Predictive Analytics in Supply Chain

Operational Everest

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For approximately 25 years, Predictive Analytics has been the foremost strategy for planning and executing in the supply chain industry. The Predictive model was the gold standard for creating models around sales, labor, transport and facility requirements. This strategy was more than suitable at the time since major retailers all controlled the sales model for their clients. They developed marketing programs to create peaks and valleys within product lines and controlled the number of items available for purchase. This enabled them to create the retail experience and control the supply chain based on their parameters.

Today the market has drastically changed based on the buying habits of consumers. With so many online retailers, suppliers are forced to react to purchasing trends in real time, while trying to manage an ever-expanding range of items in their marketplace Because of this, Predictive Analytics has now become obsolete, in essence a day late and a dollar short. Hence the need for Prescriptive Analytics was born.

It's important to understand the actual difference between Predictive versus Prescriptive Analytics and why the latter has now become the gold standard in other markets such as finance and healthcare. Prescriptive Analytics can be defined as "**a form of advanced analytics which examines data or content to answer the question "What should be done?" or "What can we do to make _____ happen?", and is characterized by techniques such as graph analysis, simulation, complex event processing, neural networks, and recommendation engines**". *

Essentially, Prescriptive Analytics takes the best of the predictive numbers and then applies the *what is happening now* aspect to create outcomes and behaviors rather than just reports or actionable decisions. What we are seeing in the market today are companies that advertise Prescriptive Analytics and/or Artificial Intelligence in their solutions because these are popular industry buzz words.

The question is with the lack of real time data, isn't this still just providing a different set of predictive numbers?

Let's explore this model based on the data:

To enable Prescriptive Analytics, we need to address the question of *what is happening now* in our supply chain. We need a place in the market where we have access to the information that provides us with what is happening now or what is going to happen in the next few hours, much like an hourly weather forecast.

For the most part, having this information readily available to the majority of people in an organization has been elusive. Typically only a few at the top of the market such as the multinational retailers or courier companies, has had access to such information.

The barriers to access such information are many, based on the sheer number of partners involved in the process of managing information. The large multinational companies have a closed network of technology, so all partners or employees are on the same platform making it easier to plan and execute in virtually real time. The other 98% of the marketplace struggles with this, and here's why:
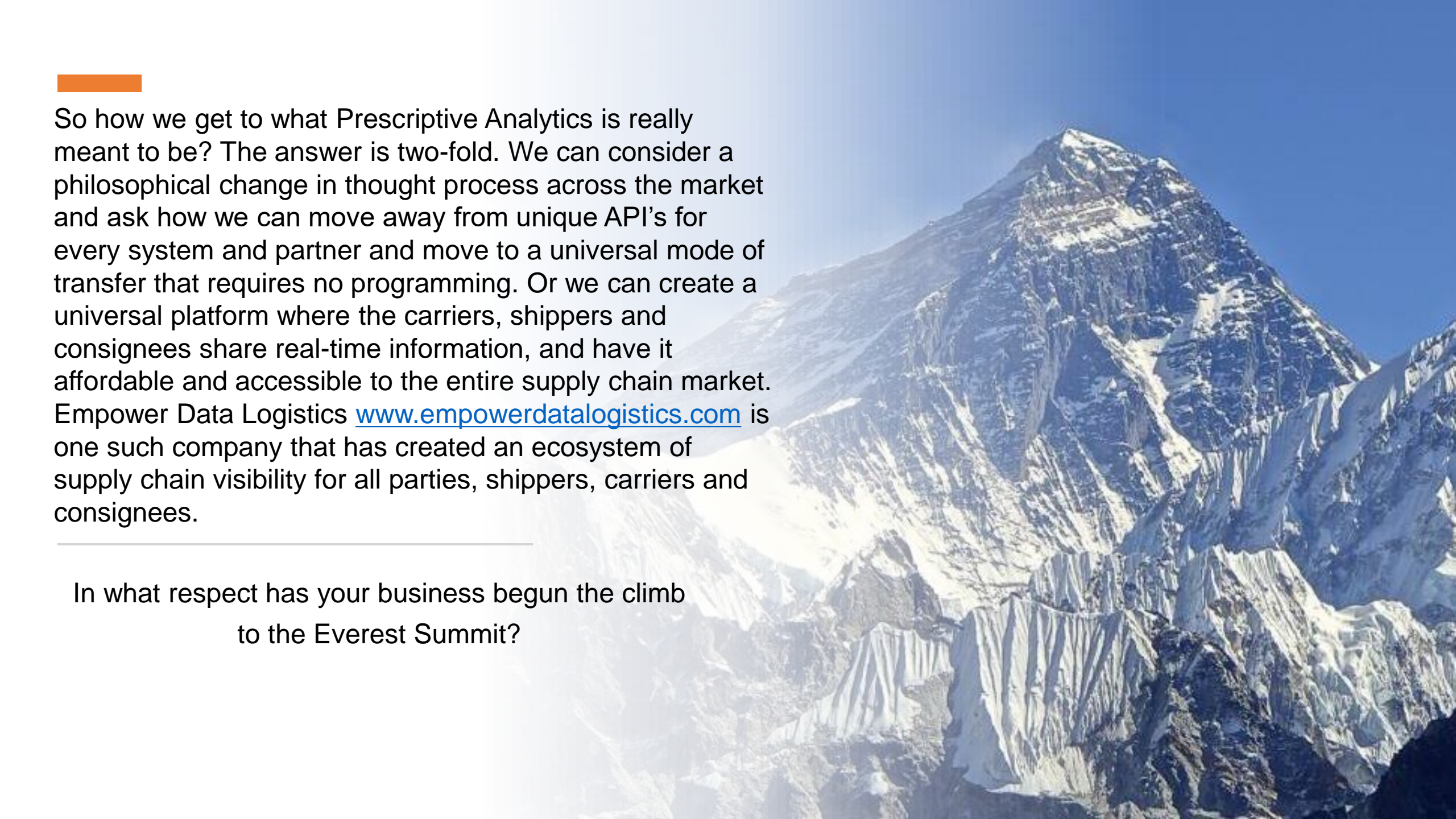
The numbers speak for themselves - there are approximately over 200 TMS, 300 WMS and 400 ERP/Accounting solutions in North America alone. There are about 1,000,000 *for hire* trucking companies of which approximately only 10% have a back-office infrastructure to pass data back and forth. Add to that an umbrella of over 25 supply chain visibility platforms and we approach nearly *7.5 trillion* possible connections in the market (Application Programming Interface, commonly referred to as API's) which are unique to each partner connection. These API's run faster and are more secure, but also extend the number of unique connections exponentially in the marketplace. Companies that have older technology backbones or none at all, or are devoid of inhouse support are typically excluded from the connection and rely on CSV files for periodic passing of data.

If the premise of Prescriptive Analytics is to know what is happening now, for example ***Will my partner arrive to pick up my load?*** or ***Is my load going to get to the consignee on time?***, then we are making decisions using prescriptive models. However, if statistics show that less than 50% of partners are connected with their suppliers then as an industry we are still far away from getting to the Prescriptive Analytics promised land.

To further isolate the enormous number of small to mid-sized companies, the large technology organizations continually pitch to their clients that they do not do business with companies that cannot easily connect into their solution as a way of eliminating hurdles. This threat to the 900,000+ *for hire* transport companies is not only a financial problem for those small businesses but has the potential to crush the very foundation of the North American supply chain market. Everyone knows that a major factor in stabilizing the backbone of the market is by supporting these carriers and drivers to be productive and viable, maintaining the continuous flow of freight and last mile deliveries in todays supply chain structure. This is imperative.

So how we get to what Prescriptive Analytics is really meant to be? The answer is two-fold. We can consider a philosophical change in thought process across the market and ask how we can move away from unique API's for every system and partner and move to a universal mode of transfer that requires no programming. Or we can create a universal platform where the carriers, shippers and consignees share real-time information, and have it affordable and accessible to the entire supply chain market. Empower Data Logistics www.empowerdatalogistics.com is one such company that has created an ecosystem of supply chain visibility for all parties, shippers, carriers and consignees.

In what respect has your business begun the climb
to the Everest Summit?