FIVE CHALLENGES FACING THE MODERN SUPPLY CHAIN...

...and how control towers can help RESOLVE THEM.
These same executives also face continuing demands to do more with less. They are expected to continually make their supply chains more profitable, nimble and flexible – all whilst improving their resiliency to the increasing number of digital and physical security risks. At the same time they are also under pressure to continually innovate in order to meet ever-changing customer needs and expectations, and to identify and support future growth opportunities.

Technology is obviously an essential part in enabling supply chain leaders to manage these complex set of requirements. The vast majority of major companies are now supported with supply chain technology such as ERP, planning and optimization, transportation and warehouse management; providing a wealth of operational data along the extended supply chain.

However, despite ERP systems being a standard backbone of companies for two decades, many still struggle to gain visibility of operational activities across process boundaries, relying on lag based functional reports that only offer an after the event silo view, and which lacks alignment and visibility into the bigger picture. They are essentially flying blind, relying on reports of past performance to guide future activities. Despite massive investments in technology, nearly every supply chain health measure - such as service levels, out-of-stocks, fill-rates, and inventory levels - remains almost unchanged from ten years ago.

This new supply chain paradigm needs new processes, new tools and new thinking.
However, control towers have evolved beyond myth into the real world. Now technologies exist that enables companies to ensure successful execution of advanced strategies through developing visibility of operations that enables real understanding and control of the extended supply chain. Organizations armed with this new capability can explore the specific short and medium term actions they can take to obtain competitive advantage.

Rather than just analyzing past performance, new forms of control tower capabilities have arisen that use time sensitive data from a company’s existing, integrated data management and transactional systems to integrate processes and tools across the end-to-end supply chain. The type of analysis opens up the opportunity to highlights both issues, before they’ve occurred, and the potential source of error.

Prescriptive analytics empowers integrated teams to take actions on issues when they arise, not just report on them afterwards. It’s the equivalent of being able to manage the planes that are in the air, versus simply reporting on the performance of the ones that have already landed.

The following sections detail five key ways that supply chain control towers can help companies to overcome some of the biggest issues they face in this uncertain world.

**Enter the Supply Chain Control Tower**

Analysts and vendors have been pushing the need for end-to-end supply chain visibility for years. In 2013 Gartner stated that virtually no organizations will be able to provide end-to-end supply chain visibility in the near future; they estimated that by 2016, less than 20% of companies would finally have access to it [1].

Supply chain control towers have had their own hype-cycle over the last few years, and to many, they still remain as mythical as unicorns and mermaids. The main premise is that they can act as a centralized hub that combines data from across the extended supply chain; enabling centralized planning teams to make adjustments to supply plans in order to minimise disruptions and risks.
Supply Chain Visibility and Insight

As leading companies across the world turn to technology such as robotics, drones and other inventions more suited to the latest Sci-Fi blockbuster to reinvent their supply chain and create new levels of responsiveness and agility, others are still left fumbling around in the dark, lacking any real visibility across the end-to-end value chain.

They need to try harder

Companies who manage to achieve supply chain process transparency have been shown time and time again to outperform those that rely on lag based functional metrics.

A recent study by Aberdeen Group concluded that those considered best-in-class in the area of supply chain visibility were able to deliver perfect orders to their customers 96% of the time compared to just 85% by those considered average [2]. Given the obvious benefits visibility brings, it’s hardly surprising to find that 52% of supply chain leaders cite this as their greatest pain point [3].

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One of the main reasons for increasing the level of supply chain visibility is to identify risks. KPMG’s 2016 Global Manufacturing Outlook Report highlights that the best way manufacturers can reduce supply chain risk is by placing a greater emphasis on cross-functional management throughout the end-to-end supply chain in order to achieve greater visibility and collaboration [4]. However, this same report details that currently only 13% of the manufacturers researched had achieved complete visibility into their supply chain, leaving plenty of opportunity for improvement.
Only 13% of the manufacturers researched had achieved complete visibility into their supply chain. Compounding the problem is the fact that locally stored Excel spreadsheets and paper and pencil still drive most processes, while communication between teams still largely takes place on an ad-hoc basis with inefficient and error-prone telephone calls and emails.

Any supply chain control tower project needs to provide almost instant access to information across the entire supply chain in order to answer the question "what is happening now?". Many so-called control towers are simply reporting towers; providing pretty dashboards full of lag measures.

The perfect analogy is perhaps the air traffic control tower. Consider a scenario where the air traffic controllers made decisions about the planes in the air based on a review of the number of planes that had already landed, their quality upon landing and how timely they were. They then compared this information to the number of planes that had successfully landed this time last year, and again to the number of planes they expected to land safely.

Would you be happy flying into an airport that focused on what had happened more than what was happening right now?

Thought not. Yet this is exactly how most manufacturing companies are run.

Real control towers need to provide powerful predictive analytical tools, that not only allows supply chain managers to answer "what happened?" but also "what is happening?", "why is this happening?", "what is the likely impact?" and "how can we improve?".

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This requires more than just reporting and visualization capabilities - it requires the power to analyze what is happening across the supply chain as it is happening. It also requires this power to be in the hands of the business, not IT. To be able to handle uncertainty you need to have the ability to analyze and investigate issues as they happen in order to provide answers.

While normal companies talk about big data, the ones in control are focused on obtaining big answers.
Alignment is everything

Adrian Gonzalez, the founder and brains behind Talking Logistics, encourages organizations to work hard to break down their supply chain functional silos, citing that many manufacturers still seem to confuse co-operative behaviour with collaboration; accepting communication rather than participation in shared goals [5].

Win together, or lose together

Gonzalez advises that companies consider themselves as part of a larger value network, and advocates that all business departments, from procurement to finance, are held accountable for the success of a network’s wider objectives. The adage is we win together, or lose together. Those that don’t will find business units unintentionally ostracizing themselves and prioritizing work according to their own departmental agendas.

This segregated approach discourages open and honest communication, and forces business units to conduct analysis within their own specific verticals; multiple versions of the truth will soon surface. Not my department, not my problem.

Worse, each silo in an organization usually has their own self-defined measures of success, which often are counter-intuitive to the success of the larger goals. Where one department is measuring themselves based on agility and service, others are focused on cutting costs, reducing working capital and overtime. All good measures independently, but hard to achieve as a combination if the departments don’t talk to each other or have visibility of each other’s goals, actions and metrics.

Industry examples

Writing for the Diversity Journal [6], Del Williams writes that the mishandling of communication can cost manufacturers dearly; from missed orders, quality issues, and running out of material to increased scrap, absenteeism, and turnover, to misunderstanding customer needs and selling the wrong product.
Further research has also shown poor communication to cause manufacturers serious quality problems, raise product costs, and inhibit company’s ability to compete effectively [7]. With issues attributable to miscommunication able to manifest itself as one of many potential problems, those that seek to rectify these issues will be richly rewarded.

Once better communication is established, manufacturers can expect to increase the bottom line by 10% or more very quickly [6].

Get Control

There are three things that are important to resolving this issue.

The first is the will to change. This has to come from the top, and it starts with recognizing that there is a problem to be solved.

The second is to understand that there are many value propositions in a business, with many different value chains supporting them. Yet, nearly every business only has one set of processes and metrics.

The third is the provision of technical capability to provide visibility and transparency across multiple process boundaries so that they can be aligned and measured in their contribution to that particular value chain’s goals – be that increased reliability, reduced cost, greater agility etc.

This is where control tower capability needs to be developed.

This is more than providing a mere reporting overview; it’s the need to provide a consistent way of measuring and managing processes across functional boundaries, and the ability to achieve four capabilities:

1. The ability to see what is happening early enough to make adjustments – i.e. analyze and influence open orders.
2. The ability to understand causation and not just correlation – i.e. understand the impact of late purchase orders on the ability to supply finished goods, not just measure lateness in purchasing and customer service and assume there’s a link.
3. The ability to segment data along value chain lines.
4. The ability for the control tower to highlight critical issues, focusing the user’s attention on the most important issues.
Control the Rising Cost and Unpredictability of Transportation

According to a study conducted by the Boston Consulting Group and the Grocery Manufacturers Association, transportation has become a top priority for 83% of supply chain leaders [8] and with logistical costs expected to rise by 14% this hardly comes as a surprise [9].

Competitive advantage

As consumer demands continue to grow, organizations need to broaden their portfolio to appease the rising number of commercially savvy and green conscious buyers. These growing product sets all hold obvious implications for the transport industry and put 3PL and other transport partners under increasing strain.

Before the turn of the 21st century, the low costs associated with the holding of stock and transportation services encouraged organizations to emphasize fast frequent delivery through means such as just-in-time delivery [10]. However, supply chain innovators such as Amazon have turned to the supply chain as a new source of competitive advantage - they’ve embraced risk, ignored conventional wisdom and employed new technologies and resource to create new, future-proof business models [11].

These new strategies often focus on the consumer and aim to realize the ambitions of value chain objectives.

It is therefore no coincidence that we’ve seen consumer-driven supply chain networks start to grow in popularity.

However, no matter the makeup of a supply chain network, supply chain professionals will continue to turn to their 3PL partners to help them achieve greater efficiency gains. With
the cost of holding stock forever increasing and consumer expectations applying further pressure on the supply chain, new transport methodologies will continue to be sought in order to tackle these new age challenges.

**How do control tower solutions resolve this**

The companies that are most exposed to the rising costs of transportation are those not in control of their ability to understand and control short term demand. Excess transportation comes about from four major factors:

1. **Costly expediting and rush orders** caused by unexpected demand or delayed supply – sometimes using premium transportation methods such as air freight.

2. **Partial shipments** caused by having insufficient stock at the time of ordering, and the costs of running half-empty trucks.

3. **The cost of follow on shipments** – which could run into multiple deliveries to the same customer for the same order.

4. **The increasing number of returns**, especially in e-commerce, where people will order multiple sizes of clothes because they are unsure of the fit, and then send back the ones that they don’t want.

All of these are indicators of a lack of real understanding of the demand signals, and a lack of transparency into orders and visibility of critical situations before they hit the logistics execution team. This requires resolution through a process of ‘integrated business planning and integrated business execution’ where agile supply teams analyze demand against available supply – including logistics capability - and make agreed decisions on what to prioritise in order to maximize customer service but also optimize the cost of meeting that demand.

This cross-process style of working shares its origins with the agile methodology adopted so successfully in the software industry. However, successful implementation relies heavily on having insights ready in order to guide accurate decision making – and this is where the control towers come in.

It’s not good enough to simply highlight an issue – in order to operate at the speed that modern business requires, the impact and cause of the issue needs to be highlighted too.

This goes beyond simply reporting on delivery issues to preventing them from happening in the first place.
Moving Beyond Firefighting

In all other walks of life it is widely accepted that prevention is better than cure, yet this seems to be the antithesis for many business cultures across the globe. Those that gallantly resolve critical business orders are often showered with praise, and in some cases deservedly so, whilst those that avoid controversy seem to slip under the radar.

Why not simply react?
The supply chain is perhaps the most obvious example of this; blighted by the curse of being the place where success is actually measured by silence. Where not being seen or heard is actually the primary aim, for the supply chain that is being noticed is usually for the wrong reasons. When things go well, almost no-one notices. When they don’t, everyone does. The aim is to effectively be invisible.

Whilst the B2C world is the most exposed to bad reviews and trial by social media, the B2B world, especially in areas like discrete manufacturing, is one of the worst culprits for not-being invisible. Chaotic responses to ever shifting demand priorities and crises in supply create a fire-fighting culture where getting through the day is the aim, and repeating it all again tomorrow is the result. It’s like groundhog day, every day - mostly because saving today’s issues usually involves redirecting effort and inventory that was ear-marked for tomorrow.

The worst part of this toxic world is that its addictive. It creates daily heroics, provides instant gratification for those that are looking for recognition and involves little deep thinking. Rather than the hard task of collaboration, calculating and planning, why not simply react.

The addictive nature of daily firefighting means that it requires an enormous effort to break free from it. Habits are hard to form but even harder to change – especially habits that make you feel good. It’s like eating junk food – you know you shouldn’t but it’s convenient and initially satisfying even though you know its bad for you long term.
Rather than the hard task of collaboration, calculating and planning, why not simply react.

The thing about firefighting is that you don’t need to do anything – the fire becomes the centre of attention, and when there are multiple fires a day, then life is never boring. It delivers an initial rush of solving today’s crisis, even though you’ve probably had to sacrifice the plans and inventory for tomorrow in order to achieve it.

How do control tower solutions resolve this?

One of the main problems with the culture of firefighting is that it is usually caused by a lack of visibility of the intentions and activities of other departments, combined with a lack of collaboration, communication and a lack of insight.

Departments rely instead on lag based hindsight for any form of post-mortem issue analysis. It also usually hides a lot of wasted time and effort, simply assuming that this is ‘the cost of doing business’. Time spent in constant crisis-meetings, downloading data into Excel to try and figure out what’s actually going on, status chasing between departments, managing calls from customers about their late orders, trying to ascertain why different departments have different results from ‘their’ data, and so on. Not to mention the money spent on overtime, order expediting, excess storage etc.

To resolve these issues once again requires a determined willingness from the top in order to create a culture of cross-process collaboration and shared understanding of how to operate in order to align activities so that the customer, not the department, wins.

Processes need to become streamlined and aligned towards the delivery of shared goals, with the end-to-end process defined and understood so buffer points are in place that allow these cross-process teams to evaluate any issues, perform “what if” scenario planning, and engage in risk analysis and response management. Then the dissemination of the agreed action plan needs to be executed, and the results evaluated in order to determine whether the right results were achieved.

This cannot be achieved by force of effort alone, so technology needs to come to the aid of these efforts by providing the capability to oversee the flow of products, information and finances across the value chain. More than that, it needs to understand the data, sense when things are not as they should be and highlight not only the exception but also its likely root cause.

People do not have the time now to sift through hundreds of line items – the tools need to do the heavy lifting for them.
While some companies are strategically evaluating how they can address the opportunities presented by big data, many are still struggling with the challenge of bad data.

In a 2013 Experian study of 806 companies, the researchers found that 91% blamed poor data for wasted budgets.

This lack of data quality has obvious repercussions. Poor and inaccurate data can slow everything down; creating excess management, duplication of work, indecision and worse, incorrect decisions and actions. Tools like ERP rely on data – it’s the lifeblood of the system. ERP systems are also not self-aware – they do not know if a lead time, customer address or sales price is accurate or not. However, tools like MRP and ATP will assume that they are, and plan and act accordingly.

Research in 2014 from Experian Data Quality found that 86% of polled companies admitted that their data might be inaccurate in some way [12]. 44% of businesses said that missing or incomplete data is the most common problem with outdated contact information (41%) being the second most problematic.

The Experian research also found that the root cause of inaccurate data is primarily human in nature. Human error was cited as the primary factor for bad data, with 59% of organizations declaring that this was the root cause. Other reasons included poor internal communications (31%), an inadequate data strategy (24%), lack of available resources (22%) and finally lack of budget to manage data (20%).
The oxymoronic nature of these findings are apparent. The results of the research highlight that organizations blame a lack of time, budget or both for their inability to establish a clear data management strategy and to follow through on it. Yet, the costs of bad data to these very same businesses is staggering.

In a 2013 Experian study of 806 companies, the researchers found that 91% blamed poor data for wasted budgets, 29% reported that it caused them to lose potential customers, 26% stated it reduced customer satisfaction and 33% said that it had led to an inefficient use of staff [13].

A 2007 study by Information Week found that middle managers spend an average of two hours per day looking for data, and that the average IT manager spends 30% of their time trying to pin down information [14].

The financial impact of this is enormous. The 2014 Experian research found that 88% of companies thought inaccurate and poor data negatively impacted the bottom line, with the average company losing 12% of its revenue. It concluded that 75% of businesses are wasting 14% of revenue due to poor data quality - equating to a staggering £1.98bn of wasted revenue across UK businesses [15].

So the case for data control and management is clear both from a process and a profit perspective. It saves time. It saves money. It improves decision making. The key is to first understand what you are trying to achieve, then to understand the data, product and financial flows involved in making this happen, before finally agreeing on the cross-process roles and responsibilities needed to make it happen in a timely and accurate manner.

As well as the financial risk, there is also significant legislative risk in poor data governance. Global regulations increasingly require greater disclosure of data provenance and use, with an increasing regulatory focus on the quality of data used to support key processes and reporting and the overall control environment. In summary, the benefits of good data, of being able to do things right first time, therefore far outstrip the costs involved in doing it.

Simply developing and implementing a strategy is no longer a competitive advantage, and the real differentiators are now in the detail. More than ever, it is the tools and processes that define a strategy that hold the key to identifying and resolving data quality issues.

Data management is a cross-process effort, requiring multi-functional teams to work together to identify the key pieces of information that flow throughout the value chain. Once this has been identified, then the creation of a cross-process data control tower to support this dedicated data management effort, one that analyses all relevant data across the value chain and highlights any discrepancies between transitional and master data, can dramatically increase their chances of achieving real-time visibility.

The key is not to find out where data issues lie; the key is to resolve the issues before they impact the customer. From getting a single customer view to reducing dwell times through ensuring correct credit limits and accurate pricing conditions, from making sure your bills of materials have the right components to ensuring supplier lead times are correct, data can make or break a value chain.
In conclusion

Tools in isolation are never the answer to business challenges. It has to be combined with a clear vision, strong leadership, freedom to innovate and ability to collaborate across functional (and organisational) silos.

Technology serves a limited purpose unless key players across the extended value chain are working off the same playbook. For example, if the demand for a key product exceeds the forecast to the point where supply is constrained, the next action might be to cancel any planned promotions for this product. However, this information is useless unless the marketing, procurement, and warehousing team members all agree with this decision and take action to execute this decision.

If manufacturing organizations are prepared to break down their traditional functional walls and restructure their organization around high-performing value chain teams, then supply chain control towers are a must to enable these teams to succeed.

However, these towers must do more than evaluate plans and report on results. They must provide end-to-end visibility from a high level monitoring layer down to detailed issues or transactions, enabling the team to manage and optimize every transaction or event from the consumer to parts supplier. This means all planning and execution processes are covered, whether in your demand, supply, or logistics.

This allows users to be alerted to issues as they happen, and even more importantly, see the consequences of the impact all the way down to the SKU level and enable intelligent allocation decisions across the supply network.

Human planners working alone could never manage to keep up with all this data. The age of the lone hero and their master spreadsheet is over.
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