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Selecting the best software solutions to provide visibility into your supply chain

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Clear vision

Selecting the best software solutions to provide visibility into your supply chain

Consultants and integrators share their best advice with **Carolyn Gruske**.

Supply chain visibility is a simple and obvious idea: know where everything is at all times. Even the means of achieving it—using software to track items and movements—seems pretty basic.

But in reality it isn't easy to keep an eye on everything, even with sophisticated software solutions. And that's assuming the right systems and technology have been purchased or integrated properly in the first place.

"To me supply chain visibility is like the Holy Grail. Conceptually people almost look at it like you can sit in an aircraft control tower and you've got all this information coming in and advising you, and it all just comes together. But that's not true, that's not how it happens," says Mike Croza, managing partner at Markham, Ontario-based Supply Chain Alliance Partners.

Marty McGinnis, Toronto, Ontario-based practice leader of supply chain execution systems at KOM, has a similar view.

"Everybody tries to do supply chain visibility and nobody succeeds completely. The problem is you have to integrate data from multiple sources. That's really difficult to do. Software does not lend itself to that."

Even deciding what visibility actually is can prove challenging, says David Choufani, supply chain manager at Deloitte Canada in Montreal.

"I think everybody has their own definition in terms of visibility. Some people may see the information that comes to a company before it hits a distribution centre as visibility. If it's before the fact, it's about having visibility about what's coming in so it will help people improve their planning. Some might see it as after-the-fact information like metrics dashboard analysis—it's more visibility after the fact because they use historical data to understand how the market reacts or how their operation is behaving."

So before any company sets out to buy and implement a visibility solution, it needs to come to terms with what it means by visibility, and what it hopes to achieve by improving the depth and clarity of its visibility.

Defining the business needs

First, it's important to examine the big picture. What is the company's goal? What business need is driving the project? Even though supply chain visibility is a hot and ongoing trend in the industry, that's not a good enough reason to hop on this particular bandwagon without knowing what direction it's going to take.

Simon Newell, an Ottawa-based senior executive in Accenture's Canadian supply chain practice explains that a company needs to take a bit of time up front to think about the situation. They should identify their strategic priorities, their vision and what they are trying to accomplish.

"If that is clearly understood, it is easier to get to the point when you say 'these priorities are really important to us, so there is a value if we have features and functions that can do them. These features are less important, so we don't need to buy a Rolls Royce; we can live with a Mini in these areas.'

"It all goes back to understanding the business value drivers. If you have an understanding of what those are, people can be better informed and be able to make the right choices because, inevitably, it comes down to making a combination of choices about how far along the scale from basic to progressive you want to be in terms of solutions. So starting with that end in mind you need to ask: what's the vision, what are the business drivers needed to get there and then how can the technology support that?"

Of course the big picture can't be filled in without having some sense of the finer details. At this point it's not about drilling down to the microscopic level—now is not the time to define file formats—the goal for this stage is to not only solve existing issues but make long-term improvements so they won't become problems in the future.

"What I encourage people to do is think about the business from the standpoint of how can you streamline your processes and your technologies to make them more efficient and in doing so define those things that are most important to your business," says Bob Heaney, lead analyst in the supply chain management practice at the Aberdeen Group in Boston, Massachusetts. "What is an efficient supply chain for you? Is it lowest cost? Balanced cost and service? Then look at the solutions that will bring the biggest return to your bottom line as possible.

"If you look at your network and the biggest challenge right now is just getting control of inventory and internal locations, then that's got an investment associated with it and a benefit. Try to define that benefit and try to define that investment, but don't stop there. What if you take a look at the next tier of information you'd like to have and say 'I'd like to actually know what is coming in on the trucks inbound to my DCs because then I can include that in my inventory profile'? So now an incremental ROI [return on investment] analysis would ask 'What's it going to cost to build that kind of infrastructure? What kind of partnering do you need to do with your carriers? Maybe they already have solutions you can adopt' Try to develop a cost-benefit analysis of that."

Collaboration

Just because you want to accomplish a task in a certain way, it may not always be possible due to your partners' capabilities (or lack thereof). If, for example, you're dealing with a small supplier in a country with infrastructure limitations, then your goal of having a fully automated system that feeds data automatically may not be realistic.

"There will always be blind spots, but it's how you plan to manage around them that's important," says Newell. "Maybe there is a combination of some manual tools and techniques in certain parts of the supply chain or in certain areas that at least gives you some basic information until you get the product back on the grid where it's able to be tracked and traced—it depends on the supplier's level of sophistication. But even some of the smaller guys have ways and means of communicating where they're at and where the inventory is. So quite often it's not nice, neat, end-to-end visibility. It's kind of a patchwork of different areas that have different levels of visibility and what you have to try to do is join up that patchwork and gradually close down the blind spots over time."

Businesses also need to understand exactly where they exist in the supply chain, as their role may mean they aren't in a position to dictate the technology standards or procedures that enable visibility.

"If you're a consumer goods company that is working with a Walmart you're already working in some kind of collaboration with them on a system," says Croza. "It all depends on where you are in the chain. Are you on the top of the chain or the bottom? If you're on the bottom some stuff may be dictated to you."

People

Not only do businesses need to know their institutional roles, companies need to realize that implementing any large, wide-ranging software system, especially one that is going to provide increased amounts of data and information, is going to put demands on staff. So any software visibility project will require the co-operation and support of employees.

Before a system is even purchased, companies are advised to pull together a cross-discipline team to represent the needs and concerns of the various departments and to offer guidance and suggestions during the evaluation, purchasing and implementation, advises Newell.

"Approaching it that way ensures you have an end-to-end governance structure that can deal with decisions and make the trade-offs. Then you're not operating in silos where you might be making a good decision for the procurement department but a bad decision for the business overall."

He stresses that the company's top executives need to be represented on the cross-discipline team. Without strong corporate leadership, the ability to make tough, binding decisions will be hampered.

He also points out that company leaders need to ensure that any significant software project includes in its budget time and resources for education. If employees aren't given the training they need to understand and use the new tools, a company is likely wasting money buying the software in the first place.

"At the end of the day it's people implementing systems and it's very easy to overlook the impact on the organization and to overlook the training requirements that might be needed and making sure the people who are going to use the software know what the systems are capable of, what changes it involves and what the new procedures are they will need to follow. That's often an area that is underestimated. If you've got a great system and a great tool and you haven't got the people organized properly to use it, you're going to get suboptimal returns."

Exceptions, predictions, business intelligence and analytics

The purpose of any type of supply chain visibility solution is to handle as much as possible automatically—without human intervention. As the volumes of data grow, it is increasingly important for people to focus their attention only on the key issues or the most pressing problems. But how involved staff will be in managing and using the visibility software may depend partly on the types of reporting the system does.

As with the concept of visibility itself, there is a problem with definitions when it comes to speaking about reporting capabilities. Every business, every organization and every vendor seems to refer to similar functions using slightly different terms. Typically the simplest to explain—and hence for people to agree upon when referring to it—is event management. Or exception reporting. Or a combination of both.

"You have an expected event that is supposed to happen. So you set up your system and say 'I'm looking at an inbound move globally that's going to feed into my production line.' You enter into your system that on June 5 there is a receipt or an induction acknowledgement at the port of Montreal or the port of Vancouver. That's event management," says Croza.

"The system tracks if it doesn't happen, so that's exception-based management.

"There are systems that are so evolved they advise you and say 'something is scheduled to happen on June 5', and if it doesn't happen it sends an e-mail to flag me to start making changes further down stream. That way I can start investigating why it didn't happen, or (in a perfect world) I can start making changes to my production schedule and my shipping schedule."

The next level beyond knowing what did happen is predicting what is going to happen. Generally this more complex task falls under the label of predictive reporting, and while Heaney says it can be tied into and based on exception reporting, its real value comes after a company has built up a repository of data and can use that information to make predictions about the future.

"Once you have a historical database of what's been happening over time, people can use your supply chain visibility for predicting what they need to do differently: Where do they need to build additional capacity into their systems for the future? Where do they need to build more manufacturing sites based on the volumes shipping today? If I'm going to build in China, based on what we saw last year, we know it will cost X, so maybe we can do it in Mexico.

"People take the information that is there and leverage it from a strategic standpoint to plan capacity. For things that take more time, like restructuring the supply chain, they'll forecast out what things will look like in two or three years.

"It's just one input into the process but if you don't have the data, you don't have a good baseline to know where you're going to be," Heaney says.

Trend analysis is very closely related to the predictive operations. Like the forecasting applications, it relies on being able to dig through mounds of historical data to find useful business planning information.

"Analytics goes beyond business intelligence although some people will confuse the two," says Choufani, referring to the general reporting tools that are used to display basic business information, such as inventory in the warehouse, often in a graphic manner such as with charts or graphs.

"Analytics takes the data and tries to find if there is something different—something impacting the strategic orientation of the company. For instance, business intelligence will tell you how much sold everywhere or how much you shipped to a customer. Analytics will tell you if there's a specific trend you should pay attention to because you are seeing more selling in an area you hadn't expected. It's getting more intelligence from the data to help or improve the strategic orientation of the company."

Data housekeeping

GIGO is an old computing acronym standing for garbage in, garbage out. Essentially it means it's impossible to make good decisions based on bad information. In terms of supply chain visibility software, that means having accurate, clean data. So before installing any new visibility software or predictive analytics module or trend reporting tools, it is absolutely crucial to review the data that will be used to populate the new systems.

"You need good housekeeping," says Newell. "You need to update your data, purge your old data—get rid of stuff that is defunct—have good controls and compliance around adding new data. That's all part of good housekeeping.

"Once you have a historical database of what's been happening over time, people can use your supply chain visibility for predicting what they need to do differently"

"Then there are a number of things that can be done to clean up the data and get it ready before starting an implementation or building a database or connection points. Certainly, in our experience most systems integration jobs always have a component of data preparation and data readiness. I think this is one of the areas that is increasingly critical to getting right because you can design the system and have exactly the right combination of systems, but if that data is not accurate, then it can cause a lot of problems down the road."

Standalones, integrated modules and cloud services

Once the data has been cleaned up it's ready to be used by the chosen visibility solution, but what that software actually looks like and how it functions comes down to a matter of finding best fitting compromise for the company.

It will be a compromise because any purchase will have to be made based on a number of possibly conflicting factors including (but not limited to) budget, functionality, and the IT environment in the company. If, for example, an IT department

isn't willing or able enough to manage a large scale, in-house software implementation, then the business could have no choice but using a software-as-a-service (SaaS) solution. SaaS, or Internet or cloud-based products promise to make fewer demands on IT's resources, and they also hold out the lure of immediate connectivity.

"There are companies out there like GT Nexus or Amber Road whose whole mission statement and purpose is to provide cloud-based platforms for global trade—platforms where they have many, many suppliers, carriers and shippers hooked into one common platform where any given partner in the supply chain can be connected to anybody else in the chain. It's kind of like Facebook on steroids for their community," says Heaney.

"All the data flows are predefined but at least you have access to the suppliers without having to build your own technology to get there."

For businesses with more robust IT departments, or for companies that want more customized options and more control over data formats and usage, they're left with option of buying standalone, best of breed solutions, or turning to vendors whose software is already in use and asking for more capabilities from their ERP or WMS systems.

"If you buy a standalone, you have to get files and information from one system to the other and you have to build interfaces and you have to build controls. It might cost you more and it might not be as seamless as already having it in the ERP or WMS. But it's possible the standalone has more capabilities than what they're offering for the ERP or WMS because that's the standalone's core expertise. Choosing between them is something you have to do during the selection process. You need to compare the functionality between the ERP and the standalone systems," said Choufani.

No matter which option is chosen, no organization should enter into a software visibility project thinking it will be wrapped up in a few days and the result will be perfectly functioning software, explains Heaney.

"You have to do these things in steps, but at the same time you need to at least define the boundaries of what you're going to go after and limit it to a phased sequence. You're not going to build the whole thing blindly without doing a phased approach. You'll probably go after the biggest-bang-for-the-buck items and do it almost in concentric circles as you progress."

In the end, it's just important for organizations to realize that if they're they want to embark on projects that improve supply chain visibility, they need to keep their eyes open. MM&D

Step-by-step software visibility purchasing guide

KOM's Marty McGinnis usually leads his clients through the process of selecting the most suitable software, but he has summarized his basic process for *MM&D* readers.

1. First figure out exactly what your own requirements are. Ask yourself what do you want to accomplish with this upgrade. Determine who the stakeholders are in your organization. Create a cross-discipline team to evaluate your needs and your options. As McGinnis puts it: "I like to say to clients, 'Don't tell me what you want right now, tell me where you'd like to be in your ideal solution.' Then we'll work backwards from there in terms of what is achievable and what you can afford."
2. Look to your own major software vendor—the one who already provides the backbone of your system, such as your ERP application. If that vendor doesn't have the software or module that meets your needs, look to the community of vendors who create add-ons to the main software. If neither of those options looks like it will work, then it's time to check out the best-of-breed, stand-alone solutions. McGinnis does have one very strong caution to add for this stage: "Whenever I go look for software, the first question I ask is 'will this vendor likely be here in five years?'"
3. The next question you need to ask is: does the company have the ability to implement the software or help you implement it? "You don't want them to dump you a piece of shrinkwrap and leave because this is an area where you're going through continual evolution and you'll want to be able to grow your system," says McGinnis.
4. The request for proposal (RFP) stage is next. When McGinnis helps clients through this stage he gets strict. "We lay out quite specific requirements we are looking for and we also lay out our terms and conditions, so if things go wrong, we know who's responsible for fixing them."
5. Then it's up to the software vendors to respond to the RFP. That's when McGinnis goes through a checklist, comparing what the companies are offering against the requirements listed in the RFP.
6. Invite the companies with the highest RFP evaluations to demonstrate their solutions. McGinnis recommends providing all of the data the vendors need to create the most representative demo possible, but he also goes a step further. "We also throw them sample data in the middle of a demo, just to make sure it isn't a PowerPoint on steroids."
7. It's at this point McGinis recommends doing site visits to see the software in action in similar environments, making reference calls and doing other independent checks.
8. Invite the leading vendor in for a gap analysis. McGinnis says he pays the likely supplier to come in—usually for around a week—and go through a detailed planning session. This is when the nitty-gritty details are worked out: where the interfaces between the systems will be, what customizations will be required, etc. There are two goals at this stage: fully understanding the entire scope of the project and what it will entail, and negotiating the cost of it. "We want the vendor to come back to us with a price on the software and a firm price on the changes and modifications. What we don't want is to buy the software then have the vendor sit down and say, 'okay now everything is a mod and you'll have to pay retail price.' The price is never better than before you sign the contract."