approach is to simplify and streamline a process first- taking as much work content out as possible."

Understanding the complexities around various solutions and material handling systems is critical. Lack of this understanding may result in either an unnecessary expenditure, or it could even impede the flow of product throughout the supply chain, thereby inhibiting efficiencies from occurring. Understanding and applying Supply Chain Management practices can enable success of an organization, but understanding and leveraging Supply Chain Technology can take an organization from good, to world class.