



Stephen DeAngelis” Responds to Ravi Anupindi’s Case Study on Boeing’s Dreamliner

I read with interest a short case study about the Boeing 787 Dreamliner [["Case study: Boeing's Dreamliner,"](#) by Ravi Anupindi, *Financial Times*, 10 October 2011]. What particularly caught my attention was Anupindi's description of one of the reasons that the Dreamliner encountered significant construction delays. "One reason for the delay," he wrote, "was an industry-wide shortage of aerospace fasteners, the nuts, bolts, rivets and washers that hold aircraft together. Although fasteners comprise only about 3 per cent of the cost of an aircraft, they became a serious supply-chain issue." That line reminded me of one of the "mistakes" that Bindiya Vakil and Hannah Kain claim is made by too many companies: "Quantifying everything by spend and not by impact." [["Five Mistakes Companies Make When Trying to Effectively Manage Supply Chain Risk,"](#) *SupplyChainBrain*, 25 July 2011] They continue, "In order to ship a product, every single part needs to be present – this is the fundamental challenge for supply chain practitioners." Anupindi obviously agrees since he concluded, "A lack of attention to commodity items such as fasteners can put a company at risk." The "missing part" always has the greatest impact. Vakil and Kain conclude, "The fundamental challenge with risk management today is the lack of visibility across global supply chain dependencies."

Visibility remains one of the hottest topics in supply chain management literature and was a key objective in Boeing's development of the FPM system using their Exostar Supply Chain Platform. As Anupindi documented in his case study, Boeing's experience related to visibility in both directions and the establishment of clear value-add to all supply chain players. This was accomplished to some extent with the Consumption Based Ordering (CBO) visibility but it was obviously not enough to address all of the complexities associated with the new 787 design requirements and supply chain dependencies. Although lack of visibility is a widely recognized supply chain challenge, achieving it is difficult – a fact to which Boeing is probably willing to attest. As CEO of a cloud-based, supply chain, solution-as-a-service (SaaS) firm specializing in the application of artificial intelligence and a rules-based ontology to solve complex business problems, I'm well aware of the challenges involved. I'm also aware that the reason that solutions have been difficult to implement is that, until now, the challenge has been too big handle. We are now in an era of so-called "big data" and, as a result, companies, including mine, are offering "big data" solutions for the supply chain visibility challenge. The Boeing FPM system, a collection of large supply chain related database systems, evaluates mountains of data and projects potential demand/supply disparities – a comprehensive, but structured, data environment. That approach is ideal for some visibility challenges; but, it leaves the unstructured data to be dealt with by departments across the supply chain using various communications outside the FPM system's analytics. The "missing part" of the challenge described here, requires a system that digs deeper in order to understand supply chain relationships hidden in masses of structured **and unstructured data**.

Understanding those relationships is essential for a "big data" system to intelligently alert decision makers to potential problems and assist them in making more informed decisions. We sit on the cusp of a new era in which globalized supply chains will require systems that **"Sense, Think/Learn, and Act"**. This is difficult and costly to do with just relational database systems. The good news is, as new technologies and ever better algorithms emerge, I believe we will be able to put the "missing fastener" era behind us.
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