

Q&A

PATRIK LATIN

A Supply Chain Predictive Analytics Conversation



**“The way things
are evolving,
predictive
analytics will be
a cornerstone in
order to do supply
chain modeling
the best way
possible.”**

PATRIK LATIN

There is no doubt that talk of predictive analytics has the ear of supply chain executives in nearly any industry. The buzz is loud, promises are lofty, and the potential impact seems limitless.

But for many executives, getting there is like climbing up a down escalator with oversized luggage in both hands. It seems possible, but is it worth the climb?

During a recent conversation with Patrik Latin, I had the opportunity to get his perspective as a senior pharmaceutical executive about what supply chain predictive analytics means for the future of this industry. I am so pleased that Patrik has permitted us to share his vision for the industry with you. Over the course of this e-book, we will cover the background of predictive analytics, why it's important and how to get started incorporating it.

UNDERSTANDING ITS EVOLUTION

SEBASTIAN: What is behind the “buzz” of predictive analytics? Is there real value there for supply chain executives at pharmaceutical companies? And, with so many buzz words out there, how do you define and differentiate across descriptive, predictive, and prescriptive analytics?

PATRIK: Beyond the buzz word, there is no doubt there is real value from predictive analytics and not only throughout the supply chain but it also has the potential to increase total value for the top and bottom line for the company. Predictive models will allow us to improve our decision-making throughout the supply chain but the results will be seen in growth and cost-reductions. In terms of the different types of analytics, consider these definitions:

- Descriptive analytics is reporting, or analyzing what happened in the past
- Predictive analytics is alerting or analyzing what could happen
- Prescriptive analytics gives you the best option given a current situation

Each of these types of analytics still has a role in pharmaceutical companies. But, predictive analytics will force us to consider the future, making assumptions, and take the best decision based on the outcome of these analytics. Thanks to the massive increase in valuable data access and computing power we are now able to put much more power into the analysis and make better decisions.

SEBASTIAN: Thanks for providing your perspective on the different type of analytics. Let's talk more about your comment on how it can impact the top and bottom line. How does using predictive analytics differentiate your company from the competition and help increase shareholder value?

PATRIK: Well overall this is improving the decision-making process in the various disciplines, resulting in faster acting to changes, higher efficiencies and productivity, to even postponing capital expenditures, so the value increase is clear to me.

In one example, at one of our plants, in one of our lines, we applied predictive analytics, and increased capacities, which significantly reduced our cost per dose; we achieved 17% cost per unit reduction on the first line; for other lines we combined, we saved about \$50M in only year one. We not only gained productivity, throughput, and reduced cost per unit, but it prevented us from buying additional capacity which we were about to do. So, if you consider the financial component, we postponed cost of capital (using 8% internal rate of return or hurdle rate of 12%) on money we freed up by not installing unnecessary capacity.

SEBASTIAN: That's a great example of how predictive analytics is impacting companies in a real way! We also see at our clients that there's a link between predictive analytics and serialization work. What's the intersection between the two? With the abundance of many more data points, how can serialization help predictive analytics initiatives?

PATRIK: With serialization, we can identify where all our products are at all times, leading



to a new level of inventory accuracy, even across legal entities and in some cases with multiple stakeholders, including patients, healthcare providers, wholesale distributors, API manufacturers, CMOs, etc. This real transparency of our products will be very revealing and this data can be used to alert to potential inventory scenarios. Most pharmaceutical companies have invested a lot of capital in complying with serialization globally; when that data is leveraged with predictive analytics, there is a different use case and value justification outside of regulatory compliance.

SEBASTIAN: Are there any current companies using predictive analytics to great success? Are there other industries that are using it well that could be sources of lessons learned? What's the tangible value?

PATRIK: I feel that we have great signs of progress and advancement in this field in the pharmaceutical companies where I have worked. This isn't an easy journey, but it is a very rewarding one. But, there is a lot still to be done. Pharmaceutical companies should be incorporating advanced predictive models into critical functions the way financial organizations do to prevent fraud and theft. Retail companies have invested heavily and connected different sets of data, structured and unstructured, to

predict purchasing behavior, and increase share of wallet of the consumers. The life sciences industry is lagging behind other industries but this presents an opportunity for a first mover advantage to the right company.

WHAT'S IN IT FOR ME?

SEBASTIAN: What motivation do supply chain executives have to pay attention to predictive analytics? What's in it for them? What are the key benefits to the supply chain in enacting a predictive analytics capability?

PATRIK: In the past two decades, my experience has been that too often the supply chain function's activities were reduced to just firefighting and extreme reactive behavior, often promoted by the executive teams due to a quarterly mindset. This ends up creating inefficiencies and imbalance between service, inventory and costs, and even further down the line, negatively impacting long term strategy. With predictive analytics, we are entering a new era whereby the supply chain function can proactively show potential bottlenecks arising, which brings S&OP discussions to a totally different level throughout the organization.

SEBASTIAN: That's a great perspective. We've seen with our clients that it can open up discussion related to capital investment, install



capacity, partnerships for sourcing, risk analysis related to M&A, political unrest and beyond. Let's talk more about the organization as a whole. Outside of cutting cost and managing inventory, what are the benefits to using predictive analytics for the organization outside of direct benefits to supply chain operations?

PATRIK: Overall we are talking about better decision making for the company. This can happen in many ways. On the one hand, you get faster predictability in changing patterns, which leads to better customer service. On the other hand, predictive analytics can help decide which demand scenario will be best to base the capacity and production on rather than just choosing the most efficient and productive production plans. At this point we have not fully explored the full potential yet, I am convinced of that.

SEBASTIAN: Seasonality with something like flu vaccines comes to mind, since early measurements on trends and models don't always suffice. With predictive analytics, you unleash what-if analysis on forecast scenarios, allowing trigger points that enact alternative

plans. Then, you can go to S&OP with real data and less gut instinct. Extending this example beyond the four walls of the pharma company, we would ultimately have fewer shortages in markets that need vaccines the most. Going beyond the four walls of a company, how does this differentiate and help increase shareholder value?

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PATRIK: Overall, this is improving the decision making process in various disciplines, resulting in faster acting to changes, higher efficiencies and productivity, to even postponing capital expenditures, so the value increase is clear to me.

SEBASTIAN: While we're on the topic of upstream, what benefits to the patient would predictive analytics provide?

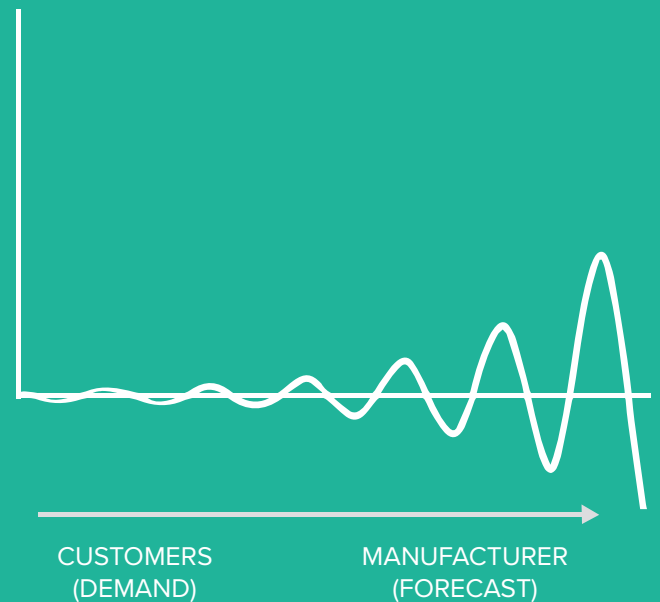
PATRIK: For the patient, if we consider the most optimized situation, we experience full availability of the product range to the customer, and therefore the cost reductions can be calculated all the way up into price reductions for the patient. As for the pharmacies and hospitals, I would argue they enjoy the same benefits as the patient. Specifically though,

they could expect greater fulfillment levels, lower inventory cost across the chain, and higher inventory turns, reducing cost of capital. Distributors experience all the same benefits we already mentioned. But there's an additional benefit, as distributors are the ones working most closely with pharmaceutical companies. Predictive analytics can lead to a more desirable partnership approach by providing better cooperation and value-shared decision making.

SEBASTIAN: Those are all very tangible benefits. One example that comes to mind is that when McKesson and CVS signed their purchasing agreements, pharmaceutical companies felt a sudden decline in demand abruptly. But we all should have been able to predict it. Both companies were holding too much inventory individually before the merger, so it shouldn't have been a surprise. The data was there, and with predictive analytics it could have been avoided. Let's shift to discussing downstream. How about the CMOs or the API manufacturers?



THE BULLWHIP EFFECT



PATRIK: Obviously what counts for upstream also works downstream. We have been facing way too many irregular demand patterns that lead to incredible short delivery lead-time requests. As a result, our CMOs and other component manufacturers were driven into hectic behavior, which in turn drove our costs up. This classic example of the well-known bullwhip effect could be significantly improved when predictive analytics are applied correctly.

SEBASTIAN: When we started using predictive analytics with CMOs or downstream with our own API manufacturers, it helped in creating long term transparency. But it was a double-edged sword. Because it gave a lot of visibility, it uncovered hidden facts – and where the water gets lower, the iceberg gets bigger.

PATRIK: Exactly. And we can extend this globally to trends such as growing regulations and value-based care. Really, any trend can be brought into your predictive analytics, when done right of course, and will give you better decision making options. Ultimately, it will significantly increase speed of reaction time to outside influences.

EXECUTING FROM YOUR CURRENT STATE

SEBASTIAN: We've talked about what it is and why it matters but at the end of the day, how is it that companies can create exponential, differentiated, and tangible value through predictive analytics in their supply chain?

PATRIK: A lot of variables play a role in the success of a company using predictive analysis (such as identifying the data that matters, the processes and systems to be used, etc.) but the biggest factor for success will be the people and the alignment between the various departments in an organization, all the way to the top of the decision-making tree. Having all the above defined, starting with organizational alignment, will give you the right basis for a successful implementation.

SEBASTIAN: Well, once you do have that alignment and that structure, it can't be all that easy. What are some of the major obstacles to leveraging these analytics within supply chain?

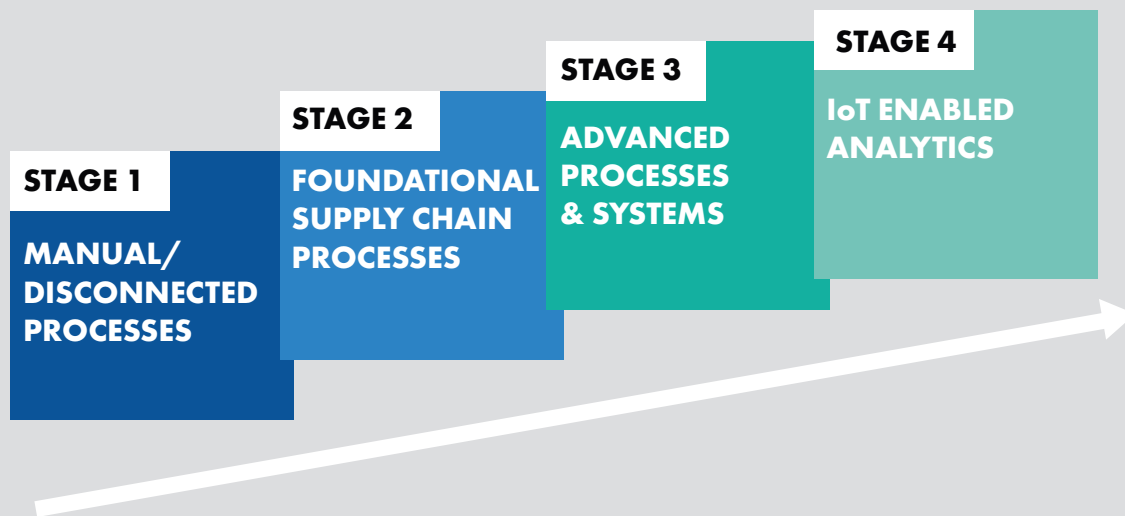
PATRIK: The major obstacles I can think of are inaccurate master data, weak systems or systems structure, lack in trust of data, and people. The people factor is particularly tough as it is a combination of not having the right talent and a lack of comfort with a new approach from the executive levels. Companies are used to reacting rather than deciding proactively, for which the latter requires a totally different decision-making process.

SEBASTIAN: Let's explore that some more. From an outsider's point of view, it might seem like the technological side would be where most of the challenges lie but does success really come down to organizational alignment? What are some of the common organizational challenges you have seen in embracing predictive analytics?

PATRIK: In the pharmaceutical world, the supply chain function has not reached the maturity level we see in fast-moving consumer goods or other lower margin industries, where the value of a professional supply chain has been appreciated



SUPPLY CHAIN MATURITY



already for a few decades. So, for the supply chain function to come up with rather cutting edge analytics and persuade the rest of the company is a tough task. It's too big of a jump to take for the rest of the organization. You see often that it takes off in smaller organizations, or a greenfield operation that is growing fast, or when there is a change in leadership with a vision to embrace analytics more than before.

SEBASTIAN: Let's go back and expand more on something you mentioned – data. Part of the power of predictive analytics, what really makes it work, are the mountains of data that feed into and inform it. In today's world, that data volume is increasing, not just in depth but in breadth, to include new data sets. So how can your supply chain build in the ability to use new data? As new data sets become available, how can they ensure seamless integration with their existing analytics?

PATRIK: Integrating new data sets will depend a lot on the systems that support you. Obviously

the more flexible your system is, the better and easier it will be. It also depends whether you want just manual final analytics (often only done once per week or per month) or whether a real-time update of the data is needed. These requirements, again company- dependent, will determine the need and magnitude of your investment in systems.

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SEBASTIAN: Speaking of new data, have you been successful in adding financial factors (such as market share, margin, total cost to serve) into predictive analytics? And if so, why do you think that's relevant?

PATRIK: Including financial data is crucial to optimizing decision making, but it is challenging to get these data to the level of granularity you need to

make the analysis meaningful. At my previous company, we were using a single instance ERP globally so all of the data was in the same environment and should have been available but we still struggled to leverage that data. But, once available and embedded in the dashboards we

created, it became invaluable in our decision-making process. Financial data put a different and important variable into the equation which can help you to perform a better segmentation of your portfolio and therefore allow more focused actions and decisions.

SEBASTIAN: Despite the amazing potential, as with any new practice, there is balance of art and science. How much patience is required in making predictive models more precise and trusted by decision makers?

PATRIK: A lot of patience, endurance, and persistence is needed. One of the biggest pitfalls is the aim for perfection. Sometimes we want our predictive models to be perfect, and there are diminishing returns or astronomical exponential costs associated to get a model from 85% accurate to 99% accurate; and in an effort towards perfection predictive analytics efforts are abandoned. In my experience an 85% model is much better than firefighting and trusting emotions or giant Excel and/or Access databases alone.

EXECUTING FROM YOUR CURRENT STATE

PATRIK: We are still far away from seeing the right level of acceptance at the higher levels in the corporations because the appetite nor understanding is there yet, mostly because it makes people uneasy to have this kind of knowledge. Additionally, predictive information is typically more difficult to base decisions off of due to its future oriented nature, as opposed to making intuitive decisions based on facts from the past. Although the intuitive decision making is more comfortable, it often leads to reactive firefighting mode.

Having said that, we should be able to follow models advanced by financial organizations who use predictive analytics to prevent fraud and theft, and retail companies who have invested heavily in connecting different sets of data, both structured and unstructured to predict purchasing behavior, and increase share of wallet of the consumers.

SEBASTIAN: You've given us a lot to think about as we continue working with our clients to leverage practices such as predictive analytics to drive greater value and improve efficiency for their business. As anyone could gather, it's clearly not a simple undertaking but one that is most definitely worthwhile with the proper resources, structures, and team in place.



About the Author

Sebastian Valencia is a partner with Clarkston with over ten years of management consulting and supply chain experience.

He has extensive experience in managing large scale global project implementations, supply chain strategy and distribution redesign, outsourcing through third party logistic providers, mergers and acquisitions, vendor selection, pricing and negotiation of supply chain contracts, and distribution network optimization.

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