

# Fasten your seatbelts

Global Supply Chains ahead

Jonathan L.S. Byrnes

Designing and operating a global Supply Chain these days is like driving your car on a winding country road: the faster you go, the sooner you reach your destination ... unless you go too fast in the wrong places.

This edition of ABB Review includes a pair of articles exploring the yin and yang of globalization – the benefits and accompanying risks; “No risky business” (page 19) and “Shortest road to China” (page 28). The bottom line is that the economics of lean global Supply Chains make the benefits and risks inevitable, but it is the wise management of these risks that makes the difference between success and failure. Increasingly, the huge potential benefits, coupled with the complexity of risk management, make Supply Chain Management both more important and more challenging than ever before.



I recall visiting a large Mercedes plant in Germany about nine years ago. The plant was highly automated. My guide proudly explained how the robots worked and how fast a car could be made. It was very impressive.

I then asked about the cycle time that the customer would see if he or she ordered a car. The answer was that it took only a day or two to make the car, but three months to schedule its production. And another month to move it to the customer.

Today, production and supply sources are increasingly located in low-cost countries, often in Asia. This lengthens supply lines and cycle time, causing difficulties in forecasting the right quantities to produce, in responding to changes in the market, and in recovering from supply disruptions **1**.

At the same time, limited transportation capacity and congestion, particularly at U.S. West Coast ports, is creating more and more uncertainty in transit times, and less and less ability to respond to market changes.

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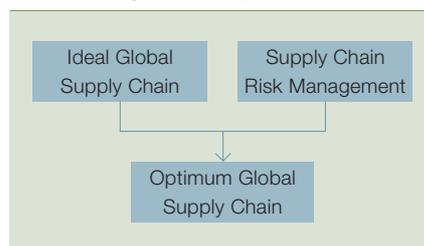
All this should be seen in the context of companies driving inventories from their Supply Chains<sup>1)</sup> as they seek to increase the velocity of their product flow – until their Supply Chains resemble pipelines in which all products are constantly in motion. Fast, lean and robust, how can you have it all?

The answer lies in the analogy at the beginning of this article. Asking the question, “How can you have it all?”, is like asking how you can drive the car faster and faster. The trick is to know when, where, and how to apply

the brakes. This is Supply Chain differentiation, doing the right things for the right products at the right times. Without it, global Supply Chains will fail.

Consider Zara, the Spanish fashion retailer. For any particular SKU (Stock Keeping Unit), Zara sources much of the product in Eastern Europe, where costs are low but lead times are high. At the same time, it sources a portion of the same product in Spain, where costs are high but cycle time is fast. Consider Zara’s demand graph in **2**: It looks like waves on the ocean. The company sources the waves (fluctuating portion of demand) locally, and the underlying ocean (stable portion of demand) in Eastern Europe. This is Supply Chain differentiation in action, knowing when, where, and how to source different elements of production.

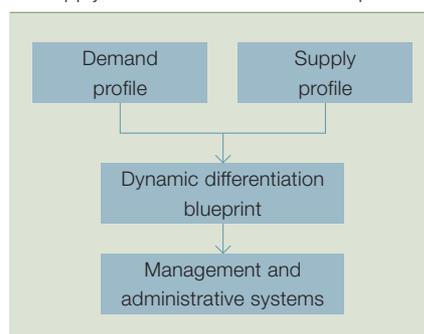
**1** Optimum global Supply Chain



**2** Zara Supply Chain



**3** Supply Chain differentiation master plan



Supply Chain differentiation can take place along several dimensions. For example, a company might source/produce most of its products locally early in the lifecycle when demand is uncertain and stockout costs are high, then shift production abroad later in the lifecycle when demand is known and stable, and move the bulk of production closer to the market again toward the end of the lifecycle when demand is again uncertain.

For companies with fixed production facilities, inventories can play a critical role. At some points, or for some elements of demand, inventories should be higher, while at other times, supply lines can look more like a flowing pipeline. Expediting capabilities serve the same function. Here, global Supply Chain configuration is dynamic and adapts to changing circumstances.

A lean global Supply Chain is a worthy goal, but the key to success lies in understanding the design and nature of the compromises needed to make it work. Again, paradoxically, running a lean global Supply Chain is analogous to driving fast: knowing when, where, and how to apply the brakes is the key to making the whole trip go faster.

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Dell utilizes Supply Chain differentiation in another way. It lies at the heart of Dell’s powerful business model. As most people know, Dell produces products using a make-to-order system, yet the company has a lead time of several months for key components. How does it do it?

The answer again is Supply Chain differentiation. While Zara focuses its differentiation on the supply side,

#### Footnote

<sup>1)</sup> see glossary on page 74.

## Manufacturing trends



Dell does the same on the demand side. Dell calls this “sell what you make,” or demand management. This occurs on two levels.

First, in weekly meetings, the heads of Sales, Manufacturing, and Purchasing get together to balance supply and demand. If a particular product has more demand than the supply of inbound components can support, they can expedite additional components at a significant additional cost. Alternatively, they can work to shift demand to other products that have an adequate supply of components.

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Second, every customer service representative has visibility into what products can be made every day, and have incentives to steer customer purchases toward these products. They can do this by offering deals on these products, or by persuading the customers that these particular products are more appropriate purchases. Without

this two-step process, Dell’s ultra-lean Supply Chain simply would not work.

How can a company use the principles of Supply Chain differentiation to design and operate a dynamic, lean global Supply Chain? The most important first step is to develop a Supply Chain Differentiation master plan. This plan **3** should have four components.

- Demand profile. This is a disaggregated analysis of demand that identifies which portions are stable, which are fluctuating, how this changes over time, and what the value is of meeting the fluctuations.
- Supply profile. This is a disaggregated analysis of supply that identifies what suppliers, plants, and transporters can do, how flexible

they are, and the cost and availability of volume changes.

- Dynamic differentiation blueprint. Based on the demand profile and supply profile, this specifies in advance how supply and demand can be managed and shifted over time in a dynamic, well-coordinated fashion.
- Management and administrative systems. This component of the Master Plan lays out how planning, coordination, information links, metrics, and compensation should be structured to accommodate dynamic Supply Chain differentiation (eg, if expediting costs go up, budgets need to be adjusted).

Developing a Supply Chain master plan is the key to unlocking the potential value in lean global Supply Chains. Without a Master Plan, even the best-engineered efforts may not perform as expected.

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