

Matt Yearling

CEO of PINC Solutions, a Yard Management Solutions provider
at the forefront of pioneering the use of Drones in the Supply Chain



THOUGHT
LEADER
SERIES

Matt Yearling has over 25 years of experience in developing and bringing to market world-class ERP, CRM, supply chain, mobile and security business solutions across the global SMB, enterprise, and public sector market segments. As CEO of PINC Solutions, he is overseeing the development and deployment of the next generation of yard management and shipment visibility solutions to the top commercial and industrial supply chains worldwide.



Matt Yearling

Who is PINC and what solutions does it provide in the supply chain industry?

We are the world's #1 Yard Management System (YMS) provider. Founded in 2004, we serve all industry verticals with the leading best of breed YMS solution that operates with or without our Real-Time Location System (RTLS) platform. Our unique patented RTLS platform utilizes a variety of Internet-of-Things (IoT) devices, is our key differentiator and delivers tremendous value to those who choose to leverage it. The IoT devices come in the form of GPS, RFID, Cellular, Optical or other sensors in creation of low-cost, practical and accurate locationing platform. Our solution enables our customers to accurately identify, locate, and orchestrate the movement of high-value assets within their supply chain operations. Assets can be things like trailers, trucks, cars, pallets, appliances, etc. Anything that has high value.

YMS is an emerging market that sits at the intersection between transportation management and warehouse management. Each vertical has its own orientation around how to use its yard. If you're an automotive manufacturer, for example, you're using your yard to store inbound supplies. You could

have 500 to 1000 trailers of inbound supplies you need to accurately locate to feed your production lines. Or if you're an online retailer, what you really care about is outbound velocity. You need to rapidly identify empties to get up to the dock door, get loaded, and quickly leave the facility on its way to the end customer.

There are a lot of YMS use-cases. Each vertical has its own need and want. The strategic orientation depends on whether we're part of the warehouse – where operations use their trailers as an extension of the warehouse; Or more part of transportation – where operations are focused on outbound velocity, optimizing the network and getting customer delight in terms of instant gratification around receipt of product.

For our target market in North America there are 500 million trailer shipments a year between 250,000 plants and warehouses, and what people don't understand is 80% of the time those trailers and goods are sitting idle either in source or at the destination. That's

what we focus on. Optimizing the flow of goods from gates, yards and dock doors. Most of the time that means in the context of a yard where it becomes problematic for most companies operating at scale: Gate velocity, dock door optimization, yard optimization, optimization of assets, optimization of people, process and equipment to move these trailers around within a facility.

What got you into the drone business?

This is one of those examples where customers started talking to us about specific use cases. They didn't mutter the word drone, but when they said "If there was more elevated view of the assets or inventory, that would help speed up the process of locating those items. For example, if those items are densely parked or stacked vertically or if they are geographically dispersed over a large area." They weren't clear on what this meant, but they were clearly looking for an aerial sensor platform like a drone. For us as a company, we have a real-time location platform looking for high value assets on the ground like a trailer. That was a two-dimensional problem. It's an X-and-Y scenario. Now that we have the drone, it's enabled us to extend our platform into three dimensions, X, Y, and Z. Now we can get very accurate readings with a multitude of sensors and say, "I know where you are in the X, Y, and Z" and that's very compelling and very valuable in many use cases.

How do you believe drones are going to change the way supply chains operate?

I was part of a panel discussion recently and saw firsthand that this is a very polarizing subject with supply chain executives. There are those who are naysayers, and there are those who understand this is really going to



Executive
PLATFORMS
Elevating the Conversation.

www.manufacturing-event.com | [EP_NAMES](#) | [#NAMES17](#)

have an impact. I am naturally prejudiced, but based on the engagement with my customers and how they are planning on adopting this technology, drones are going to have a massive impact in the industry.

The first thing people need to understand is that this is not all about the last-mile delivery. There are so many more practical applications and use cases for drones than last-mile delivery. We'll let the Googles and the Amazons focus on that. That's the long pole in the tent. There are so many opportunities for this!

Drones are effectively one form of an autonomous robot. There are plenty of examples in existence in the supply chain already. The only difference being that this is aerial, getting to inventory more quickly, safely and accurately than a person can. It complements workers by automating highly repetitive tasks. The expectation is that you tell it what you want it to do, it'll understand where it is, go about its task and automatically rectify any issues it might have identified. That's fundamentally what it is. It is more complex than the robots on the ground, but it is going to have an equal impact on the supply chain in general.

Will drones be just one more option for supply chain management, or are they going to become the mainstream?

Drones are going to be adopted into mainstream of the supply chain in the next six to twenty-four months. That is an absolute fact. There are a lot of things that are going to enable that: Advances in technology, the loosening of FAA regulations, organization recognizing its value etc. It is going to happen. There is absolutely no doubt.

What should supply chain executives know about these new tools?

Today these tools are very much in beta in a number of supply chain environments. The key message here is if you don't have an initiative looking at drones, you are behind your competitors. There are many large corporations that are absolutely working on this, and there are others that have not even

started. So if you fall in the latter category, you are going to have some problems ahead of you.

Everyone else's margin is your opportunity. If you are not focusing on making your supply chain better-faster-cheaper, which pretty much every supply chain is doing today, then you have a problem on your hands. Take manual repetitive tasks and put it in the arms of an autonomous robot. Just do that, and you are going to have significant return on your hands, especially if you are operating at scale. So the bullet point here is if you're not doing anything right now, if you're not even talking about it right now, you're behind your competitors. Period.

When is the right time for companies to start investing in this technology? What will a typical pilot project look like?

I don't want to come across as flippant, but the ideal timeframe to start looking at this was six to twelve months ago. I don't want to overemphasize the point, but this is highly relevant for any company that has a massive supply chain. The reality is that this technology is moving faster than Moore's Law is in the semiconductor business. You just need to look at the amount of money being pumped into the drone business, the number of use-case applications, the number of companies that are looking at adopting it, the advances and cost performance of all the technology related to it. It is moving so much faster than any other technology that I am aware of. You really need to be looking at it right now.

In terms of a pilot, the way that companies have engaged us, they say, "Here's what our problems are. Is this something that is a near-term opportunity for this type of technology?" Invariably that means us going out, taking a look at the facility, collaborating on the potential key-use cases, and then putting together a proof-of-concept to show the value. There's no point in introducing a technology that brings more burden and more cost structure. This needs to radically change and radically shift the way companies are operating today. If it is not going to have that impact, you are wasting your time and you should move on to another use-case in

your organization. There is undoubtedly an application in your organization that is going to have the biggest return, and we want to find that.

We have been thoughtful in our approach to focus on specific areas that we are good at, and it seems to be resonating with the people we talk to. We can rapidly understand if it is going to be worthwhile for a particular organization. For instance, if you are working with a 10,000 sq. ft. warehouse, you are wasting your time. If you have a 1,000,000 sq. ft. distribution center, we can generate significant value.

What is PINC Solutions working on right now regarding drones?

We have focused on four specific use-cases in areas where we are experts: Three are outside use-cases, and one is inside. The first outside use-case includes large trailer yards where you're operating a facility where the yard has hundreds of trailer locations.

Second, Automotive is also very interesting. The automotive and truck manufacturing industries are defined by precision. However, the existing ways to track finished goods in the automotive sector are known to be ineffective, if your goal is a lean process. We learned over the years that automotive companies are losing huge amounts of time and spending productive resources trying to find their vehicles in their yards and lots. Then there are logistics providers moving millions of cars every year. It could be a roll-on/roll-off a ship, or inland into a number of different holding areas. They're operating at scale, tens of thousands of vehicles. Finally, dealers especially truck dealers and large auction warehouses have large lots of automotive. The most pervasive tracking mechanism of these inventory items and assets, is people on the ground individually checking each individual car. You can imagine how much of a laborious and error-prone process that is, and that's why people lose track of cars all the time.

The third outside use-case is laydown yards. That's where you have high value assets that are dispersed across a large geographic area. This could be an area where a power

distribution company that has large cable wheels or transformers or pipes or anything of that nature. Or oil and gas with pipes and drill bits and equipment strewn across a large area.

The final use-case is inside distribution centers. If you can imagine a very large warehouse, how do they reconcile inventory? They are assuming that where they said they put the inventory is where it actually is. Depending on the sophistication of the organization they could be doing a physical check periodically or they could be doing cycle counts. How are they doing that? They are using people and following a process. The most important aspect of the industry today is that what people really care about is having a high degree of certainty around the inventory on hand. Accuracy and velocity is what is driving a lot of the investments that we see going on. Rather than a 1,000,000 sq. ft. getting effectively checked every four to eight weeks, having that checked on a daily basis with autonomous robots is very valuable.

Tell us a little about the new capabilities you are seeing so far. How is this changing the way you and your clients do business?

The use of this kind of technology is impacting the core DNA of companies. For PINC, this has been a journey. In our background we have innovations in optical character recognition, RFID, and barcodes as a means to identify an asset. We really focused on RFID because it was so reliable for the assets that we were tracking. Then we got into drone technology, and the most pervasive use of the technology revolves around optics. It's about taking video, taking snapshots, and then crunching data to get useful information. Whether you are trying to determine crop yield in a field or measure the amount of aggregate you've mined or the progress of a building construction or capturing images of your inventory, it's all about optics.

In the supply chain, one of the debates that is still ongoing is RFID adoption. Clearly, there is room for RFID and barcode labelling,



but why would I need to have a barcode or an RFID chip to identify the object when I can look at the object and distinguish the object with the optical capabilities that exist. I'm oversimplifying it, of course, there are important reasons to have identifiers that RFID and barcodes provide. The point is, optical capabilities are a big factor in drones and are going to be a massive factor in supply chain. I don't think people really understand that yet. It's certainly going to be a big factor for us. What can you do with optics? You can use it for inventory identification. You can use it for barcode reading and optical character recognition of alphanumeric characters. You can use it for navigation: You can have stereo imaging just like a human walking around, you have depth perception, so you are able to know where you are and avoid colliding with unexpected objects. The only limiting factor on drones today is the relevant level of compute available to do all this on the unit, but again as I was saying earlier, Moore's law, it's getting faster and faster. The available power of compute on one of these drones today is equivalent to a high-powered work station. It's going to get faster-better-cheaper, and the compute is going to get even more compelling.

While most people today are taking image data off the drone and doing the compute in the cloud, doing the compute on the drone is much more compelling, much more real-time, and very possible. We're doing it today. Optical is going to be absolutely key for supply chains, and the implications of that are going to be absolutely huge. As I've mentioned, people haven't even begun to understand that yet. They're focused on, "So it's an aerial

sensor platform that can do work? I get that. But what does that aerial sensor platform do? What can you do with the data its myriad of sensors collect?" We are only at the tip of the iceberg for what these things can do.

What should supply chain executives take away from this interview?

It is important for everybody to understand that their competitors are already looking into the use of drones in the supply chain. The industry is starting to shift. At the beginning of the year, I would say the split between believers and naysayers in drones was about 50/50. Now we're almost halfway into the year, and it has tipped to more like 70% believers. People are losing their skepticism fast and getting more practical. That is the key thing here. This is not a toy. This is a commercial application of an autonomous robot.

Organizations need to be practical and understand the value that this provides. Then they need to replicate that across their network quickly. You have seen a lot of announcements out of companies in the last 12 months. In the next 12 months you are going to see a lot more announcements and a lot more industry heavyweights coming to the table to show the world that drones are useful for other purposes beyond just delivering a package. ☑

For more information please contact Geoff Micks, Executive Platforms' Head of Marketing & Research at 647.428.6107 or geoffmicks@executiveplatforms.com.