

WHITE PAPER:

Will Anticipatory Shipping Throw a Wrench in Logistics Management

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GTG Technology Group, LLC helps to build software to manage global transportation management systems (TMS) for all sizes of intermodal and drayage transportation companies. GTG is dedicated to providing TMS solutions designed to provide end-to-end visibility and connectivity. GTG's software was engineered to help businesses in the transportation industry overcome challenges faster, cheaper and more efficiently.

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Introduction

Patented by Amazon late last year, anticipatory shipping is throwing a wrench in traditional logistics. With a goal to pre-emptively send products to an area likely to receive an order for those specific products, Amazon hopes to change ecommerce as we know it. If your company is heavily involved in shipping, logistics, or transportation, it's important that you understand Amazon's anticipatory shipping patent, its potential implications, and logistical issues arising as a result. It's possible that Amazon could once again be paving the way for the industry's future.

Changes are Coming in Shipping & Logistics

It's frequently said that there are three C's in the business world: customers, competition, and change.¹ While customers may be difficult to satisfy and the competition can be cutthroat, it's usually the third C that is most challenging. That's because change is rarely enjoyed - especially when things are going so well.

Regardless of how well your business is doing, change is on the way. Companies must adjust or they will fail, because technology is already shifting at an exponential rate. Your company will not possibly be able to keep up with technology in the next five, ten, or twenty years if you aren't willing to change.

¹ <http://www.fastcompany.com/1751352/why-companies-will-change-or-fail>

Amazon's Willingness to Take the Lead

Somebody has to take the lead. And when it comes to innovation in the shipping and logistics world, it's usually Amazon and Jeff Bezos. According to recent reports, Amazon.com accounts for 30 percent of all-ecommerce sales in the United States. How did they get there?

According to Jeffery Eisenberg, "The company did not start out knowing substantially more than most other businesses starting their efforts online, but because it was willing to think ahead, develop data-driven technologies and push the boundaries of how best to do business on the Web, it is now the largest online retailer."²

Eisenberg directly points to Bezos' vision and the four pillars of success - customer centricity, continuous optimization, culture of innovation, and corporate agility - as the foundation. While each of the four relies on the other three to be successful, it's the culture of innovation that's allowed Amazon to scale so quickly. They are continuously optimizing every aspect of their business model, every process, every operation, and every employee. The latest result? Anticipatory shipping.

² <http://searchenginewatch.com/sew/news/2340352/amazoncoms-4-pillars-of-success-a-preview-of-jeffrey-eisenbergs-pubcon-sfima-summit-keynote>

Amazon's Anticipatory Shipping Model

When Bezos was interviewed on *60 Minutes* and shared his idea of delivery by drone, he received a great amount of opposition and criticism. People immediately took to the internet claiming how ridiculous of an idea it is, how many laws it would have to address, and why it would never work. Now Bezos has a new idea that is equally as progressive but apparently not nearly as disruptive.

In 2012, Amazon filed a patent application for what is now referred to as the anticipatory shipping model. In the patent abstract³, it is described as:

“...packaging one or more items as a package for eventual shipment to a delivery address, selecting a destination geographical area to which to ship the package, shipping the package to the destination geographical area without completely specifying the delivery address at time of shipment, and while the package is in transit, completely specifying the delivery address for the package.”

In December 2013, the patent was approved. How practical is the idea and how soon are customers to expect change? According to those close with Amazon, anticipatory shipping is merely an extension of the company's existing technologies and logistics. The goal is to increase the number of orders that can be delivered in 24 hours or less - something the company already does. With a corporate makeup that expects and encourages change and innovation, no one doubts that Amazon's newest idea will come to fruition - and quickly.

³ <http://www.practicalecommerce.com/articles/65420-Anticipatory-Shipping-Amazons-Approach-to-Influencing-Purchases>

How Anticipatory Shipping Works

Anticipatory shipping is built on Big Data and predictive analysis - two aspects that Amazon is exceptionally good at. The ecommerce giant has long been known for its ability to predict what customers want to purchase in the future based on previous browsing behaviors and buying decisions. Now it wants to use those same insights to predict what consumers will buy before they actually buy it.

In theory, items would be shipped to an Amazon hub in the geographical area near where the company thinks the items will soon sell. As a result, the standard process of receiving an order, labeling the package at a central warehouse, loading it, sending it via UPS or USPS, and then delivering could be a thing of the past.

Possible Pros & Cons of Anticipatory Shipping

Logistically, we will have to wait and see how the shipping model works once it is implemented, but the expectations are that there could be some major pros and cons:

- **Pro: faster delivery.** The overall goal is to get orders to customers faster. In many instances, the anticipatory shipping model may be able to allow for this. Amazon officials believe the number of same-day and next-day deliveries will increase exponentially.
- **Con: inaccurate orders.** It's very possible that anticipatory shipping could be wrong much of the time. While Big Data and predictive analysis have certainly come a long way, it's impossible for a computer to predict what a human wants with 100 percent accuracy. This could result in logistical nightmares and confusion if the shipping system isn't as accurate as first anticipated.
- **Pro: additional sales.** Amazon believes that even when it is wrong with a delivery it could capitalize on additional sales. The company is led to believe that a healthy percentage of customers would simply keep the item and pay for it.
- **Con: intrusive/offensive.** While a certain fraction may opt to pay for the item and keep it, others will probably find the shipments intrusive and/or offensive. It's possible that this could create ill will in customers and drive people away from buying items from Amazon.

At this point, nobody really knows what to expect. Everything is speculation and even those within the corporate walls of Amazon don't know for sure how the new shipping model would play out.

The Logic Behind Anticipatory Shipping

With the potential pros and cons balancing each other out, many wonder why Amazon is interested in such a high-risk and high-reward new model. In the end, it all goes back to the four pillars of success. Anticipatory shipping follows the ideals of customer centricity, continuous optimization, culture of innovation, and corporate agility.

According to Marcia Kaplan of PracticalEcommerce.com⁴, “Amazon’s objective is to more effectively compete with brick and mortar retailers that can better satisfy customer needs for instant gratification.”

⁴ <http://www.practicalecommerce.com/articles/65420-Anticipatory-Shipping-Amazons-Approach-to-Influencing-Purchases>

The Potential Implications of Anticipatory Shipping

While anticipatory shipping will certainly change the way Amazon does business, its reach is bound to be much more expansive. As Amazon does, so does the rest of the ecommerce landscape. If the model is met with success, it won't be long before others take notice and attempt to glean valuable insights from Bezos and his team. However, even those who are content where they are will soon be forced to shift.

Small and medium-sized businesses - SMEs - that operate in the e-tail space will be most drastically affected. Secondly, multi-channel retailers will be forced to make changes. Here is a look at what changed could take place due to anticipatory shipping:

- If anticipatory shipping is successful, it will likely take off with all the online giants - Amazon, Alibaba, Walmart, etc. As a result, the gap between SMEs and major ecommerce sites will continue to widen. At first it will be alarming, but soon multi-channel retailers and pure players will find their opportunities.
- The key for multi-channel players will be to blend their online and offline businesses - something Amazon and Alibaba cannot do. It will be important for these SMEs to combine the "touch and feel" advantage of their brick and mortar stores with fast, local shipping.
- SMEs will soon be forced to expand warehouses and focus on convenience when choosing locations, as the need to be closer to consumers will be more important than ever.

Getting Predictive with Your Current Model

For SMEs everywhere, it's crucial that they keep an eye on Amazon and any new developments with the anticipatory model. If it's successful, anticipatory shipping will become the future. While your business may not have the resources to develop an entire anticipatory infrastructure, you can discover ways to implement the key components into your existing shipping and logistics model.

- **Courier network model.** For local fulfillment and shipments, the standard courier network model is actually quite conducive to anticipatory shipping. With a little tweaking and relationship building, you will be able to use a local courier service to take shipments from the warehouse to the customer in a matter of hours. The problem, though, is that this model is quite expensive and would not be cost-effective for low-cost deliveries.
- **In-house model.** For companies operating their own delivery fleet, the main overarching benefit is that you have complete end-to-end control of the logistics process. By using customer data and statistical data, you can prepare for shipments ahead of time and route your own deliveries. As a negative, this could be an expensive model without the right technology to keep volume down.
- **Parcel carrier model.** As same-day shipping becomes increasingly mainstream, even the traditional parcel carriers are working to satisfy demands. Several carriers are already experimenting with faster, more cost efficient routing services (including evening delivery). The main benefit here would be the cost advantage, but companies will be forced to become more agile and flexible with pickup and delivery management.

Innovative or Intrusive?

The major question that must be answered regarding anticipatory shipping is whether it will be innovative or intrusive. It certainly has the potential to become either, but which side of the equation it falls on will ultimately determine its success.

- **Innovative.** The argument for Amazon is that anticipatory shipping is innovative. It's something that has never been done before - at least to the extent it claims it will be done - and could completely revolutionize the way ecommerce sites operate. From a customer point of view, the innovation will be just another reason to bypass brick and mortar stores and choose Amazon.
- **Intrusive.** For those who believe anticipatory shipping will never work - in the capacity Amazon wants it to, at least - the thinking is that it will be too intrusive. Consumers will be turned off by the fact that Amazon thinks it can determine what they want and when they want it.

The Logistical Issues & Global Effect

When it comes to logistics, the biggest problem Amazon - and eventually other companies that follow - will have is dealing with inaccuracies in the system, costly returns, and the reactions from UPS and FedEx.

As previously mentioned, it is impossible for an algorithm or data driven system to predict what a customer wants with 100 percent accuracy. In reality, it will probably be difficult to get anywhere near 80 or 85 percent accurate. These inaccuracies will likely lead to logistical nightmares and costly returns. While Amazon claims it has a plan in place for when the predictive model fails, it's unlikely that this plan will solve every issue that may arise.

Consider the following example. A mother has spent the last couple of weeks browsing Amazon's online marketplace looking for baby clothes, nursing accessories, cribs, and other products that likely indicate she is having a baby girl. Because of the timeline of purchases she has with Amazon, the company has a rough idea of when the child is to be born and sends out a couple of items the mother has recently shown interest in. However, unbeknownst to Amazon, the mother has complications during pregnancy and the baby doesn't survive. After arriving home from the hospital, the mother finds a package at her apartment. It's an outfit for her newborn baby, something she previously was interested in, but never ordered.

Not only has Amazon overstepped its boundaries by delivering something that was never ordered, but it comes at a very sensitive time. In fact, it could ultimately put the consumer relationship in jeopardy if the mother takes offense.

While that may be an extreme example, it's just one scenario in which Amazon could damage its reputation with loyal consumers and long-term customers.

It's also unclear how FedEx and UPS would react to a system that does not include full shipping addresses or labels.⁵ According to information found in the patent, Amazon would initially only place zip codes and city names on a package - updating it with more descriptive information as it is en route. Would rates go up? Would these companies even allow this process? Both answers to these questions are unknown.

⁵ <http://www.digitaltrends.com/web/amazon-patented-anticipatory-shipping-system-predicts-orders/>

Other Trends in Logistics Innovation

While Amazon and its anticipatory shipping patent are getting a great deal of attention, there are plenty of other innovations, changes, and trends happening in the world of shipping and logistics. Over the past few months, and leading into 2015, various technologies appear to be reshaping the entire logistical supply chain:

- Unmanned aerial vehicles. Also known as UAVs, unmanned aerial vehicles sound like they could be found in a Star Wars movie; however, they may hold the key to the future of shipping. While Amazon has received much of the publicity for UAVs, DHL has been hard at work testing them in Germany.⁶
- 3D printing. Yes, we are still talking about 3D printing. While 3D printing didn't become as commercially active this year as initially predicted, it appears that 2015 will be the year for this to occur. If it works as predicted, 3D printing could greatly enhance anticipatory shipping and logistical processes. By being able to immediately produce small parts on the spot, SMEs may be able to compete with the large inventories that major ecommerce players have on hand.
- TMS solutions. As the need for sophisticated, fully-integrated, end-to-end transportation technology becomes less of a luxury and more of a demand, TMS providers have taken notice and strengthened their software solutions. One example is GTG's Truck Based Tablet Management System - or TabNet.⁷

This proprietary TMS system operates through tablets and allows drivers to communicate with warehouses, distribution centers, couriers, and more in real time. With built in GPS tracking, EDI technology, driver and cost analysis features, and more, the TabNet technology provides a clear picture of where the future of TMS and logistics is headed.

⁶ http://www.dhl.com/content/dam/downloads/g0/about_us/logistics_insights/DHL_Logistics-TrendRadar_2014.pdf

⁷ <http://gtgtechnologygroup.com/tabnet/>

GTG Technology

At GTG Technology⁸, we believe change is good. To be successful in business, you have no other choice. This is especially true in a sector where technology giants like Amazon lead the way with progressive, innovative developments that run the risk of pushing SMEs to the wayside. While some claim that the gap between Amazon and small and medium-sized businesses is too wide to conquer, others believe the gap allows for growth.

At GTG, we fall into the latter category. With a commitment to innovation, we are continually working to allow SMEs - just like your business - to take advantage of industry trends and find success in shipping and logistics. That's why we come to work each day, and that's how we are able to provide such incredible resources for our clients. For more information on our various TMS solutions - including TabNet - contact us today.

⁸ <http://gtgtechnologygroup.com/>