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THINKING AND ACTING **EXPONENTIALLY**

By Anton Nieuwoudt

Think back, if you are old enough to remember, to the days of film photography. Each photograph cost an incremental amount of money. The cost of the film, the cost of handing in the film, the cost of processing the film. Photography was based on a scarcity model and we carefully conserved and managed our photos and film rolls to ensure no wasted shots.

With the shift to digital photography something revolutionary happened. The marginal cost of taking extra photographs didn't merely diminish, as it would with a linear improvement in technology, instead it essentially sank to zero. It didn't matter if you took five or five hundred pictures. The cost was the same. Not only that, all the peripheral activities around it also underwent a technological leap. Anyone could be a "darkroom wizard" and apply moving, copying, filtering, editing, sharing and publishing actions. And all these things could now be done with a camera that was a fraction of the cost and size of traditional analog versions it replaced. These were disastrous times for companies like Eastman Kodak and Polaroid.

In other words, what happened in the world of photography wasn't simply a major improvement. It wasn't even just a single

evolutionary leap. It was in fact the very definition of a paradigm shift.

What is the point? The point is that an information-based environment delivers fundamentally disruptive opportunities. There are many more examples of similar occurrences which indicates that we are shifting to an information-based paradigm. The pace of change is however fundamentally driven by the fact that the doubling of price/performance in computing will continue to increase - Moore's Law.

In the information enabled world we live and work, we are guaranteed to experience radical and fundamental changes on a more frequent basis than any of the generations before us. Anticipating the impact of these changes and acting accordingly on will be one of the single most important sources for continuing to be relevant and competitive.

This brings me to the concept of exponential growth and the exponential organisation as penned down by Salim Ismail in his book - Exponential Organisations (ExO).

In short, the ExO will overwhelm the traditional linear organisation (that is fundamentally based on and structured to maximising the ownership and utilisation of their assets and resources) in most

industries because they take better advantage of the information-based externalities inaccessible to older structures. Look at the impact of companies Airbnb, Tesla, Google Ventures, Quirky and Uber have had on their respective industries. The fact is that in today's information enabled environment it is not anymore about what you know, but how you apply it. In other words, your ability to recognise and connect the dots others are missing.

What does this have to do with supply chains and the management thereof? Simple. Utilise the vast amount of data being generated in the supply chain, collaborate with resources you don't need to own to help you make sense of it, and apply the information to guide your strategic, tactical and operational decision making.

Let's put this into perspective. We'll be jumping from eight billion Internet-connected devises today to fifty billion by 2025, and a trillion a mere decade later. We are literally information-enabling every aspect of the world around us in the Internet of Things (IoT). Forty years into the Information Revolution we're just 1 percent down the road. Not only is most of that growth still ahead of us, all of it is. And everything is being disrupted in the process.

FROM FACTORY TO FRIDGE: INSIDE COCA-COLA'S SUPPLY CHAIN

**By Unknown
(manufacturingglobal.com, February 2015)**

Coca-Cola is probably the world's best-known brand with a presence in every country on earth. We reckon that you would be hard pushed to walk into any supermarket, grocer or retail outlet without finding one of its products. So how does a company with such a massive footprint manage its supply chain?

Wendy Manning, vice president of customer logistics as Coca-Cola Enterprises (CCE) gives us some insight by talking about the distribution of products across Western Europe.

Manufacturing Global reveals 14 key facts about Coca-Cola's supply chain.

You are likely to see at least one Coca-Cola product in supermarkets or newsagents the world over.

CCE is responsible for manufacturing and distributing a wide range of soft drinks under the Coca-Cola umbrella from Coke itself to Fanta, juices, water, sports and energy drinks.

Its operations span eight territories in Western Europe, delivering more than 600 million cases of product to retailers every year, which are then sold to over 170 million consumers.

So how is this vast operation handled? How does the company ensure that every bottle produced makes it into the hands of consumers on time and at the highest quality? Well, according to Manning it all starts on the factory floor.

CCE has 17 state of the art manufacturing sites across Europe and 95 percent of drinks are made in the country in which they're sold.

CCE also keeps much of its sourcing local, helping to keep the supply chain short and fast, which is important for keeping up with demand.

Once the ingredients and components arrive through the factory doors, the focus is to produce high-quality drinks, in the right quantity and at the right time, in order to meet customer demand.

CCE's factories run some of the fastest production lines in the world.

The company is able to get drinks from its factories to supermarket shelves within 48 hours.

CCE is continually looking for new investments to improve the efficiency of its operations – it recently opened a new €20m automatic storage and retrieval system at its distribution centre in Dongen, The Netherlands. The new facility is designed to hold and automatically move pallets of bottles and cans – enabling CCE to more efficiently serve the needs of customers, as well as to maximise the cargo space used in trucks.

The company is also continually testing new technology and innovations, such as Bluetooth beacon technology and 3D printing.

Sustainability is key to developing an efficient supply chain.

Throughout the manufacturing process, sustainability and efficiency are always front of mind. At the Wakefield production facility in the UK, CCE recently introduced a new combined heat and power system, which will save 1,500 tonnes of CO_2 every year. This kind of innovation has helped the company reduce its operational carbon footprint by 23 percent since 2007.

While the technology and machinery in CCE's factories is undoubtedly crucial to getting bottles out and into the market, its people are just as vital. "Our 166-person strong logistics team provides exceptional day-to-day operational support seven days a week, 364 days a year to ensure on-shelf availability. It is this team that oversees all operations and ensures that once bottles are filled, each and every one makes it onto the trucks and on to the roads," says Manning.

> The operations of Coca-Cola Enterprises (CCE) span eight territories in Western Europe, delivering more than 600 million cases of product to retailers every year, which are then sold to over 170 million consumers.

The job doesn't finish once bottles and cans are on the road.

Once products are delivered to the stores, the company also has a role in ensuring that bottles make it all the way to the shoppers' fridges. The company's marketing departments has exceptional relationships with retailers to ensure that in-store merchandising makes Coca-Cola products easy to find.

"Throughout the journey of our bottles, it's important that we communicate with our retail partners, especially because retail can be unpredictable and even the smallest changes, such as the weather, can affect shopper behaviour. Our production systems are networked to allow us to raise or lower capacity, allowing us to meet demand peaks (expected or unexpected) by flexing up production at several sites if needed. And we're fully prepared for exceptional levels of demand, for example during Christmas or major sporting events like the Olympics," explains Manning.

One way the company remains close to its customers is by promoting closer collaboration to ensure it's delivering what they need, when they need it and in a way that works for them. For example in 2012, it pioneered a unique 12-month job swap between 'rising stars' of CCE and one of its customers, Tesco. Not only did this add value to the careers of the individuals involved, but it also proved an effective means for sharing knowledge and insight between the businesses, helping to align strategies and develop plans to drive sales.

From the beginning of each bottle's journey when raw ingredients enter the factory, to the very end when it is chilling in the fridge; collaboration, sustainability, innovation and efficiency are the key factors that make that factory to fridge journey seamless and successful. *RF*
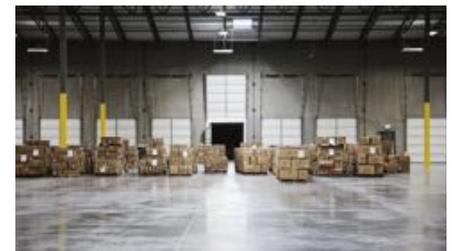
AN AIRBNB MODEL FOR INDUSTRIAL STORAGE

**By David Z. Morris
(businessinsider.com, October 2015)**

A lean operation with a brilliant idea wants to crack the L.A. market during the spring. Sounds like a slam dunk, but they don't want to commit to a long warehouse lease while they're still getting a foothold. Meanwhile, a Christmas-decoration warehouse sits largely empty.

It's a classic missed connection - and it's common.

"At any given moment," says Karl Siebrecht, "There are many, many businesses out there who have too much space, while other businesses don't have enough."

Siebrecht is trying to solve that problem with Flexe, a warehousing marketplace he helped found in Seattle in 2013. Just as Airbnb turns unused guest rooms into a commodity, and eBay lets you sell grandma's dusty porcelain, Flexe's mission is to connect partially or temporarily empty warehouse space with companies that need short-term inventory storage.

At any given moment there are many, many businesses out there who have too much space, while other businesses don't have enough. Flexe is trying to solve that problem with, a warehousing marketplace he helped found in Seattle in 2013. Just as Airbnb turns unused guest rooms into a commodity, and eBay lets you sell grandma's dusty porcelain, Flexe's mission is to connect partially or temporarily empty warehouse space with companies that need short-term inventory storage.

The biggest obvious fluctuation in warehouse needs comes during the holiday shopping season, when plenty of retailers need all the space they can get. But other cycles are more complementary—you're not going to sell much garden equipment in the Northeast in January, so you might as well let someone store scarves in your space. In sectors like toys, hit-driven boom and bust cycles create unpredictable peaks and valleys in warehouse demand.

Then there are the deeper trends making flexibility more important. As e-commerce continues to expand, warehouses and distribution nodes are moving ever closer to the center of the retail equation. Meanwhile, product life cycles are shrinking, and long global supply chains continue to make true just-in-time planning tough.

With an eye on those changes, Siebrecht is thinking bigger than temporary storage for Halloween costumes. He wants Flexe to transform how companies think about warehousing as fundamentally as Amazon Web Services changed thinking about data, shifting the model from one of big fixed costs to services that can be quickly turned on and scaled as needed.

Flexe, whose revenue is based on transaction fees, may have its work cut out for it in changing minds and habits. In September, the supply chain researcher SCM World found that only 20% of respondents in consumer products and retail felt that on-demand "Uberisation" was important for the future of their operations. That's double the positive response from last year, but numbers were even lower in other sectors.

And while Flexe seems to be the only company building a peer-to-peer commercial warehousing marketplace, it has fairly direct competition from companies like Cubesmart, which offers short-term leases on warehouse spaces it owns and manages. That model, though, isn't as cost-efficient as reselling excess capacity, or as granular—Flexe lets customers lease space by the pallet. It also integrates their goods into a warehouse's existing labor flow, meaning they don't have to provide their own workers or forklifts.

But the fundamental logic of the marketplace model may be its most powerful edge. Consider that while still-tiny Flexe has over 200 U.S. partner warehouses after only two years, Amazon, which has thrown its massive weight behind building a shipping network, has only around 98.

"It allows you to potentially have this virtual network of facilities," says Siebrecht, "To push your inventory further out into the marketplace, without investing tons and tons of capital."

Shared space wouldn't allow for the elaborate automation needed to fulfill Amazon's breadth of products, but Siebrecht envisions something almost as effective—companies offering same-day shipping on a few top sellers during peak season, all from temporary micro-distribution centers. That could have a big impact in the heated same-day shipping market, where Google's Express service is now going head to head with Amazon. *RF*

FIVE AREAS OF TECHNOLOGY APPLICATION TO AID IN LOGISTICS VISIBILITY AND COMMUNICATION FOR EN ROUTE DISRUPTIONS

By Adam Robinson
(cerasis.com, November 2015)

Many shippers are still using manual methods, like excel, email, and phone calls to keep track of their transportation budget. However, simply applying a little bit of technology in transportation, such as a transportation management system rich with the ability to automate and have visibility into shipments and shipping activity, can aid in creating a competitive advantage.

Using Technology to Provide Logistics Visibility to Shipments and Communicating en Route Disruptions

As society grows more dependent on information exchange between companies and customers, the issue of supply chain and logistics visibility becomes prominent for companies. Modern shipping companies have cited visibility as one of their top priorities for optimising the supply chain. However, visibility is commonly misconstrued as simply order tracking. However, logistics visibility actually can be used to provide insight into daily shipping processes, adjust shipping practices to account for changes in demands, and build stronger customer service relationships. Take a look at some of the best practices for using technology to provide better logistics visibility into shipments and monitor en route disruptions.

Consider Differing Fulfillment Models

Modern trade often crosses international boundaries, and trade across borders may require upwards of 20 handoffs to get the destination successfully. However, some products as part of a single shipment may also be coming from domestic locations. To successfully monitor these processes, visibility tools should take international versus domestic time requirements into consideration. Furthermore, this will help reduce delays from issues in one type of fulfillment model.

For example, trade from a single port may become congested. If the logistics visibility

tools identify this congestion, incoming shipments can be diverted to a less-congested port. As a result, disruptions and distressed shipments are lessened.

Assess Data Quality

Although data can be collected automatically across all shipment processes, the quality of data greatly affects its ability to enact change across supply chain practices. Unfortunately, part of the problem with using incorrect data lies with the assumption of all data being of high quality. Warehouse managers should thoroughly screen and assess the quality of data. However, the amount of data makes this aspect of data collection and screening impractical for manual analysis.

An automated transportation management system (TMS) can effectively screen and manage incoming data. Data which points to inefficiencies and potential disruptions can be quickly located, flagged for input from a manager, and used to change the supply chain practices. For example, data about weather delays could trigger the shipment of the same item from an alternate location where the delay in shipping the order would be less than the time required to get the original order from the area with unfortunate weather to the destination.

Furthermore, customers will see what problems cause delays in their shipments. As a result, customers will be less likely to contact the company about the order. However, the potential to cancel an order for a delay always exists. This brings us to the next point, enhancing logistics visibility back to the point of origin.

> As society grows more dependent on information exchange between companies and customers, the issue of supply chain and logistics visibility becomes prominent for companies. Modern shipping companies have cited visibility as one of their top priorities for optimising the supply chain.

Point of Origin to Delivery Tracking

For international shipments, the point of origin of shipment comes under the scrutiny of the US Customs and Border Protection (CBP). Failure to provide accurate point of origin information about a shipment will result in delays, penalties, and possible denial of entry to the US for international shipments. This represents a major disruption in the flow of shipments across the supply chain. However, automated tracking and logistics visibility from the point of origin eliminates this concern. As a result, imports will suffer fewer setbacks and deliveries will be less likely to depart from the original, estimated date of delivery.

Many different forms of automated tracking exist, such as RFIDs and bar codes. Furthermore, robotic picking and shipping machines eliminate the human element in processing an order. These automated processes can also be used to print and apply shipping labels, which further reduces costs and possible delays in the shipment and delivery of an item. Moreover, automated tracking helps ensure compliance measures are met as required by the CBP. For example, import and export records can be immediately accessed upon request or on a recurring basis to be sent to the appropriate official at the CBP.

Gather Information in a Central Location

Although various methods and technologies exist for the tracking of shipments, the information lacks value if not kept in a central location. The central location of data or information hub provides companies with the opportunity to use correlations between existing problems or delays to reduce future delays. Furthermore, the collection of this data can be analysed to determine how to best address a given problem.

For example, an information hub may contain data from ERPs, the TMS, and the WMS. Ultimately, the information hub provides insight into all of the possible factors, which may be affecting a given shipment. If shipment A has suffered a setback due to a warehouse emergency, nearby personnel and drivers can be diverted to assist with returning the warehouse to maximum efficiency. As a result, the shipments from that specific warehouse can be returned to on-track status, which reduces distressed shipments.

Online Shipment Tracking and Customer Service Relationships

Many modern retailers offer shipping status tracking services within their websites, which helps drive traffic to the retailer's site and improve customer service relationships. However, online shipment tracking relies on information from the respective shipper to ensure all information is up-to-date and reflects the accurate location and status of the shipment.

To take advantage of this trend towards retailer-website tracking capabilities, the supply chain must be willing to share data about a given shipment. Essentially, the entire premise of logistics visibility rests on the concept of sharing information about a given shipment. However, the sharing of data in this respect helps to build strong customer service relationships, which enhance a business's reputation and drive the supply chain forward.

Visibility in the supply chain is the top priority for all involved in supply chain processes. Visibility helps reduce costs across the supply chain by maintaining communication between customers and businesses. Furthermore, visibility helps reduce costs from penalties and delays when shipments become disrupted en route. Ultimately, visibility in the supply chain is a tactic to save money and improve supply chain efficiency by making an entire organisation, not individual processes, accountable for possible delays. As a result, customers will have a higher degree of satisfaction with the service. *RF*

TOP TEN GLOBAL SEAPORTS

**By Unknown
(supplychaindigital.com, October 2015)**

The prestigious title of being the world's biggest or busiest seaport has always been contested between numerous ports over the years due the cumbersome task of working out how a port is bigger or more 'busy' than another.

10 - Port of Felixstowe, England

It may come as a slight surprise to see Felixstowe on the list, but it is the UK's largest container port and deals with nearly half of Britain's containerised trade. Work has also started on expanding berth 9 so Felixstowe could move up future lists.

9 - Port of Mombasa, Kenya

This seaport serves as a gateway to eastern African countries such as Uganda, Rwanda, Burundi, DRC, and Southern Sudan. Port of Mombasa encompasses Kilindini Harbour and Port Reitz on the eastern side of the Mombasa Island and the Old Port and Port Tudor to the north. Facilities include 16 deep water berths and two oil terminals.

8 - Port of Busan, South Korea

The Busan Port Authority (BPA) has only been running the Port of Busan for a decade,

but in that time the port has developed into one of the world's leading ports. Busan handled over 17 million containers in 2012 alone.

7 - Port of Hamburg, Germany

The Port of Hamburg managed to achieve above-average growth rates both in cargo-handling operations overall and in container traffic last year. Strategically placed 110km from the North Sea and with a total handling volume of 140m tonnes, Hamburg is set to further increase its market share in Europe.

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6 - Port of Santos, Brazil

This Brazilian facility is the busiest container port in Latin America and therefore vital for the export of goods from the continent. For example, the Port of Santos exported 12.8 million tonnes of sugar in the first eight months of 2013 alone.
5 Port of South Louisiana, USA
Sprawled a staggering 54 miles along the Mississippi River, the Port of South Louisiana is the largest tonnage port district in the western hemisphere. The largest port in the United States sees over 4,000 ocean-going vessels and 55,000 barges call at the port each year.

4 - Port of Ningbo-Zhoushan, China

The port has remained the second in cargo throughput in China and has 309 productive berths. The rapid development of Ningbo-Zhoushan has also seen throughput capacity and cargo throughput all surpass 100 million tonnes. This huge port is also set to expand further in the coming years.

3 - Port of Rotterdam, Holland

The Port of Rotterdam used to have the title of world's busiest port in terms of cargo tonnage, but was overtaken by Far East counterparts in recent years. It is still by far the biggest seaport in Europe though- the 40 kilometre facility deals with an annual throughput of 450 million tonnes of cargo a year.

2 - Port of Singapore, Singapore

Accounting for one-seventh of the world's container transhipment throughput and having handled 32.24 million TEU's of containers, the Port of Singapore is a truly giant port. Also one of the globe's largest refrigerated container ports, Singapore is connected to more than 600 other ports around the world.

1 - Shanghai, China

Shanghai's seaport covers the size of 470 football pitches and handled more than 736 million tonnes of cargo in one year, making it the busiest port in the world. The port has in no small part helped China leapfrog the US and become the world's largest trading nation.

Based at the gateway of the East China Sea, where the Yangtse River known as the Golden Waterway flows into sea, Shanghai holds a vital location for foreign trade. In fact, the annual import and export trade throughout Shanghai accounts for a quarter of China's foreign trade in terms of value.

With Shanghai's increasing expansion and China's breakneck economic growth, the port is set to remain at the top of the list and keep the title of being the world largest and busiest port. *RF*

WHAT PETER DRUCKER HAD TO SAY ABOUT AUTOMATION

By Rick Wartzman (hbr.com, November 2015)

In discussing his new book, Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots, the journalist John Markoff pointed out how polarising the subject of automation and its effect on employment tends to be.

"You can go from the International Federation of Robotics on one side, which argues that we are on the cusp of the biggest job renaissance in history, to Moshe Vardi, a Rice computer scientist, who argues that all human jobs will be obsolete by 2045," Markoff observed. "Which group is right?"

If Peter Drucker were around, I don't think he'd hesitate to serve up an answer: Neither.

Drucker, who had watched this struggle play out many times over many years, believed that the inexorable march of machines was neither a panacea nor a complete catastrophe. And he was wary of any analysis that tipped too far in one direction.

"The technology impacts which the experts predict almost never occur," Drucker wrote in his 1973 classic Management: Tasks, Responsibilities, Practices.

Indeed, Drucker viewed automation as a decidedly mixed bag—a lift for those fortunate souls with the knowledge and skills to take advantage of the shifting landscape of work and a huge challenge for many others invariably left behind.
One of Drucker's first looks at this double-edged dynamic came in 1946, when he visited the Mississippi Delta and witnessed the mechanical cotton picker replacing laborers in the field—for better as well as for worse.

"It is easy—and very popular in the Deep South today—to see only one aspect of the technological revolution through which the Cotton Belt is passing: the removal of the dead hand of the cotton economy and plantation society, the establishment of a sound agriculture and of a better balance between industry and farming, higher incomes, better living standards, the end of sharecropping—in short the final emancipation of both white and colored from slavery," Drucker reported in Harper's magazine. "It is also easy to see only the other aspect: dislocation, the suffering, the uprooting of millions of people who will lose their homes and their livelihood.

"However," Drucker added, "the full picture, as in all technological revolutions, emerges only if both—the better life for those who can adjust themselves and the suffering of those who are pushed out—are seen together and at the same time."

Over the decades, as agriculture gave way to manufacturing and much of manufacturing was supplanted by knowledge work, Drucker worried ever more about those who were being "pushed out." He feared that they would lose not only their income, but also the basic sense of dignity and fulfillment that comes from putting in a solid day's work.

The "shrinkage of jobs in the smokestack industries and their conversion to being capital-intensive rather than labor-intensive, that is, to automation, will put severe strains —economic, social, political—on the system," Drucker warned in his 1986 book The Frontiers of Management.

From his earliest writings to his last, Drucker offered the same prescription to deal with such hardship: the creation of meaningful opportunities for lifelong learning. After all, he wrote in 1955, "if there is one thing certain under automation, it is that the job . . . will change radically and often."

Of particular note now—in an age where artificial intelligence threatens to upend the careers of even the most well-educated white-collar workers—Drucker didn't preach the importance of lifelong learning for any one type of occupation. Everyone, he thought, must continually be prepared to take in and master new ways to approach their job.

"This will be true in all areas of the organisation: rank and file, office work, technical and professional work, managerial work," Drucker asserted. "On every level, adult education . . . will be needed."

Making this happen was, in Drucker's eyes, a joint responsibility. The public sector has its part—to make sure that "schools and employing institutions . . . work together in the advanced education of adults."

"School," Drucker wrote in 1993's Post-Capitalist Society, "has traditionally been where you learn; job has been where you work. The line will become increasingly blurred."

Employers also have their role, including "active and energetic attempts at retraining for specific new job opportunities," as Drucker put it. And each employee must step up and be ready to embrace what's being taught—over and over and over again. "People have to learn how to learn," Drucker advised. "No one is allowed to consider himself or herself 'finished' at any time."

These concepts are not, in and of themselves, earth-shattering. But they are extremely difficult to execute, for they require from all parties—educators, executives and individual employees—attributes that are distinctly human: vision, heart and courage. As Drucker knew all too well, none of that comes with the simple press of a button. *RF*

SIX KEY SUPPLY CHAIN LINKS

**By Laura Rokohl
(supplychaindigital.com, November 2015)**

Outstanding customer service sets the standard for companies to differentiate their value proposition around the world. As oil prices remain low, a chain reaction has opened up opportunities to improve margins and strengthen market position. Managing the unknown more effectively and being more flexible across an organisation will reap greater rewards.

With increasing pressure to respond to demand and provide quality products on time, smart businesses are optimising six key supply chain areas and embracing cutting-edge software to achieve competitive advantage.

By being more demand-driven, business can maximise market potential while mitigating risk. To do this effectively, organisations must address six key links in the supply chain to achieve best practices:

Improve customer service
Customer service levels are measured by on-time shipments of the right quality product in the appropriate quantity.

Decrease inventory
Demand-driven companies are able to optimise their inventory and reduce inventory buffers, which are typically kept at higher levels than necessary in order to maintain good customer service levels.

Optimise production
Production lines need to perform smoothly to ensure batch product quality is maintained within specifications. Having an effective supply chain management system that can optimise batch sequencing means production is more likely to run efficiently, less time is spent in setups and clean-outs, and delays or disruptions can be addressed proactively, before they can impact customer orders or incur unnecessary expedited transportation costs.

Be agile
The ability to respond quickly to planned and unplanned supply chain shocks (i.e. equipment failures, raw material availability, labour shortage, stock-outs, unexpected demands, new orders, etc.) is essential to remaining profitable. By being equipped to analyse different responses to the unexpected, companies can choose the most appropriate response to issues and take corrective action that secures plant profits and meets customer contracts.

Reduce costs
Procurement, working capital, inventory storage, distribution and labour are key areas to potentially reduce supply chain costs.

Manage materials
Managing fluctuating raw material costs is important in order to set the right price expectations to customers. Robust planning and effective communications will protect customer relationships, which can have a significant impact on margins.

Cutting-edge, end-to-end supply chain software improves forecasting, enables greater collaboration and assists with customer prioritisation. Empowering operations with easy to use planning and scheduling tools facilitates better decision-making to respond quickly to disruptions in plant operations.

Many companies have adopted AspenTech's supply chain software solutions as the link to optimise end-to-end supply chain capabilities. Aspen Supply Chain Planner can navigate supply chain complexity and identify problems in the plan that needs urgent attention. The intuitive interface enables planning to be performed easily so that planners can determine the optimal production plan and maximise the potential of assets across the network. Using powerful analysis capabilities, planners can develop and evaluate an unlimited number of 'what-if' scenarios to quickly optimise inventory management, minimise transportation costs and balance supply with demand. This can be done knowing that the software tools accurately model production activities with sufficient fidelity to allow the Planner to accurately and realistically evaluate alternatives.

> With increasing pressure to respond to demand and provide quality products on time, smart businesses are optimising six key supply chain areas and embracing cutting-edge software to achieve competitive advantage.

Aspen Plant Scheduler is a dynamic tool that enables schedulers to react to operational changes within minutes. Crucially, schedulers can personalise their workspace, simultaneously view inventory levels and immediately see the impact of changes for a common group of production activities or facilities. This greater visibility means they have access to information they need to gain detailed insights into production scheduling, such as raw material availability, equipment constraints, batch dependencies and, ultimately, make better decisions to manage the plant schedule more effectively. In addition, the Campaign Manager feature in Aspen Plant Scheduler can be used to easily define preferred sequences for each production facility, enabling the entire sequence to be scheduled all at once when appropriate for a particular asset.
Profitable value chain
Many companies survive based upon their ability to react quickly to market forces and offer added value, such as impeccable service, quality products and on-time deliveries. Therefore, they require knowledge of best practices and on-going innovation to help differentiate their business and stand out from the competition.

Having a holistic view of the supply chain network means it is possible to build an optimal procurement, production, distribution and inventory plan, which will profitably meet customer demands. With integrated planning and scheduling software, plant complexity is mitigated and key decision-makers can easily analyse all costs and constraints to ensure a globally optimal plan.

To meet financial targets, integrated supply chain software helps companies cut costs and produce products faster and more efficiently to meet demand. By focusing on asset optimisation and tackling the six key areas of best practice, companies can gain the upper hand and significantly improve customer service across the entire value chain. *RF*

USING SUPPLY CHAINS TO GROW YOUR BUSINESS

By Daniel Isenberg and Timothy Coates (hbr.com, November 2015)

Until a few years ago Steve Cronce's Raphael Industries did $1 million dollars a year of specialised industrial painting for customers within driving distance of their plant in Milwaukee, Wisconsin. One of them happened to be GE Healthcare, which sent Raphael "dead" X-Ray tube parts for re-coating and re-commissioning. Challenged by other entrepreneurs in Scale Up Milwaukee's Scalerator program to come up with a plan for rapidly ramping up his business, Cronce wondered: "What if I redefined Raphael as a strategic link in the global medical imaging supply chain, rather than as a paint shop?" This supply chain epiphany is taking Raphael toward $10 million of work a year by burrowing into GE's global network as well as serving its competitors. He is poised to become the leader in this segment of a multi-billion dollar market. "By serving as GE's and other equipment makers' supply partner, the whole world is now my scope. I am no longer limited by geography."

This story leads us to a question: Which sounds sexier: sassy Silicon Valley startup or nose-to-the-grindstone supplier? No doubt the tech startup wins the popularity contest hands down.

But let's change what we're asking: Which has the better potential to scale up and create long term value for customers,

owners, investors, and employees? According to a study by the Center for an Urban Future, small businesses that win large supply contracts report average revenue growth more than 250% in the two years after their first sale. The reality is that the vast majority of successfully scaled ventures are not mythical unicorns with billion dollar paper values, but workhorses that plug along, steadily producing results year after year.

Although big, global supply chains certainly have their own dynamism, they mostly evolve incrementally through minnovation rather than disruption – and thus get short shrift in the business media and amongst aspiring entrepreneurs, hungry to create successful ventures. But entrepreneurial know-how and energy can work very effectively in the context of plugging-in as a supplier, as Steve Cronce and thousands of others are learning.

Taking this path isn't a cake walk, however. Corporate procurement processes are opaque, secretive, and can be influenced by political pull as well as pure performance. Here is some advice on how to tap into supply chains for successful scale-up:

Reveal more than is comfortable. Like it or not, the reality (in supply chains, as elsewhere) is that power is asymmetrical – large customers typically have more clout than you do, and they know it. One result is that they keep their cards close to their chests about what they are looking for (at first), while expecting you to reveal everything – your finances, pricing, ownership, human resources, production processes, quality assurance, customer service procedures, KPIs, and existing customers. Not only does this take time (corporate customers in IBM's free Supplier Connection portal require advance answers to over 140 questions before they will even consider you), frankly, it is downright frightening for most of us.

Jorge Rodriguez-Gonzalez, founder of PACIV in Puerto Rico, flipped this dynamic on its head. Compliance is crucial for pharmaceutical makers such as Abbott and Amgen – a "Form 483" warning from an FDA inspector can shut down a drug facility in an instant and even land top executives in jail. Thus, the supplier of compliance services is of strategic importance. As an industry newcomer, to gain the absolute trust of his first customer, Eli Lilly, Rodriguez-Gonzalez took transparency to a new level: Not only did he reveal his exact labor, materials costs, and profits, Rodriguez-Gonzalez even sent the client his personal income tax returns, so that Lilly purchasing executives would have no doubts about the veracity of his representations. In the clubby world of pharmaceutical purchasing executives, PACIV's reputation for transparency spread, setting a higher bar that his competitors begrudgingly were now asked to jump over.

Manage culture by setting expectations appropriately. Global supply chains can cut across many "cultures": national, industry, technology, market segment, and more. Innovative, proudly geeky Norwegian software company,

Trolltech, an open-source pioneer, landed a contract with the mobile division of Sharp, the Japan-based consumer electronics global powerhouse. Ultimately, the contract helped Trolltech break into the then-nascent mobile handset supply chain, go public, and later, to be acquired by Nokia for $153 million.

> Although big, global supply chains certainly have their own dynamism, they mostly evolve incrementally through minnovation rather than disruption – and thus get short shrift in the business media and amongst aspiring entrepreneurs, hungry to create successful ventures. But entrepreneurial know-how and energy can work very effectively in the context of plugging-in as a supplier

But Trolltech almost pulled the plug on the "Project from Hell," as they called it, because the style and values of the Scandinavian technology supplier and the Japanese manufacturer led to conflict after tense conflict. What helped Trolltech ultimately save the relationship was learning how to set expectations appropriately in light of the divergent cultures. They realised they needed to invest time, and talent, in

analysing the implications of corporate cultural differences on their ability to supply the goods, not just win the first contract or certification. That meant ensuring their people spoke the language of large consumer electronics supply chains, understood how manufacturers think, and had the perspective and adaptability to fit into a long line of actors from programming in Scandinavia, to manufacturing in Japan, to the consumer in New York.

Manage the arduously long sales cycle. One of the most important realities of tapping into supply chains is: it takes time. An initial sales cycle can easily mean waiting one-and-a-half to two years before receiving a first commercial order. Ane Ohm, CEO of HarQen, a startup supplier of automated recruiting systems in Milwaukee, and her staff held over 100 patience-sapping meetings with a Fortune 500 customer before getting a first contract. Luckily, this single contract was pivotal in helping HarQen reposition themselves from a technology-driven voice response company, to a market-driven recruiting systems one.

Of course, time is money, and in light of the long selling cycles, creative financing is often the name of the game: banks will sometimes step up to finance part of a firm contract with a large customer. Private investors might buy some equity or lend against future royalties if they can see the customer is serious. If you have an innovative edge and are willing to give attractive discounts, sometimes customers will make pre-payments against purchases; even if they are small they can relieve the cash pressures. In fact, advanced payments may be just the kind of proof that banks or equity investors need to open their pocket books.

If you have one big customer, enlist them to help you grow. When one customer is responsible for the lion's share of your sales, it's like golden handcuffs. The challenge is to cast off the handcuffs while keeping the gold. Sometimes this means utilising your one big customer to get others. This was the situation facing Collins Consulting, a Chicago area provider of contingent staffing services. For more than a decade Collins had almost exclusively supported IBM's commercial and government businesses. Collins worked primarily on IT related work, such as systems integration and software development. When an opportunity arose to work on a financial audit and accounting contract, IBM helped Collins broaden its skill set and diversify its offerings into financial management. IBM then recommended Collins to KPMG, a competitor, when the latter won a large contract with the Department of Defense. Collins' new capability, matured and developed by a dominant major customer, is now a competitive and profitable business area for the company. It is true that some large customers will jealously guard you in a quasi-exclusive relationship. But more often than not, you can persuade and use the customer to help you work with even their arch competitors, to their own advantage as well as yours.

Partner with procurement. Corporations naturally build impersonal procurement policies and processes to support their growth. On the other hand, every successful sales person knows that personal relationships help win new business. In 2006, Havens & Company risked losing 30% of its business when IBM acquired Havens' major customer, KeyMRO, and naturally reassigned Havens' sales contacts at KeyMRO within IBM's large organisation. Havens, accustomed to selling benefits services to Fortune 1000 human resources departments, found its key contact person assigned to IBM procurement instead. Nonetheless, Laura Havens, president and owner, recognised an even bigger opportunity to partner with IBM's large corporate procurement organisation. She took advantage of the trust with the now-purchasing executive, who became their internal advocate with HR leaders across IBM's divisions and geographies. In 2011, Havens' collaboration with IBM procurement paid off, winning Havens four significant projects.

Corporate purchasing is not as all-powerful and monolithic as it might seem from the outside. As Havens and many other corporate suppliers have learned, just because you have a contract with one part of the business doesn't mean another part works the same way. Many corporations have at least some elements of purchasing which are decentralised, meaning the different units may have separate sourcing criteria, payment terms and supplier management practices, creating separate supply opportunities.

Innovate and invest, even when it hurts. We know it sounds almost contradictory because the media is replete with stories of "disruptive startups," but most small companies are loath to make innovation investments, with fewer than 15% evidencing tangible innovative activity in their first four years. In 2004, when ZeroChaos, a provider of contingent workforce solutions, began courting IBM as a customer, IBM was concerned with losing the war for engineering talent to new startups such as Yahoo and Google. After listening to IBM executives' concerns, CEO Harold Mills invested over a year of the smaller company's limited bandwidth to build a "virtual bench" of technical talent dedicated to IBM, a product they named "Blue Direct." They were able to recruit 200,000 developers and product designers, allowing ZeroChaos to communicate directly with potential recruits about new and relevant IBM initiatives, and giving IBM access to this critical talent pool. Signing up IBM as a paying customer allowed ZeroChaos to expand from an initial contract in the US to now supporting IBM in 13 countries. Today, ZeroChaos is a $3 billion company and as Mills says, "a significant amount of that growth was enabled by the IBM partnership."

Entrepreneurial opportunity is not limited to disruptive startups. While the idea of embedding yourself in a vigorous supply chain may not seem so exciting, if done well, it can be a powerful way to scale-up for success. *RF*

SUPPLY CHAIN KPI'S – DATA YOU NEED TO KNOW

By Frank Castiglia (linkedin.com, October 2015)

Accurate Measurements and Meaningful Metrics - One Way to Improve

Everyone is searching to find ways to evaluate key performance indicators (KPIs) for their supply chains today. It makes quite a bit of sense, given that productivity, savings and waste stream are on everybody's radar screen.

The buzz over KPIs can reveal a lot about the health of your operation. KPIs also can signal a need for change and improvement. Consider the following:
- Your business has changed or you modified certain parts of your business.
- You question whether the data is complete or even accurate.
- You're not seeing progress in the areas that were pinpointed for improvement.

A change may or may not be necessary. So before doing anything, it is important to make sure that you are measuring the right areas and achieving the desired results. To do so, follow these six steps:

Define what drives your business. Your organisation must determine the metrics that your leaders and customers value the most. Don't get overwhelmed by all the possibilities. Identify items that can be "levers" in the business, such as percentage of on-time pick-up and delivery, exception-free shipments, cost per mile, out-of-stock rate and order-to-delivery cycle. KPIs vary from company to company and department to department based on organisational goals. Select the metrics that are most vital to your organisation and start to manage them.

Extract data and create reports. The biggest challenge many companies face is accessing data. However, with an enterprise resource planning (ERP) system or a transportation management system (TMS), you can create the reports necessary to identify trends and assess the health of your supply chain.

ERPs are a useful tool in gaining visibility to potential trouble spots in your supply chain. A TMS provides visibility to events the system captures, from order entry to order updates, carrier activity, and other subsequent actions, through delivery. A TMS offers a customisable suite of services to meet all the demands of your business and

lets you focus on your core competencies.
- Web-based order entry and electronic load tendering.
- Web-based track and trace and event management.
- Web-based domestic and international shipment visibility.
- Customised reporting and data analysis tools.

Confirm data integrity. Nothing can weaken your supply chain quicker than inaccurate data. It is imperative to get the right data so you can make effective decisions. If you create reports that are inaccurate, nobody will rely on them and you won't be able to hold people accountable for results. Invest the necessary time up front to capture the data and ensure its accuracy.

Prepare analysis and make decisions. The saying "What gets measured gets managed" seems tailor-made for the supply chain world. Measurements alone will not be the solution, but if you don't measure, you have virtually no chance of making an improvement. The solution can be found in the corrective actions that you take and the resulting improvements. Identifying trends and deviations can prevent needless costs and service problems.

Establish goals and objectives and communicate them. Identify the weak areas in your supply chain and develop a strategy to strengthen them. The goals should be aggressive yet obtainable and be supported by senior leadership. People or departments should own the process improvement and take responsibility for achieving the targeted results. Supply chain managers need to encourage and support process changes, and the frontline team must commit to making the adjustments.

Maintain goals. Don't make measurement a one-time event. Make sure there is accountability and that people keep their focus over time. Monitor your results, and continue to raise the bar to consistently manage your supply chain to new levels.

What is the purpose of creating KPIs?
- To measure performance
- As a measurement system designed to change behavior
- To create and ensure alignment with overall business goals and strategy
- As a driver of future improvement

Order Fill Rate:
An order fill rate is defined as the percentage of orders that can be filled based on the inventory at hand.

Orders filled complete on the first shipment / Total Orders Shipped.

Evaluating the order fill rate percentage helps to determine how balanced inventory is and helps to forecast the amount of sales that can be met. A high fill rate signifies a better ability to meet sales requests, keeping customer satisfaction high.

On time delivery/shipments:
Depending on a company's specific business, either on-time delivery or on-time shipments may be more important than the other. However, the rationale for measuring them is the same.

An on-time shipment is classified as a shipment that is off the dock and in transit on schedule. An on-time delivery is one that reaches the recipient on schedule.

Number of orders shipped or delivered on time / total number of orders shipped.

Customers expect on-time deliveries and shipments. For this reason, it is in everyone's best interest to ensure that on-time delivery is as high as possible so that the supply chain runs smoothly and satisfaction remains high.

> Everyone is searching to find ways to evaluate key performance indicators (KPIs) for their supply chains today. It makes quite a bit of sense, given that productivity, savings and waste stream are on everybody's radar screen. The buzz over KPIs can reveal a lot about the health of your operation. KPIs also can signal a need for change and improvement.

Perfect order rate:
The perfect order rate is a higher level performance measure that is formed by a combination of performance markers. It is a dynamic KPI that makes it possible to determine if various factors have successfully worked together, including if a shipment has been delivered to the right place, at the right time, in the right condition, to the right customer and with the correct invoice.

Measuring the perfect order rate offers a holistic perspective on delivering goods. A customer will always expect an order to be perfect and poor performance in one aspect of a transaction can overshadow otherwise seamless customer service. This is why the perfect order rate is so compelling — it helps to ensure customer satisfaction by taking into account several related factors.

Access to data has emerged as key to helping companies find answers to complex business questions like the success of the supply chain. The above KPIs guide companies to look at both lagging indicators (statistics based on past outcomes) and leading indicators (more proactive markers anticipating future outcomes). Utilising business intelligence to assess both, it is possible to "drill down" in company data to track performance more accurately than ever before.

Measuring the overall performance of your supply chain can be boiled down to a few key questions.

Is the supply chain acquiring the things your organisation needs?

Is it providing customers with the things they need?

And is it doing it all in the right time and for the right price?

Cash Conversion Cycle:
Cash conversion cycle (CCC) attempts to measure the amount of time money is tied up in the business process starting from production to selling. CCC is calculated as:

CCC = Days of Sales Outstanding + Days of Inventory Outstanding – Days of Payables Outstanding

Working Capital Turnover:
Working capital, measured as total current assets net of total current liabilities, is a measure of money used to finance operation and purchase inventory. Working capital turnover (WCT) measures the efficiency of sales generated for every unit currency spent, and is calculated as follows:

WCT = Sales ÷ (Total current assets – Total current liabilities)

Inventory Turnover:
The inventory turnover KPI is an important indicator of supply chain efficiency. It measures how many times a year the entire inventory can be sold. Inventory turnover is calculated using the following formula:

IT = Cost of goods sold ÷ Average inventory

Carrying Cost of Inventory:
Carrying cost of inventory (CCI) measures the cost associated with holding and storing inventory over a given period of time and it is often described as a percentage of inventory value. It can also be used to determine profit that can be made on current inventory. CCI is calculated as follows:

CCI = Inventory carrying rate x Average inventory value

Each industry may offer opportunities or pose restrictions on the ability of the company to enhance the financial performance of its supply chain process. Analyzing change in KPIs can either be done by looking at the historical trends or by a benchmark against competition. When business cycle swings are large, only benchmark against competitors. *RF*

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HABITS OF MIND

THE SECRET WEAPON TO HELP YOU STICK TO YOUR GOOD HABITS

**By Gretchen Rubin
(inc.com, November 2015)**

It's been so satisfying to have Better Than Before out in the world. (And, I must admit, also very satisfying that it's a bestseller.)

It's fascinating to me to hear how people respond to it -- what ideas they find most helpful or most surprising, and how they use the habit strategies themselves.

In particular, many people have asked me for the starter kit, for people who want to launch a Better Than Before habits group, where people work on their habits together.

It's clear to me why so many people want it. For many, many people, the secret weapon of habit-change is outer accountability.

In Better Than Before, I identify the "Four Tendencies": Upholders, Questioners, Obligers, and Rebels. Your Tendency makes a big difference when it comes to how you can most easily change your habits. (To take the quiz to identify your Tendency, go here.)

The biggest group? Obliger. Obligers readily meet outer expectations, like work deadlines, but struggle to meet inner expectations, like a New Year's resolution.

Like my friend who never missed track practice in high school, but can't get herself to go running now.

Understand the Patterns in Your Behavior

For Obligers, it's often a huge revelation to understand the pattern of their behavior: When they have external accountability, they follow through. When they don't have it, they struggle.

And, once Obligers understand that external accountability is the key to sticking to their good habits, they often want to figure out ways to give themselves that crucial accountability. Which is a great idea.

One of the best ways to build good habits and happiness effectively - and also one of the most fun ways - is to join or start a habits group.

Some solutions to getting accountability -- like hiring a coach, working with a trainer, or taking a class -- work extremely well, but they carry a cost; starting a habits group is free.

Consider a Habits Change Group

For this reason, I created a "starter kit" for starting a Better Than Before habits change group.

Better Than Before habits groups swap ideas, build enthusiasm, give energy and encouragement, and -- most important -- provide accountability. (Think AA and Weight Watchers.)

People in the group don't have to be working on the same habits; it's enough that they hold each other accountable. One person might need accountability to write a novel; another, to get a massage; another, to give up fast food.

> Habits are the invisible architecture of everyday life. Research shows that they shape about 40% of our daily experiences, so if we have habits that work for us, we're far more likely to be happier, healthier, and more productive.

Track Your Habits

Another tool that I created to help people stick to their good habits is the Better Than Before Day-by-Day Journal. It has writing prompts to help guide you through ways to strengthen your habits, and helps you track your habits -- I particularly like its "don't break the chain" feature, because that approach works for so many people.

If you do form a habits group, you could use the Journal to help kick off discussion and to help people report back accurately. I don't know about you, but if I don't write something down, I forget it immediately.

Accountability can be useful for most people, but it's true that for some people (Rebels) it can be counter-productive, and for some people (Obligers), it's essential. This is a good example of something from my Habits Manifesto: We're not much different from other people, but those differences are very important.

Habits are the invisible architecture of everyday life. Research shows that they shape about 40% of our daily experiences, so if we have habits that work for us, we're far more likely to be happier, healthier, and more productive.

Change our habits, change our lives. *RF*

SUPPLY CHAIN & LOGISTICS TECHNOLOGY: 8 REASONS EVERY SHIPPER NEEDS A TMS

**By Bridget McCrea
(logisticsmgmt.com, November 2015)**

As one of the more "mature" offerings within the supply chain management software space, transportation management systems (TMS) are best known for their routing, scheduling, routing, carrier selection, load tendering, and shipment consolidation capabilities. And while these solutions have been around for a while, a recent survey ofLogistics Management readers shows that just 35 percent of shippers are using these systems as part of their overall supply chain management strategies.

On the upside, that same survey also found that 39 percent of companies planned to either purchase or upgrade their TMS during the coming year—a signal that could result in higher adoption rates in the future.

Chris Cunnane, senior analyst with ARC Advisory Group in Boston, says that his findings point to TMS adoption rates heading up to above 50 percent over the coming years, although there are still "a large number of businesses that are not reaping the benefits of TMS," he says.

With the goal of helping logistics operations better understand the benefits that TMS brings to the table, three different industry analysts outline their top reasons that every shipper should be integrating these platforms into their overall supply chain management efforts.

TMS has a proven return on investment (ROI)

According to Cunnane, an ARC survey on the ROI of TMS found that respondents indicated freight savings of approximately 6 percent with the use of a TMS application. Of these savings, nearly 60 percent of users indicated that less than 25 percent of the net savings were absorbed by the TMS. However, "many companies are using managed transportation services [MTS] providers instead," says Cunnane. "And while both TMS and MTS performed roughly the same in terms of freight savings, TMS was less risky, meaning fewer TMS users achieved negative results versus MTS users."

It helps shippers work better in the omni-channel environment

Omni-channel fulfillment, the changing nature of the global economy, and the steady growth of e-commerce are all putting more strain on the typical supply chain. E-commerce, for example, has all but eliminated geographic barriers for many companies while also making them more "global" in nature.

Granted, there are logistical and regulatory issues that accompany global shipping, Cunnane explains, but e-commerce allows customers in nearly every part of the world to view and purchase merchandise, regardless of that merchandise's physical location. "TMS reduces a number of these headaches of moving freight from origin to destination, by matching carriers and optimizing modes," he says.

> With the goal of helping logistics operations better understand the benefits that TMS brings to the table, three different industry analysts outline their top reasons that every shipper should be integrating these platforms into their overall supply chain management efforts.

It's available in the cloud

Few would argue the fact that TMS was one of the first supply chain management solutions to move into—and stay in—the cloud. With their lower barriers to entry, lower upfront costs, and easier maintenance and upgrading, cloud-based applications have taken off across a number of different supply chain solutions and platforms.

Manu Gupta, TMS practice leader at management consulting firm Capgemini, says the fact that TMS is readily available in a cloud-based option makes it attractive for new users. "The cloud gives TMS users a competitive price, low overhead and maintenance costs, and reduced headaches," says Gupta. "These features are pulling new companies in that may have previously thought a TMS was beyond their needs or too pricey."

TMS can lessen the impact of driver shortages

The truck driver shortage remains a primary concern for third-party logistics providers and the shippers they serve, according to Capgemini's 2016 3PL Study. In fact, the American Trucking Association estimates a driver shortage of 35,000 to 40,000 in 2015, and that number jumps to 240,000 in 2020.

"The driver shortage continues to become more grave for shippers," says Gupta, who sees TMS as one way for shippers to get a better picture of driver availability and carrier capacity. "We're going to start to see some pretty innovative strategies surfacing," Gupta predicts, "and Excel spreadsheets and phone calls aren't going to cut it. Shippers are going to need technology—specifically TMS—to help them make better decisions in this area."

It can serve as a valuable data repository

Companies that are still using a mix of spreadsheets, phone calls, and e-mail to manage their transportation components could be costing themselves significant money on an annual basis.

According to Gupta, companies that haven't made the move to automated transportation management should stop and ask themselves questions like: How much am I spending on shipping? What am I spending on each load? Are my customers receiving the product on time? Do I have the right levels of supply chain visibility?

"Shippers that aren't using a TMS probably may not even have access to these numbers or the answers to these questions," says Gupta. "Those shippers that do use TMS, however, have access to the dashboards, reports, and other measurements that enable good decision making and cost savings."

TMS enables a more proactive approach to supply chain management. Companies that rely on a mix of spreadsheets and manual interactions with their suppliers are more likely to run "reactive" transportation departments. In other words, key employees are more focused on putting out daily fires than they are on finding ways to work smarter, better, faster, and cheaper. Add a TMS to the equation, however, and the scenario shifts dramatically.

"There's a contingent of companies out there that have small carrier bases and that aren't necessarily concerned with the opportunities and the competitive nature of the transportation market, nor are they being proactive about seeking solutions that can give them the best cost options and performance levels across a variety of carriers," says John Santagate, research director with IDC's Manufacturing Insights.

By implementing a TMS, adds Santagate, the same shippers can streamline their transportation departments, connect their carriers to their 24/7, online networks, and improve the way they procure and manage freight.

It helps shippers enhance customer service levels

As Cunnane pointed out earlier, the typical shipper achieves a 6 percent ROI from its TMS investment. That's a $60,000 savings on every $1 million spent on freight—no small potatoes there. In addition, Santagate says that TMS users experience "softer" benefits, such as enhanced customer service levels made possible by the improved visibility, speed, and automation that the TMS provides.

In an era where customers are demanding more and more, using a dashboard to pinpoint a shipment, access a specific delivery time, or offer up an alternative can be invaluable customer service tools. "Transportation is definitely an area that can be leveraged to achieve the levels of customer service that are being demanded right now," says Santagate.

TMS is a valuable link in the digitally-connected supply chain

A good TMS not only allows shippers to manage their own costs and keep tabs on their internal metrics, but it also "hooks" carriers, customers, suppliers, and other business partners into the platform. For example, shippers can use a TMS to quickly see how specific carriers are performing in terms of on-time deliveries and customer service.

Using that information, companies can make better transportation decisions that, in turn, improve their own levels of customer service. By creating this digitally-connected supply chain, shippers can more effectively navigate in a world where mobility, cloud, the Internet of Things, and other innovations are in the driver's seat.

"Companies must be able to digitally connect with their supply chains," adds Santagate, "and TMS provides an angle for shippers small and large to capture the necessary data points, conduct analytics, and make improvements as they see fit. All of that is pretty hard to do with a spreadsheet-based system."

Higher TMS adoption levels ahead

With our industry analysts making some pretty compelling arguments in favor of TMS, and with trends like omni-channel distribution and e-commerce pushing shippers to streamline and hone their transportation components, expect to see more companies using TMS in the future.

"I definitely think that companies will be looking not only at TMS, but also at solutions that provide a broader view of the supply chain," Gupta predicts. "Shippers need to be able to look all the way up the chain to what's happening at their suppliers' factories, and that requires a broader-based technology solution that can look across the entire supply chain."

Santagate says that TMS adoption will likely increase as vendors release even more affordable solutions that offer more flexible deployment options and enhanced capabilities into the marketplace.

"The levels of TMS adoption—which we also currently pinpoint at around 35 percent —are likely to improve," says Santagate. "Up until recently, the solutions were geared more to the larger end of the market and there wasn't an abundance of options targeting mid- to lower-market shippers. As more affordable solutions emerge, we'll likely see more smaller companies testing TMS out." *RF*

YOU DON'T NEED CHARISMA TO BE AN INSPIRING LEADER

**By Ashley Stahl
(forbes.com, October 2015)**

Virtually every leader wishes they had the power to inspire people to change. That's because every leader has experienced times when they have identified a change that had to be made, devised a great strategy for making it happen, but then struggled to get people moving in the new direction.

The problem is that most leaders believe that in order to inspire other people, they must exude the uncommon charisma of someone like Steve Jobs, Martin Luther King, Jr., or John F. Kennedy. Those inspiring examples don't feel especially relevant or attainable to leaders who are not trying to build the first iPhone, end racial segregation, or send someone to the moon. What if you're just trying to change the way your people handle loans, manage a supply chain, or interact with customers?

There is a simpler way to inspire change. In recent years, social scientists led by Todd Thrash have demystified the phenomenon of inspiration. At its core, inspiration is what happens when a person feels stimulated to bring some new idea to life after becoming spontaneously aware of new possibilities. Bold visions of greatness and charismatic speeches are certainly one way to elicit that feeling. But a few years ago, we stumbled onto another way.

In a series of field experiments, my colleagues and I at Decision Pulse asked groups of managers across four different companies to anonymously submit changes they had decided to make in response to a larger change initiative. We then asked the managers in each group to view the list of decisions made by their colleagues, and to vote for the decision that had the biggest impact at their respective companies. After our experiments, a clear pattern emerged among the winning decisions. See if you can spot the winner in this set of choices below from managers at a health insurance company.

In a series of field experiments, my colleagues and I at Decision Pulse asked groups of managers across four different companies to anonymously submit changes they had decided to make in response to a larger change initiative. We then asked the managers in each group to view the list of decisions made by their colleagues, and to vote for the decision that had the biggest impact at their respective companies. After our experiments, a clear pattern emerged among the winning decisions. See if you can spot the winner in this set of choices below from managers at a health insurance company.

Decision A: "I dealt with an employee relations issue through direct coaching and performance management vs. letting that customer service manager ignore the issue."

Decision B: "I cut out layers of security for the new customer portal because it would make it slower for customers to access."

Decision C: "I chose to market the company as the leader of good health not just for the current member, but for everyone."

All three decisions exemplify sound management and logical thinking. But decision B overwhelmingly received the most votes from other managers. In fact, not one of the 19 peer raters in this experiment voted for Decision A or Decision C. What made Decision B so special?

Decision B contained what I call a "missing puzzle piece." In order to make sense of the world around us, our brains treat every situation like it's a puzzle that must be assembled. When we piece together a puzzle for "how a microwave works" or "what techie guys do," our brains store that puzzle in long-term memory. But these puzzles are fragile. When something unexpected happens, say, if a microwave suddenly makes food colder instead of hotter, or a tech geek intentionally removes layers of data security just to enhance the customer experience, our brain senses that something isn't right. The microwave puzzle or the techie guy puzzle is suddenly missing a corner piece.

What happened next is the interesting part. A part of our brain called the anterior cingulate cortex (ACC) notifies us of the error. Not surprisingly, this error makes us uncomfortable. To protect us from that icky feeling that part of our world no longer makes sense, our brains have developed an instinctive defense mechanism. Instead of trying to replace the missing piece in the "techie guy" puzzle, our brains compensate by reassembling new, unrelated puzzles. Researchers Travis Proulx and Stephen Heine have shown repeatedly that even tiny disruptions to a relatively unimportant puzzle like "how a microwave works," can stimulate our brain's ability to spot new patterns and see new possibilities in other areas. For example, when your microwave unexpectedly chills food instead of heating it, it can inspire a revelation about your marriage or your job or even your political views.

What Proulx and Heine discovered is that a missing puzzle piece not only makes us more motivated to see new possibilities, it makes us more skilled at seeing new connections and possibilities. (Perhaps that's why periods of intense creativity occur so often during the most tumultuous periods of an artist's life?)

This phenomenon is exactly what we saw in our field studies. Prior to the first round of voting on their peers' decisions, many managers said something like "I don't really see anything I can change. I'm just in finance," or "I'm out in the field, and that's more of a corporate change so…" In other words "I'm just going to keep doing what I've been doing."

But then after seeing the techie guy reduce data security or discovering that a plant manager deprioritised plant productivity improvements just to increase supply chain efficiency, the other managers in the group suddenly became aware of new possibilities for change in their own areas of work.

Over the next two rounds of experiments, almost all of the other managers in each group began making legitimate and creative change decisions. They saw new possibilities and started acting on them. Put simply, they were inspired to change.

> Virtually every leader wishes they had the power to inspire people to change.

That inspiration didn't come from big, hairy, audacious goals, lofty visions of the future, charismatic speeches, or demonstrations of their leaders' innate genius or passion. All that it required was an awareness of someone else's unexpected decision to cut back on an old thing in order to do a new thing. That is something every manager in every situation is capable of doing.

A decision to cancel football for a year is how one high school principal inspired a Texas town to get creative about saving its school. The decision to temporarily remove breakfast sandwiches from Starbucks stores is how Howard Schultz inspired employees to refocus on coffee. A decision to kill the cutting edge "Newton" PDA in 1996 is how Steve Jobs inspired Apple's engineers to begin thinking differently on their way to one of the most innovative product development runs in history.

What this all means is that change agents don't have to be brilliant or charismatic in order to inspire change. If you can make a decision, you can inspire change. *RF*

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Result focused
logistics and supply chain advisory services

By Anton Nieuwoudt / Niels Rudolph

dasRESULTAT is a results focused logistics and supply chain management advisory company with greater than 30 years combined experience in various functional areas of logistics and supply chain management across diverse industries.

Our primary objective is to support our clients to reduce operational costs and increase their service offering to their clients through optimising their supply chain, by offering a wide range of services based on our own practical experience.

Leadership

dasRESULTAT stands under joint leadership of Anton Nieuwoudt and Niels Rudolph.

Anton has close to 15 years experience in logistics- and supply chain management across various industries.

Prior to co-founding dasRESULTAT as a boutique logistics and supply chain advisory company, Anton was at Accenture where he was involved in various projects in the Retail, Mining, FMCG and Energy sectors. Here he was able to expand and apply his fulfillment, supply chain management, supplier management, project management and business consulting expertise.

At DBSchenker, Anton gained experience in integrated logistics management, spare parts logistics as well as inbound- and outbound logistics solution implementation.

Anton holds a Bachelors degree in Marketing from the Rand Afrikaans University and a Masters degree in Logistics Management from the University of Johannesburg.

Niels has more than 20 years experience in logistics- and supply chain management mainly within the 3PL industry.

Prior to co-founding dasRESULTAT as a boutique logistics and supply chain advisory company Niels founded ORAscm as a specialised logistics consultancy company. He also worked at DB Schenker and PriceWaterhouseCoopers in Germany as a project consultant.

Niels spent the largest part of his career at DB Schenker in various roles in Germany, Singapore, Malaysia and South Africa. During his last role at DB Schenker in South Africa, Niels was responsible for logistics development, reporting directly to the CEO. Here he applied and expanded his knowledge to develop logistics solutions across the local automotive, high-tech and retail industries.

Niels holds a Diplom Betriebswirt (BA) from Staatliche Berufsakademie, Mannheim (Germany).

Functional experience

Our functional experience include among others warehouse design & management, transportation management, inventory management, demand planning, supply planning, supply chain planning, supplier relationship management and project management.

Industry exposure

We have had exposure to industries such as retail, automotive, consumer goods and services, petrochemical, mining and defense aerospace.

Core offerings

Through our core offerings we can support our clients to achieve strategic, tactical and operational results. These offerings cover areas such as Strategic Supply Chain Planning, Fulfillment, Sourcing & Procurement, and Project Execution.

Significance

Through our part-time lecturing commitments to the University of Johannesburg we continue to be actively involved in tertiary education and student mentoring programs to encourage excellence in up-and-coming supply chain professionals.

Credentials

Since founding dasRESULTAT in the fourth quarter of 2012 we've been involved in various engagements.

Our primary engagement in 2013 has been with a leading global third party logistics company. Here we've been instrumental in the turn-around of their contract logistics department, transportation management strategy and operating model design, Africa business development strategy, and procurement strategy development.

Secondary engagements during our first year of operations included a warehouse performance assessment at the Cape Town operations of a global apparel company, supporting a logistics service transition at a German automotive manufacturer, and providing warehouse implementation support for an agricultural equipment manufacturer.

We continue to support a transportation consulting company with project management and subject matter advisory at a South African FMCG company. With this client we have since May 2014 also embarked on a journey to evaluate and redesign their Import-Export service provider landscape which has flowed into a full blown group level RFQ process for carrier and clearing services. Along with the client we were able to unlock an overall 15% saving in their annual freight spend and associated landside and finance charges.

At a Kwazulu-Natal based manufacturer of engineered wood products, we provided subject matter support for various logistics cost saving and process efficiency improvement initiatives.

We currently support a Kwazulu-Natal based tyre manufacturer with logistics planning projects and unlocking savings on their freight import spend. *RF*

dasRESULTAT (Pty) Ltd.

PO Box 524
Modderfontein
Johannesburg
Gauteng
1609

dasRESULTAT is a results focused logistics and supply chain management advisory company.

We partner with our clients to identify and unlock practical and sustainable supply chain solutions.

www.dasresultat.com

Thought Leadership @ dasRESULTAT
www.dasresultat.com/thought-leadership/

www.linkedin.com/company/dasresultat

@resultfocused

Anton Nieuwoudt
anton.nieuwoudt@dasresultat.com
+27 82 495 3419

za.linkedin.com/in/antonnieuwoudt/

Niels Rudolph
niels.rudolph@dasresultat.com
+27 79 588 8098

http://www.linkedin.com/pub/niels-rudolph/4/4aa/231