Three Reasons Demand Planning Has Finally Come of Age

There's nothing new about the idea of demand planning. Phoenician wine traders, 2,000 years ago, were savvy about staying ahead of fluctuations in demand via a network of merchant informants, and planned supply accordingly. The advent of vastly expanded computer data-processing power, along with the connectivity of the World Wide Web, has been offering for 20 years or more the attractive proposition of using technology to track and predict demand for goods more accurately. However, with a corresponding rise in the complexity and geographical spread of most supply chains, along with the need for speed in bringing new products to market, supply chain managers have struggled to harness the demand-planning capabilities modern technology offers. Arguably, that is now changing, and demand planning technology has finally come of age.

There are three main reasons we're about to enter a new, mature era of demand planning technology. Firstly, the relationship between technology and its users has improved (because of changes on both sides). Secondly, the barriers to giving it a try in the first place have significantly reduced. Thirdly, artificial intelligence means the potential capabilities of demand-planning software are now almost limitless.

User experience is better, users are more experienced

One of the barriers standing in the way of superlative demand planning has been plain tech-terror on the part of users. One supply chain commentator, Lora Cecere, summed it up perfectly in 2011, observing that solutions providers in this space had "spent thirty years developing forecasting processes that are largely not used or trusted by the organizations that they serve." The software industry in general is rife with installed but unused functionality – it even has a name: cruft. But supply chain management, which tends to skew towards the upper end of the age spectrum, and has traditionally been considered a low-tech type business, has suffered especially from a lack of willingness to master sophisticated computer applications.

Because of plain demographics, that is beginning to shift, with the generation currently rising to middle-management level being so-called "Web native"; people who learned on computers at school, and accessed the internet from home since they can remember. Unquestionably, users are more confident around drop-down menus and cloud-based information platforms. But it's not all about the March of the Millennials; computer software, in demand planning as everywhere, has gotten easier to use. About ten years ago, software companies started publicly discussing the issue of UX (user experience), and identified the need to focus on, and improve it. Certainly, technological advances such as touch-screens and mobile computing capabilities have made it easier to use software solutions, but it's also a matter of software companies focusing on what it's actually like to use their product. In years gone by, there was a tendency to formulate what seemed like the most useful technology and then take a "push" approach to selling it

based on what it could do, rather than exactly how it could do it. The software industry responded to the general suspicion and fear demonstrated by their prospective and current customers by adopting a "black box" approach – presenting each solution as a device whose inner workings were neither visible nor comprehensible to mere mortals. You put data in one end; you got something useful out of the other.

In many ways, this was justified. Most people don't need to know what goes on inside an internal combustion engine; they simply drive their cars. Then things changed, and Forbes declared, also in 2011, that, "regardless of industry, your company is now a software company, and pretending that it's not spells serious peril." Suddenly, to be competitive in the modern marketplace, everyone needed to know what was going on under the hood of the software car. Solutions vendors have responded by making the software genuinely easier to use. "The biggest innovations have come in the way the information is presented," says Karin Bursa, Executive Vice President at Logility. "The way the analytics are applied, the way the alert systems work; they're all much clearer and simpler." Bursa argues a better UX allows a company to get better value out of every human resource, and every speck of talent available. "This way every planner works at the same level as your very best planner does. The right solution automates the things that can be automated and focuses resources on where they are needed to make decisions, trade-offs, and so on."

Noha Tohamy, Vice President and Distinguished Analyst, Supply Chain Research, at analyst firm Gartner, welcomes the improvements. "Some demand planning technologies I see today have mobile capabilities, so you can use them on a smartphone or iPad and get insights if there's an exception or misalign that requires your action on the go," she explains. "I think that helps enormously with how the user interacts with the system. Also, many [demand planning programs] have collaborative capabilities, so you can work with a team virtually, for example, in a meetup or resolution room. In that way, an individual in the field can collaborate with other team members, escalate a problem to other team members, join forces to find a possible resolution, and generally keep track of the human judgement going in to any decision. In demand planning, this is particularly critical, because there's a lot of modeling and forecasting going on. But it's also about the wisdom of the whole team – allowing for collaboration and consensus."

However, Tohamy warns the battle with manual demand planning is not yet entirely won. "Excel is still alive and well and out there," she says.

There's less resistance from internal IT

One of the barriers to adoption of expert demand planning software





in the past has been the difficulty in bringing an outside vendor's software into an organization with an internal IT department. Going back 20 years or so, most medium-sized and large companies felt their supply chain operations were so quirky and peculiar, there was no way an "off-the-shelf" software package could cover their needs. So they went out and hired a big IT department to build most IT in-house. That department usually succumbed to the "black box" approach (see above), not only because it was relatively easier to avoid having to explain every complex aspect of what they were doing and how, but because if management couldn't understand what they did, they were less likely to get fired. Now, software vendors are far better at demonstrating that they offer "best-of-breed" solutions that cater to supply chain management problems common to pretty much all operations, with the ability to quickly and easily customize the software to deal with the small percentage of unique operational requirements. Further, cloud computing has led to low-cost maintenance and upgrades (and minimal involvement from internal IT). At first, the move towards external IT services was met with huge hostility by entrenched internal IT departments, but the self-evident benefits (particularly the cost-savings) have won out for now. Further, it has become clear that there remains plenty of work for a reasonably-sized IT department in most companies, since every company is now a software company.

Tohamy says the pendulum has swung back and forth between all-internal and all-off-the-shelf IT over the last 20 years, but that there's now a sense of maturity in finding a happy medium between the two. "I see companies that are doing segmentation of what their needs are. For example, demand forecasting might use some tried and true capabilities of off-the-shelf software that makes a good fit and is scalable," she explains. "But there can be an environment where there's high product mix and low volume, or new products introduced on a regular basis, and there it might make a lot of sense to develop in-house capabilities that are over and above what's commercially available." Tohamy says that assumes you have a good skill-set available in-house, but the complementary approach between some in-house development and some off-the-shelf commercial solutions makes a lot of sense.

Artificial Intelligence is changing everything

One of the most exciting developments in recent years is the rise of advanced analytics, and its potential role in demand planning. "There's a lot of talk about Artificial Intelligence (AI) and machine learning and, for demand planning and demand forecasting, they're going to make very significant improvements, because of the technology's ability to learn from its own experience," explains Tohamy. "We used to rely on historical data

for forecasting, but machine learning means the software can train itself based on the data available, and find out in a dynamic way what is the most leading indicator for the forecast at any given time." One day, says Tohamy, it might be the weather in the northeast affecting ice cream sales; the next it might be a promotional event at a retailer. "AI will allow you to continually mine and analyze the data without an individual intervening and switching the algorithm manually. Marry that with big data and unstructured data and this really has the potential to make a significant difference to how we're forecasting demand, and demand planning in general," Tohamy says.

Tohamy warns that the capabilities of AI-powered demand planning will, of course, be only as good as the data it's crunching. Most companies, she observes, are still struggling with getting good-quality, timely data, and are challenged by harmonization of data across stakeholder systems. The new possibilities shine a light on the need for good data management and harmonization. However, she advises supply chain managers not to get too hung up on perfect data; favoring "good enough". With reasonably clean and accurate starting data, you can get into a virtual cycle where the analytic techniques lead you back to problems with data-gathering, making it easier to fix, leading to better data, and so on. "As companies work in a more extended supply chain, where it's not just your data but your trading partners' data, some get paralyzed by how daunting this is," she observes. "Start where you can, and then the analytics will actually help you improve the quality of the data. Start with good enough."

Stay alert

Whatever the improvements in the demand planning technology space, it's wise to keep a keen eye on the deployment of what you're running. "There's a huge gap in what application solutions can do and the skill-set of planners able to leverage the advanced capabilities," said Bursa. "You can give somebody a great solution or tool, but if you don't train them and invest in refreshing their training, that's a waste of investment. So training during initial implementation is very important, but it's equally important too to run refreshers on a regular basis as your team changes, new market conditions and business opportunities arise and new features become available in your solutions."

