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Designing Distribution Networks and Application to Online Series

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**Case Study #1**

What defines the small and mid-sized business (SMB) market for transportation management systems (TMS)?

I began my presentation at last month’s Council of Supply Chain Management Professionals (CSCMP) Annual Conference with that question, in a session titled “TMS for SMB: A Case Study with Carhartt,” where I co-presented with Andra Gibson (Project Manager, Logistics Service Solutions at Carhartt) and Gregg Lanyard (Director, Product Management at Manhattan Associates). Is SMB defined by a company’s annual revenues? Its freight spends? Its annual shipment volume?

The answer, as I’ve argued before, is that we can’t view the SMB market as a “one-size-fits-all” category, especially when it comes to TMS requirements. For starters, small businesses are often very different than midsized businesses, so we need to stop lumping them together. At the end of the day, the best approach is making the effort to truly understand and address the unique needs and characteristics of every company — both today and where they’re aiming to be in the future.

Carhartt is a great example. This family-owned company — a leading brand in durable workwear and outdoor apparel — was founded in 1889 but its business continues to change rapidly. As Ms. Gibson highlighted in her presentation, Carharrt is experiencing rapid growth. Its manufacturing capacity is at the highest level in the company’s history, and just two years ago Carhartt began opening its own retails stores across the country (with stores in 17 states as of the end of September 2016).

Rapid growth, coupled with new market segments and channels (including ecommerce), prompted Carhartt to embark on a multi-million dollar upgrade of its distribution center, which included investments in warehouse management and transportation management solutions.

From a transportation standpoint, Carhartt came to the same realization that many other fast-growing companies ultimately come to: if they wanted to drive efficiency, control headcount, gain greater visibility, and reduce overall freight costs, they could no longer rely on Excel spreadsheets to manage their transportation operations, especially with the diverse set of modes and channels they were now dealing with.

Carhartt evaluated several TMS solutions across a broad set of functional requirements, including:

• Order Management

• Location Management

• Capacity Management

• Procurement & Contract Management

• Rate Management

• Carrier Communication

• Planning & Optimization

• Shipment Management

• Visibility & Event Management

• Freight Bill Audit & Pay

• Reporting & Analysis

• Modeling

The company ultimately selected Manhattan Associates’ cloud-based TMS (Carhartt was already using Manhattan’s WMS solution and was planning to upgrade it at the same time). Why Manhattan? Obviously, the solution met Carhartt’s functional requirements, but there was another important factor that Gibson highlighted, a factor that many other companies sometimes fail to consider: “It was important for us that the vendor and solution we selected was capable of growing with us as our processes developed and matured,” said Gibson.

In other words, Carhartt incorporated its long-term strategy and objectives into the selection process — that is, the company didn’t only factor in the TMS capabilities it needed today, but also the capabilities it anticipates needing in the future as its business and transportation operations continues to grow and evolve.

Cloud-based deployment was another contributing factor in Carhartt’s selection. “Our company’s philosophy regarding on-premise installations has evolved based on the need for quick deployment of on-demand, integrated solutions,” said Gibson. “Being current [with the latest TMS version via regular updates] is important with the evolving needs of our supply chain network.”

Carhartt went live with the TMS in February 2016 and the company is already experiencing benefits, including improved carrier and mode selection, enhanced service levels, improved visibility into customer delivery, and decreased overall transportation spending. In a press release issued by Manhattan Associates prior to the conference, Sharon Perry, vice president of logistics at Carhartt stated the following:

“Our adoption of Manhattan’s cloud-based TMS and the ease of implementation has given us greater visibility into the supply chain, directly impacting our ability to be agile and adapt to the different levels of sophistication that our customers and carriers demand. We can now offer customers flexibility to experiment with different delivery methods, which is especially important during peak season.”

**Case Study #2**

The retailer operates and supports a vast store and eCommerce network across the United States through a network of 13 distribution centers. The systems landscape consisted of 45+ systems with variations to support both store and online channels. Many of these systems had reached obsolescence or near to it, causing operational and maintenance risk. The retailer was looking to undergo a large-scale network update and needed to understand the implications of the landscape as it currently exists. The Bricz team was able to provide an assessment of the current state supply chain network along with recommendations to modernize the landscape. Some of the Bricz recommendations included: Creating a single view of inventory across channels Performing an inbound shipment assessment Consolidating multiple distribution channels into a single, Omni-channel network Evaluating the current store distribution (put-to-store) strategy Considerations to compete against pure play eCommerce giants.

Single View of Inventory While the retailer understood that its modern customers want flexibility, product differentiation and competitive pricing, they were uncertain how best to execute on these needs. The Bricz team recommended incorporating Omni-channel methods to engage with the customer like buy online pick up from store (BOPIS), store fulfillment, and buy online return in store (BORIS). Bricz also recommended implementing a single view of inventory to provide a unified fulfillment strategy and create a competitive advantage in the Omni-channel landscape

The retailer traditionally used import consolidation to receive product from its vendors and then ship to its store fulfillment and eCommerce centers. The Bricz team presented a plan for the retailer to run simulations to determine if the import consolidation was needed or if inbound shipments could be directly received by the store fulfillment and eCommerce centers. This would result in a smaller inbound consolidation operation and less product touches.

The retailer supports both retail and eCommerce distribution in most distribution centers, but these functions were handled separately resulting in multiple product touches within the network. Bricz worked with the retailer to develop a plan that eliminates product touches within the DC by utilizing the real estate as “one building” that supports both channels seamlessly. This plan would also offer better customer service and create labor efficiencies within the four walls.

The Bricz team evaluated the current store distribution strategy the retailer was executing. After analyzing the strategy, Bricz recommended performing a simulation assessment for multiple methods including unit sortation and put-to-light. The Bricz team also explored other options to increase the efficiency of the store distribution strategy including the introduction of multiple put-to-light stations and robotic induction for the retailer’s Bombay sorter. Ultimately, Bricz provided the retailer with a recommendation to allow for faster sorting by department and a streamlined store distribution process.

The retailer, like most today, is facing pressure from pure play eCommerce giants in areas like shipping costs and returns. Bricz helped the retailer understand technology and process investments that allow them to compete in today and tomorrow’s landscape. One of the options explored was a practical back up plan that sources urban real estate through acquisitions and partnerships to facilitate a lower, last-mile delivery cost and easier returns processing.

**Case Study #3**

An offshore privately held manufacturer of footwear components developed a unique new design for an entire shoe and concluded that the best way to introduce it in the U.S. was through e-commerce market channels.

Establish was engaged to set-up the distribution network for the new product and to do so, identified the overall best distribution location for the new product and also identified the best third party to provide the related order fulfillment and returns services. Subsequently, Establish evaluated the third party near the end of the initial contract period to confirm that services were being provided as agreed.

Sales of the new product increased by geometric proportions and today, the product is well known by its brand name, and possibly an icon, in the U. S. market. In addition, Establish assisted the manufacturer in identifying and acquiring the overall best software to support the growing business.

**Case Study #4**

Distribution network plays a vital role on the efficiency and the responsiveness of a supply chain. Any product or service goes through a network until it reaches the final customer. Health care systems incorporate distribution networks to better provide health services to patients. In this study, a distribution network for communicable diseases has been developed. The proposed network addresses Hepatitis A in Jordan as a case study, as it is considered one of the common communicable diseases in Jordan.

A regression model was developed to predict future incidents of Hepatitis A in Jordan to build a distribution network based on the future required resources. An optimization clustering model was used to structure the appropriate distribution network. The proposed network was compared with the current network used for distribution of medications for Hepatitis A.

The new network incurs less cost in delivering medications to the required hospitals as the traveling distance is less. As future work, it is recommended to incorporate more communicable diseases to develop more realistic distribution network.

**Case Study #5**

Mellow is a company that makes a magical kitchen robot that syncs with your smartphone to cook for you at your convenience. The founder, Ze Pinto Ferreira was interning at Braun when he realized everything he knew (mechanical engineering, food, product design) could intersect to create impactful work.

He knew the sous-vide he wanted to create should change home cooking dramatically, but he also knew he couldn’t do it alone. That’s when he set off to find a co-founder, Catarina who was working as a freelance designer.

He managed to convince her to use her talents on a potentially groundbreaking company and the two of them built Mellow together.

**What They Did To Succeed**

Using Trycelery.com as their pre-order platform, Mellow was launched to great success. They collected a total of $64,000 in pre-orders in ONLY 3 days and eventually made $200,000+ in less than a month.

**Key Takeaway**

In the case study, Ferreira mentioned how he marketed Mellow by reaching out directly to 100+ reporters. Given the background of both Ferreira and Catarina, though, PR seemed to be out of their reach.

This is where the classic Paul Graham business strategy comes into play. To get your startup off the ground, you have to do things that don’t scale. Don’t know how to do PR? Teach yourself, reach out to reporters, and get your product or service in publications like TechCrunch and TheNextWeb.

That’s exactly what the founders of Mellow did, a process that earned them six figures within the first month of launching.