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Learning From Supply Chains: Ethan Allen Interiors, Inc. and the Furniture Industry

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The Furniture Industry is another industry, which has deep historical roots similar to the apparel industry featured in last months K&A Review: *Learning From Supply Chains: Benetton Group S.p.A and the Apparel Industry*. What began thousands of years ago with craftsman making handmade furniture has now evolved into a $74 Billion industry worldwide as of 2003. Today the Furniture Industry supply chain spans the globe, and has created product lines for every room in the home and even outside as well. It doesn't stop there however when we consider office furniture, hotel furniture and restaurant furniture.

As the Furniture Industry continues to grow and supply chains expand, we can learn some very interesting lessons by the models of the industry and one specific example, Ethan Allen Interiors, Inc. What was once a household brand in furniture adapted in the industry by moving to made to order interior design. This evolution forced Ethan Allen to rethink their strategy, approach to customers, and the entire supply chain as they have undergone major changes over the past 15 or more years.

Introduction to the Furniture Industry

The Furniture industry has been changing dramatically over the past 30 years. In the US, the furniture industry primarily consisted of large companies targeting different segments of the market, classical styles, business furniture, and outdoor furniture more recently. In Europe the market was much more fragmented with smaller design companies working in only leather for example, or particular styles like modern or art deco.

As customer preferences for style began to change roughly 10-20 years ago, and globally customers began to demand lower pricing on furniture, the industry slowly shifted. Larger companies such as IKEA and Wal-Mart began to rise and customers were given a new shopping experience for furniture at a more affordable price. At the same time, furniture manufacturing in China began to increase as sourcing and export demand rose. What was once a very stable controlled market dominated by a defined number of large manufacturing and retail operations, was now a highly volatile market. Many companies were forced to declare bankruptcy as cost competitiveness shifted, shut down their manufacturing facilities, or rethink their entire strategy and focus of manufacturing expertise.

What we notice when we look at the industry is those companies that have remained competitive have all made similar changes to their supply chain operations. The three areas that we notice most frequently are, 1. Consolidation of Manufacturing, 2. Balancing Supplier/Manufacturing Demand, and 3. Decreasing Vertical Integration. As it currently stands, Ethan Allen has faced these challenges most effectively to maintain their position as an industry leader.

Ethan Allen Interiors, Inc.

Ethan Allen was founded in 1932 as a furniture manufacturing company to supply the growing national demands of consumers primarily in the US. Today, Ethan Allen Interiors, Inc. is a leading manufacturer and retailer of quality home furnishings. The company sells a full range of furniture products and decorative accessories through a dedicated network of over 300 design centers located in the United States and abroad. The company operates 9

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domestic manufacturing facilities.

Until roughly 1988, Ethan Allen only manufactured for the core segment of classical furniture and as changing consumer demands shifted the company refused to change this focus. Around the early 1990's however, the company realized its products were dated to older styles and older consumers that were rapidly moving out of the furniture purchasing segment due to age. The new generation of customer had entirely different interests as it pertained to furniture and home furnishings, and what was once a segment dominated by Ethan Allan, soon saw new entrants taking market share rapidly.

As the market moved, Ethan Allan has realized that changes to the company's internal operating systems were necessary. Comparative to the industry, the company is in a far better position then they were even 10 years ago. Let us consider some of the industry metrics in the current Furniture Industry.

	Ethan Allen Interiors, Inc.	**Bassett Furniture Industries, Inc.**	**Furniture Brands International**	**Hooker Furniture Corporation**	**Stanley Furniture Company, Inc.**
Total Revenue ($ Million)	$1,066	$328	$2,418	$350	$307
Sales Growth Rate	-1.7%	-7.6%	-3.2%	--	-10.5%
Cost of Goods Sold ($ Million)	$525	$225	$1,888	$249	$243
Gross Margin	51.87%	31.06%	21.47%	29.28%	19.59%
Operating Margin	11.36%	-2.75%	2.39%	-0.07%	5.74%
EBITDA Margin	13.58%	0.22%	3.89%	1.23%	7.69%
Profit Margin	6.98%	-0.3%	1.19%	-2.5%	4.37%
Return on Assets	8.72%	-0.3%	1.75%	-3.96%	7.41%
Inventory Turnover	2.63%	4.37%	3.91%	3.49%	3.96%
Receivables Turnover	44.75%	7.65%	6.22%	7.65%	7.92%

What we can clearly see from this data is Ethan Allen's ability to maintain high profit margins, in an increasingly competitive and changing market. For a company as large in size, their return on assets, and receivables turnover are very strong compared to the industry averages. Current plans to reduce lead times and inventory holding in the distribution centers

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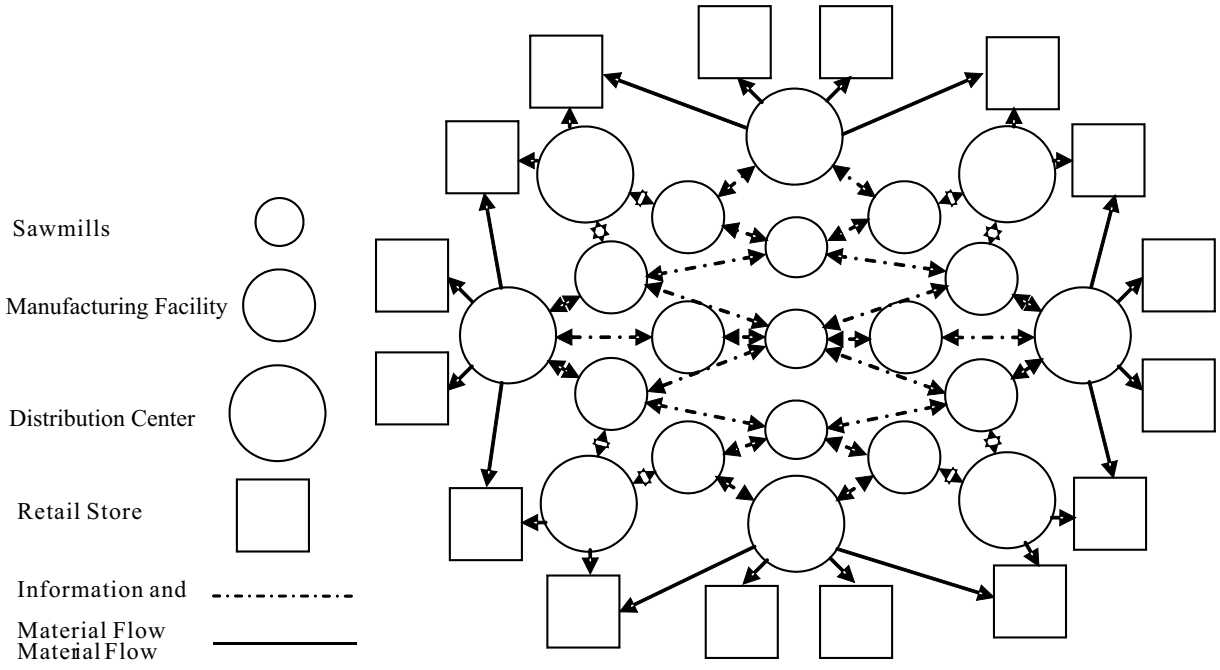
should further increase their inventory turnover rate.

Ethan Allen Interiors, Inc. Supply Chain Model

Ethan Allen Interiors, Inc. is one company that has developed in the last decade through significant supply chain reorganization. In 2001, the company had 20 production plants including manufacturing and upholstery, 3 sawmills, and 11 distribution centers. In 2001, the company manufactured 90% of products in the US and 10% overseas. These operations produced for roughly 300 retail outlets.

As recent as 2006, Ethan Allen Interiors has restructured their entire supply chain. They now only have four manufacturing plants for furniture assembly, four manufacturing facilities for upholstery, one for accessories, and seven distribution centers. Ethan Allen now produces 70% of products in the US and 30% overseas through subcontracted suppliers. Through these developments, the retail operations have expanded gradually to 311 design centers. Here is a comparison of the supply chain model for Ethan Allen. The first is the company's supply chain architecture around 2000, and secondly their more recent supply chain design.

Ethan Allen Supply Chain Model 2000



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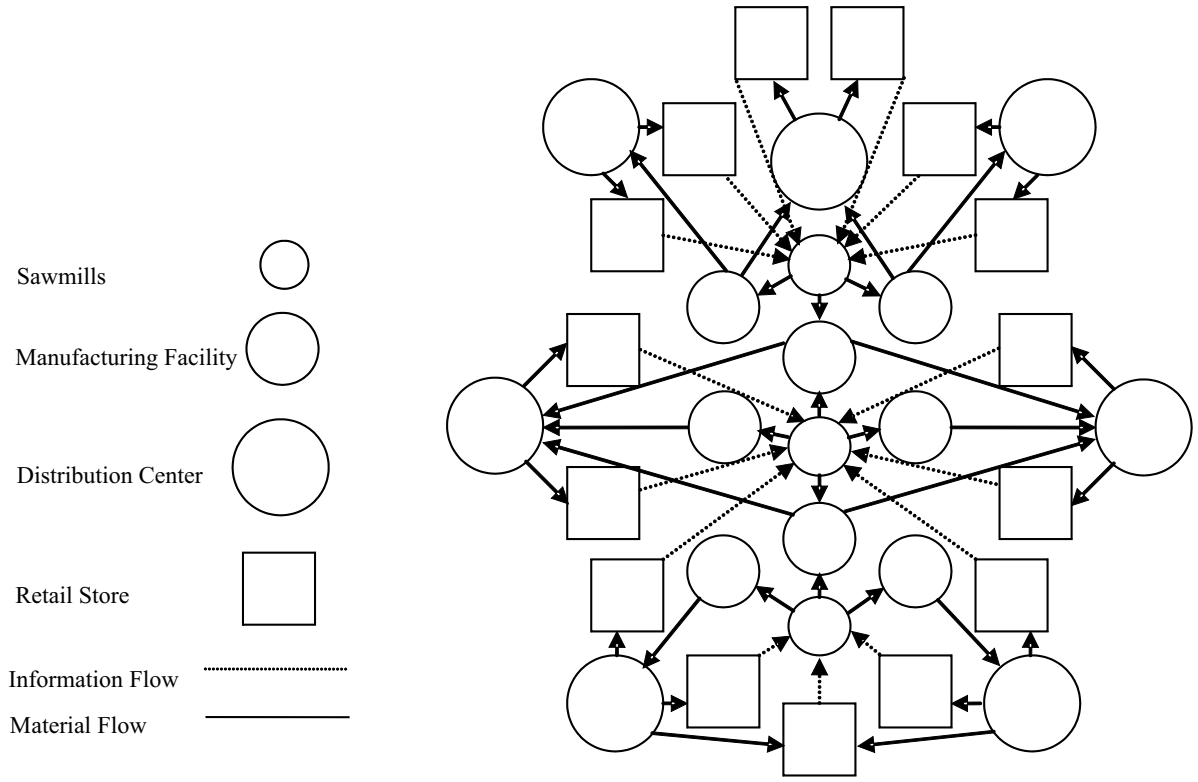
Ethan Allen Supply Chain Model 2006



To better understand how Ethan Allen underwent such a dramatic restructuring of their entire supply chain, we must look more closely at the process improvements the company made along the way. In each phase of this process, Ethan Allen either moved current production from a closed plant to existing plants or expanded their international sourcing capabilities. Amazingly, Ethan Allen also reduced product lead-times from manufacturing to delivery from 3-4 months to 6 weeks for 90% of their products. This is quite remarkable in such a short period of time. The company's current goal is to reduce this even further to 30 days.

To better understand how the company refocused and decentralized the supply chain, we will first consider a timeline of the company's changes between 1999 and 2007. Every year there were small changes made to the structure, which affected facilities, suppliers, and the overall distribution strategy. At the same time, if we consider the entire timeline, we can begin to see the underlying long-term strategies the company sees as the outcome of this reorganization. We think you'll notice some interesting trends.

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	Overview	Manufacturing and Distribution Operations	Retail Operations
1999		• 21 manufacturing facilities • 3 sawmills • 90% production in US	
2000	Purchased existing furniture manufacturing facility	• 18 manufacturing facilities • 3 sawmills	
2001	Moved to a less vertical supply chain	• 20 manufacturing facilities • 3 sawmills • 11 distribution centers • Closed a lumber operation	
2002	Continued with reorganization of manufacturing	• Consolidated 2 manufacturing facilities into one • 17 manufacturing facilities	
2003	Report increased productivity of 300% based on prior year changes	• 17 manufacturing facilities	• 283 retail stores • 141 owned by the company • 142 owned by independent retailers • Moved the 50% of store locations
2004	Ethan Allen Interiors named the second largest furniture retailer in the US	• 14 manufacturing facilities	• 282 retail stores • 141 owned by the company • 142 owned by independent retailers
2005	30% of production outsourced	• 12 manufacturing facilities	• 311 retail stores • 129 stores owned by the company • 183 owned by independent retailers • Operates 24 international stores
2006	Continued with reorganization of supply chain	• 9 manufacturing facilities • 278,700 million square meters of manufacturing space • 7 national distribution centers	

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The series of steps outlined above is nothing short of amazing. The company underwent significant changes in many areas, moved resources including machinery and people, increased capacity at current facilities, all with an entirely new framework in mind. At the same time, the company was able to refocus their supply chain to decrease lead times and dramatically improve customer satisfaction.

One part of the process that is not included above was Ethan Allen's decision to bring the logistics and warehousing in house. Prior to this massive restructuring, the company outsourced these functions. By taking control over these supply chain systems, the company was able to better align their operations and maintain oversight of day-to-day operations. It is estimated that this change yielded a reduction in costs of 50% attributed to these areas.

To better understand how Ethan Allen reorganized their supply chain and implemented this new model lets look at three different focus areas for the company. These three areas are 1. Consolidation of Manufacturing, 2. Balancing Supplier/Manufacturing Demand and 3. Decreasing Vertical Integration.

Consolidation of Manufacturing

This strategic change was created at the top by the executive management level. The leaders of Ethan Allen realized that in order to remain competitive an entire reorganization of the supply chain was necessary. Their ability to motivate and more importantly implement the necessary processes such as increasing capacity, improved facility and operational investments, all show the impressive effects strong collaboration can have. This transitional process took the dedication of thousands of employees who all understood that the operational design of the new supply chain would be better suited for the competitive environment of the industry.

The significant changes made may appear to some as not all that significant. These individuals will claim that Ethan Allen has relatively the same structure as before, just less manufacturing facilities and distribution centers. But consider just the reduction of one manufacturing facility, let alone three that took place in 2003. This means that the entire production requirements in this facility must now be move to other operational facilities. This could dramatically influence the service level, lead times, and cost structure of these facilities, but in fact these processes were being effectively managed as well. The company actually improved in all these areas, so the question becomes how?

The answer is modifying the existing model as a whole. If the production of 30,000 units is moved from one facility to another, there must be a system in place to account for this change, including suppliers, transportation logistics companies, and manufacturing staff in coordination with the facility that will increase production volume.

At the same time, Ethan Allen moved from a MRP system of supply replenishment, to a hybrid JIT system with some of their suppliers. As the company focused more on providing customized products to customers, this pull system created a draw for replenishment at the manufacturing level. The supply chain model changes allowed manufacturing the ability to carry less inventory, decrease lead times, and through investment creates greater flexibility in the manufacturing process.

By increasing the investments in capacity development, and collaborating with each of the stakeholder groups involved, Ethan Allen was able to overcome the hurdles of volume increases that in most cases would hinder a company's ability to operate for years potentially. For example, the company implemented complex software to increase the throughput of

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product in the manufacturing process. The new system identifies product requirements at the time of purchase that automatically feed to the cutting lathes to begin the process of cutting, fitting, and assembly. These notably aren't the only changes that led to the company's success, so we will continue by looking at another aspect, balancing supplier and manufacturing demand.

Balancing Supplier/Manufacturing Demand

The furniture market in the US has a fairly seasonal demand cycle that is recognizable. The peak time for home buying is the Spring when the weather improves and people come out from their winter hibernation. At the same time with the summer months approaching, many home improvement projects take place before the weather gets too hot. For the Furniture Industry, this means sales increases and manufacturing must be ready to meet customer demand.

Balancing supplier and manufacturing demand was a critical component to the changes Ethan Allen has undergone. What may be seen as a peak buying period can be smoothed if suppliers, manufacturers and the retail outlets work together. As manufacturing facilities invested to increase their capacity, a strategic shift took place by Ethan Allen to enable this collaboration. The company integrated the entire supply chain into process improvements, as well as sourcing more product from overseas lower cost manufacturing facilities to balance demand requirements.

In the case of their primary US market, overseas production facilities offered a consistent supply base in high volume, high quality, low cost production. By integrating these manufacturing facilities into the supply chain, Ethan Allen can predict higher demand products and fabrics during peak times to manufacturer in these offshore areas. With longer lead times, forecasting sufficient inventory levels ensures demand is satisfied and the lower production costs on these high volume products means the profit margins will be protected. At the same time, as the season starts, local production facilities can ramp up production to fulfill the demand of higher volume products, or switch over to lower volume and customized products if required. These facilities give the company greater flexibility. Although products manufactured locally may carry higher costs, the supply chain balances these effects with lower inventory, lead times, and shorter delivery distances based on the customer proximity to the distribution center. This balance is critical to protect profit margins.

At the same time, overseas production facilities focus on supplying locations that Ethan Allen is rapidly expanding with its entrance into China. This ensures the manufacturers have consistent demand and revenue streams, while seeing increased production levels when US stores require additional products. This system also allows Ethan Allen the ability to identify new supplier sourcing that may also integrate itself into the US operations making up 65% of current production levels.

Another piece of this supplier demand balancing is utilizing new sources of raw material procurement for use in operating facilities. As the supply chain for Ethan Allen has now become more global, sourcing based on price has allowed the company to again smooth demand spikes, this time in material needs. For example, with an increased availability of overseas lower cost materials, Ethan Allen can utilize their buying power to purchase higher volumes, fulfill demand requirements in overseas manufacturing operations and send additional materials to the US manufacturing facilities. This strategy again would be primarily concerned with high demand, frequently used materials

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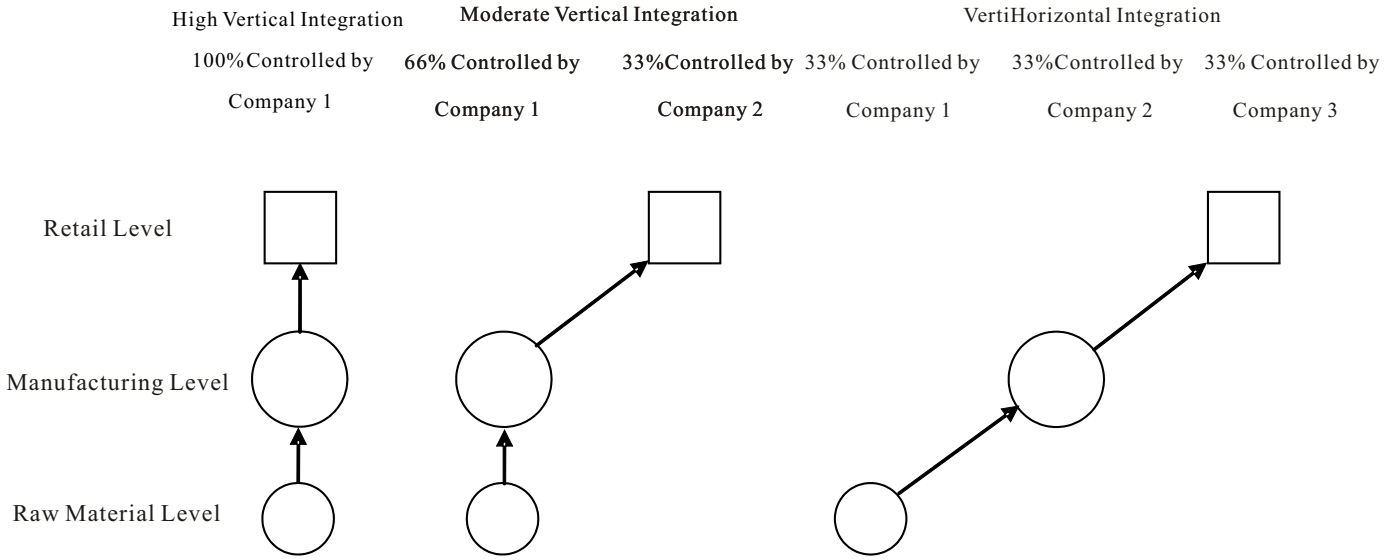
Material demand can then be offset by shorter lead time sourcing such as Canada if a higher quantity if required. At the same time, these local suppliers can satisfy demand for lower volume materials, such as wood ordered by a lower number of customers. Here Ethan Allen has used their new supply chain design to balance not only demand for manufacturing, but also sourcing demand. Supply chain costs are reduced in areas such as overseas inventory holding for example, and the efficiency gains of this new model go straight to improved profitability for the company overall.

Smoothing production and material levels to meet demand takes a strong collaborative effort, but helps to decrease the pressure put on manufacturers, which generally increases productivity. In order to rebalance this structure, the planning must include all parties, the retailer, manufacturer and suppliers, so that minimum requirements are understood and the pace of change is agreed upon. By working together to improve the supply chain, these systems can minimize dramatic cyclical changes and create a supply chains that are more manageable, effective, and profitable.

Decreasing Vertical Integration

To better understand this concept, we may need to first define what we mean by vertical integration. Vertical integration occurs when a company seeks to maintain control over multiple operations in a supply chain process. A company with a high level of vertical integration may maintain 100% of the total operations or close to this level. A company that is horizontally integrated will operate less of the supply chain, possibly only one step, or only a few. Here are couple basic examples to show the difference.



In last months K&A Review we looked at *The Benetton Group S.p.A.*, which has a strong vertically integrated supply chain, controlling much of the process from raw materials all the way to finished goods shipping. Ethan Allen provides a different model, where the company

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was once highly vertical, and now is becoming more horizontally integrated. The company has transitioned itself where multiple companies now handle manufacturing and an increasing number of independent retail owners exist.

We've looked extensively at the reduction in vertical integration as it relates to the manufacturing operations, although the retail operations are also important to consider. In the old model, Ethan Allen oversaw all retail operations, marketing, sales, inventory management, and in-store experience. With the growth of the independent retail owners, some control has been released by Ethan Allen to allow store operators to focus on the in-store experience and sales generation. As we discussed, inventory has nearly be eliminated. At the same time however, Ethan Allen has strengthened their oversight of logistics in the supply chain. Ethan Allen's new model has adapted to create an improved pull system, so the company's product control is now greatly improved. This system and model has worked well for Ethan Allen where in store volumes are now three to four times higher than they were in the past.

Another factor in the move to a moderate vertical integration model is the benefit from a greater involvement of external stakeholders such as suppliers and transportation companies. Investing in a three tier mezzanine storage unit for the company's Kentland, Indiana warehouse is just one example. When the company was considering suppliers, they looked primarily at costs and the ability of the partner company to work with them to provide an adequate solution. In the end this produced an improved capacity at the warehouse from 9,290 m^2 to 29,264 m^2 by creating a customized three tier mezzanine system. What is maybe most impressive however, is the process of installing the new mezzanine system did not influence the operations of the warehouse. Inventory levels were first lowered to make space for the new equipment. As the mezzanine system was being built, it was used to increase inventory levels to its holding capacity, and product could flow out to the customer when needed. This new system allowed the company to reduce the risk of stock outs, improve customer satisfaction, as well as reduce other warehousing resources in less centralized locations of the US. In order to not disrupt current operations though, collaboration was essential from suppliers, the warehouse itself, and the transportation companies involved.

The Furniture Industry is no doubt experiencing a dramatic shift from the old models of supply chain development. As global competitiveness increases, new markets grow around the world, and the cost of raw materials increase, companies will continue to compete not only on price, but in the ability to maintain low costs across the supply chain and in reducing lead times. We see that further consolidation is bound to take place, especially in markets such as China, and increased horizontal integration will create the models of tomorrow as supply chains become more expansive. These will be the key drivers and aspects to watch closely as the Furniture Industry evolves further.

The leaders of tomorrows Furniture Industry will build these systems into their current processes. In some cases such as Ethan Allen, the changes in the supply chain design will be dramatic to remain competitive. A strong emphasis on coordination will be needed to improve operational systems, capacity will closely looked at to remove unnecessary costs, and improvements in lead times through JIT systems will find their ways into a greater number of supply chains. Other developing supply chains however may require less adjustment, and rather improvements to current systems. This will focus the company on

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considering supply chain cost reductions and improved operational effectiveness, which may pave the way to industry advantages in the future.

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[1] Parker, Philip M., Ph.D., *The World Market for Furniture and Furniture Parts: A 2003 Global Trade Perspective*, The Icon Group, Ltd., San Diego:2003, p.14.