



Top 10 Trends For Supply Management Value Generation in 2015

A White Paper by Sourcing Innovation

<http://blog.sourcinginnovation.com/>

December 2014

Sponsored by BravoSolution

<https://www.bravosolution.com/>



Introduction

Two years ago we highlighted the ten things an organization can do to reign in rapidly rising costs before hyperinflation in key categories put its profitability at risk. One year ago, noting that the average company is sitting on a goldmine of untapped savings opportunities, we presented the top 10 technologies an organization can do to identify its top savings opportunities today. Collectively, these papers provide a Supply Management organization a great start to its cost reduction efforts, but cost reduction isn't cost avoidance, and the best way to save money is to avoid spending it in the first place. So, in this paper, to help leading Supply Management organizations get ahead of the curve and get cost savings and value generation opportunities right the first time, we are going to cover the top ten trends for Supply Management Leaders in 2015.

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Preamble:

In September of 2014, the author, tired of being repeatedly asked his thoughts on the "Future" of Procurement on a semi-annual basis, mainly due to the fact that all of the future-talk as of late has centered around last decade's practices, decided that he was going to put an end to what he labels the "Futurist BullShit" once and for all. To this end, he ran a fourteen part series on Sourcing Innovation on why we shouldn't talk about the "Future" of Procurement, how most of the trends were old news or ongoing blues, and how most of the futurists (which he likes to dub "Historians") are stuck in the past with the anti-trends they continue to promote year after year.

In this series, which can be downloaded through *this link*, the author analyzed thirty-three different trends that were being promoted by the futurists, analysts, consultants, and self-promoters and detailed why fifteen were (almost) as old as (global) trade itself, how eleven have been with us for decades, how four were really last decade's future trends, and how only three were truly forward thinking and relevant to an organization wanting to look ahead beyond the present. This helps an aspiring Supply Management professional focus on what's relevant and what's not, but doesn't help her understand why these trends are still being talked about or, with the exception of the last three, and maybe the last seven, what trends she should be focused on.

To this end, the author embarked on a second, thirty-part, series in October to discuss each of these historical trends in detail to help a buyer understand why these trends are still at the forefront of the discussion, what the organization needs to be concerned about, and what methodologies and technologies the organization needs to make sure that it does not slip into the irrelevancies that are bogging down their peers and feeding the futurist historian with more fodder for their foolish predictions. This helps the ambitious Supply Management professional understand what the real issues are and what is just noise.

However, just knowing what your organization needs in terms of methodologies and technologies to keep up with the times doesn't make you a Supply Management leader. While it certainly puts your organization in the top half of organizations, it won't help your organization reach the coveted Hackett Group 8%. In order to do that, your organization needs to understand what's coming next, prepare for it, keep costs down, and push value generation up while your peers are struggling just to react to the changing landscape.

That's what this paper is about. In this paper we are going to discuss what the real current and future trends are, what your organization needs to do to get with, or ahead, of them, and how your organization can use them to find savings and generate value for the organization. This will require proper planning, suitable technology, and good supplier relationship management, and will only be accomplished if your organization has the right knowledge and foresight.

Bonus Trend #11: Use "The Cloud" to get Transparent Pricing

In last year's piece on the "*Top Ten Technologies for Supply Management Savings Today*", we discussed RFX and e-Auction technology that allowed an organization to quickly and efficiently collect and compare supplier bids for a given product or service desired by the organization. The theory is that because the organization can invite more suppliers and consider more bids, the suppliers will be more competitive and the organization will get good pricing that is roughly equal to the production and delivery cost plus a fair margin.

This is a good theory, but it doesn't always play out in practice. If demand exceeds supply, if the supply base is small and colludes to keep prices up, or if the organization does not invite the right mix of supplier organizations to the sourcing event, the buying organization will not get the best price. Even worse, the buying organization might not even know that the price obtained was not the best one.

If the organization had access to true market pricing, it would not only know when it was getting good pricing and when it wasn't, but it would also know what strategy should be used in a sourcing event for the category in question. Fortunately, with modern technology, true market pricing can be obtained as the wealth of public pricing data on the internet, public sector contracts, and commodity market data that is freely available and collectible with today's modern Procurement platforms can bring a level of transparency to product pricing that was not obtainable by previous generations of Procurement professionals.

So how does an organization get this transparent pricing?

First it collects all of the market data that is available to it. For consumer goods, it does two things. It begins by scouring the relevant online store websites on a regular basis and collects regular and sale pricing data for each relevant product to build a consumer price model. Then, it scours public sector contracts, which, by definition, have public pricing and extracts the pricing offered by vendors to government agencies and builds up a public sector pricing model. The lower price from each of these models provides the organization a baseline maximum price that it should be paying.

For services, it looks to industry research, employment portals, and analysts to give it price ranges for each position in each region that it operates in. It does its best to get multiple data points and combine them into a weighted range. The mid-point of these ranges establishes a maximum baseline price it should expect to pay for someone of average competence in that position.

For custom manufactured goods, it builds should cost models and populates them with market data. It captures all of the commodity market data to get baseline prices on raw materials, energy market data to get baselines on energy prices, and labour market data to get the baselines on labour costs. Then all an organization has to do is add in standard overhead and a fair profit margin and it has a baseline price for its custom manufactured product.

And it gets the funding to do all this by tapping into the big data trend and the cloud craze because most of this data is retrieved over the internet and, in an efficient organization, automatically imported into the organization's Sourcing and Procurement platforms of choice.

Trend #10: Use e-Sourcing & SRM to Integrate Sustainability

Even though most consumers are not willing to pay (much) more for a responsibly sourced and sustainably produced products, it is critical that your organization start integrating sustainability into its supply chain and supply management practices now. If the recent spikes over the past few years in oil and energy costs, raw material, and commodity markets are not enough to convince your organization that it has to invest in suppliers and processes to maximize renewable energy utilization, minimize non-renewable raw material requirements (especially if those raw materials are rare earth minerals), and use more efficient production processes to keep labour costs predictable, then the author doesn't know what will.

However, if your organization does not get ahead of the sustainability curve and start sourcing more responsibly, the 20%+ jump in food commodity prices and the 50%+ increase in oil prices that have occurred in the last few years is a drop in the bucket compared to what is coming. As recently covered on Sourcing Innovation, natural and man-made disasters are on the rise and a five-fold increase is expected over the next 50 years. Although one cannot predict where and when these disasters will strike, one can be certain that each and every disaster is going to interrupt a commodity supply chain. Crops will be destroyed. Mines will be collapsed. Roads will be destroyed. Ships will be sunk. The list goes on. Regardless of what happens, and what the physical damage is, there is one thing your organization can be sure of. Prices will skyrocket.

However, if the organization is using renewable or plentiful resources, the price shocks won't be quite as bad, because there's always more supply where the current batch came from. It might take a few weeks or a few months for another shipment to be prepared, but that is an insignificant amount of time compared to the time to dig a new mine, for example. And if the organization is using renewable energy, coal or oil prices going through the proverbial roof is not going to increase the organization's energy costs.

An organization that builds sustainability into its sourcing now is going to avoid extra costs later when the next disruption hits its supply chain. And, with proper Sourcing and Supplier Relationship Management, it's not very hard for an organization to do this. First of all, it can design its RFIs to identify suppliers that are already making efforts to use renewable energy and / or that support production processes that use alternative, plentiful or renewable materials, instead of high-dollar, limited, or non-renewable materials. For example, suppliers that use carbon fiber instead of steel, nano-materials instead of rare earth minerals, or microfibers and spandex instead of cotton.

Then, when it selects those suppliers who are moving towards sustainability, it can use its supplier relation management platforms to track their progress, identify the most beneficial areas for sustainable improvements, and work with those suppliers to increase sustainability in material usage, energy utilization, and operating practices.

Furthermore, it can also monitor the supplier and make sure the supplier is responsible and ethical in its labour practices, and not only treats its labour fairly and responsibly, but only uses suppliers that do the same. These days, nothing gives an organization a bigger black eye in its organizational brand than if the media uncovers child labour, unsafe working practices, or workplace deaths that could have easily been avoided with safer working conditions and more monitoring.

With good supplier relationship management practices and platforms, an organization can not only monitor, track, and manage its interactions with the supplier; track insurance and regulatory certifications possess by the supplier; but also track audits, third party CSR (Corporate Social Responsibility) ratings, and initiatives undertaken to improve worker safety and health, both physical (cleaner air) and psychological (less stressful working conditions).

Trend #09: Jointly Defined KPIs with Key Suppliers to Increase Perfect Orders

Key Performance Indicators is not a new trend, as evidenced by the host of books published over the last few years on the subject (which are quickly and easily uncovered via a Google search), but jointly defining them with a supplier organization is. The standard approach to KPI definition is for a business to articulate its objectives, define its measure(s) of success, identify diagnostic metrics against those measures, gain internal stakeholder buy-in, and finalize (implementation) processes. Furthermore, it will tend to orient its measures, and associated metrics, around its current, internally focused, business processes and ignore the rest of the supply chain it relies on.

This observation is reinforced by the fact that most consultants recommend setting KPIs using the SMART criteria, identified by George Doran in the 1980s and based on Peter Drucker's management by objectives. According to SMART, which is a mnemonic acronym, a KPI should have a(n):

- Specific purpose for the business,
- Measurable aspect that can be used to determine a value for the KPI,
- Achievable nature against defined norms,
- Relevance with respect to the success of the organization which will increase as the KPI improves, and a
- Time-phased nature, which means the measurement is for a fixed period of time.

However, if we analyze the definition of a perfect order, which is one of the most important metrics for Supply Management, we see that a perfect order is an order that is:

- on-time,
- complete,
- damage free,
- correctly documented for transit, and
- correctly billed

and that, in the inbound supply chain, all of these factors depend on suppliers, carriers, and 3PLs that handle the organization's import/export functions and, in the outbound supply chain, at least two of these factors depend on carriers and 3PLs!

In other words, any internally defined metric is pointless because the organization's performance is, in the inbound supply chain, fully dependent on third parties and, in the outbound supply chain, ultimately dependent on carriers and 3PLs. If the organization defines any metric on order fulfillment that include any of these factors, it is simply perpetuating the illusion that with the right KPI it can manage the situation to success and is setting itself up for an unexpected fall the next time a key supplier experiences a significant disruption that the supplier is unable to recover from quickly.

Forwarding thinking Supply Management organizations are going to start working with suppliers to define key, paired, indicators that:

- * *define* processes that focus attention on the right issues,
- * allow progress to be regularly and simultaneously *measured* by both parties,
- * permit joint root-cause *analysis*,
- * enable both parties to identify opportunities for *improvement*, and
- * focus *collaboration* between key touch-points.

In other words, proper KPI definition for Supply Chain is more DMAIC (Define, Measure, Analyze, Improve, and Control), where the "C" stands for collaborative control as collaboration is necessary, then it is SMART.

In other words, if an organization wanted to improve its perfect order rate on its inbound supply chain, it would work with its supply to define paired metrics that would help both parties achieve the perfect order, which might look something like this:

Perfect Order Measure	Buyer Measure(s)	Supplier Measure(s)
On-time	On-time order placement	On-time shipping On-time manifest transmission
Complete	All items received	All items in initial shipment
Damage Free	Warehouse Damage Ratio	Warehouse Loss Ratio
Correct Documents	Complete Buyer Info.	Complete Manifest
Correct Billing	Complete POs with supplier part #s; Complete good receipts	Complete Invoices

In other words, the buyer is only measuring what it has control over that affects the perfect measurement and the supplier is only measuring what it has control over, and if issues arise, both parties work together to resolve the issues.

Trend #08: True Lifecycle TCO Modeling and Optimization

Even though most current Sourcing and Supply Management platforms claim true TCO (Total Cost of Ownership) support and most top organizations claim to be doing TCO modeling in their sourcing events, most organizations are only modeling the total costs associated with sourcing/acquisition and utilization of the product in production, in other words, T-CAP. As a result, they are capping their return from current sourcing events because they are not looking at future costs associated with distribution, sale, and, most importantly return and disposal.

The cost of a product is not just the cost to get it to Engineering, Sales, or IT; nor is it just the cost of getting it into the organization and out to the customer or consumer. It's the total cost associated with the product throughout its lifecycle, cradle-to-grave so to speak. When conducting a sourcing event, the sourcing team needs to look at the initial acquisition costs, the support costs during its utilization or warranty period, any preventative maintenance costs that are associated with the product (if it is required to have a long useful life by the organization or the client organization), any operating costs associated with the product (if it is to be used internally), and any disposal costs.

A product with a high failure rate, with high maintenance costs, or high reclamation and disposal costs, even if it has a significantly lower up-front acquisition and utilization cost, can be more costly to the organization than a product that costs 10% more today, but has a lower failure rate, requires minimal maintenance, and is expected to have significantly lower future lifecycle costs.

The organization needs to understand that while this level of cost analysis is typically only applied to large equipment and software purchases, purchases of products currently covered under an environmental or disposal directive such as WEEE, or property acquisitions, lifecycle analysis needs to be incorporated across all product categories that the organization acquires for sale, either as-is or incorporated into other products.

Why? Under the Uniform Commercial Code (UCC) and similar legislation, anything your organization sells has to work as advertised. Otherwise, your organization must replace it or refund it. Furthermore, an average consumer expects a reasonable warranty on any piece of hardware or software you provide them, which implies that the organization has to offer this to be competitive and if the product malfunctions or breaks, there will be a cost to the organization to repair or replace it. Furthermore, even if the product is not currently covered under an environmental directive or regulation that requires the organization to take it back and safely dispose of it at end of life, if the product contains potentially hazardous materials, rare earth minerals, or plastics, it's a safe bet that it will eventually be covered under such regulations. This means that if the organization does not plan for this situation, recovery costs could break the bank when a new regulation or disposal requirement comes into effect.

In other words, when the organization is conducting a sourcing event, it has to ask itself

- what are all the upfront acquisition and utilization costs including switching costs
- what are the expected service and warranty related costs based on the expected failure rate
- what are the preventative maintenance costs such as necessary patches for software and inspections and part replacement for large equipment sales
- if the product is going to be used internally, what the expected operating costs are based on power requirements, associated labour costs, and average overhead costs
- if the product is not completely consumed during use (such as dishwasher liquid) and contains any chemicals that can breakdown in landfills, pose potential harm to life, or other materials that are restricted, what the recovery and disposal costs, which could include material extraction or recycling, will be

Then it has to include all of these costs, which should be different for every distinct product from every supplier, in the model, run the model through a strategic sourcing decision optimization platform capable of taking all of the costs and organizational constraints into account, determine the true lowest cost award that is feasible, and source appropriately.

Then, since every cost that occurs after product acquisition is an extra cost that the organization does not want to occur, it looks into the root of each additional cost and begins supplier development projects to reduce or remove each of these costs from the supply chain. For example, if its expected warranty costs are high because of a 5% failure rate, it works with the supplier to determine the most common reason(s) for the high failure rate and performance improvement plans to improve quality to reduce this failure rate and its cost.

Trend #07: Optimized Supplier Payment and Buying

Does the organization pay its suppliers' invoice when it is due, does the organization pay its supplier's invoice early (and try to get a small early payment discount), does the organization pre-pay its suppliers when the purchase order is issued (and get a bigger discount that was negotiated and included in the contract by a forward-thinking supply management professional), or does the organization buy raw materials on behalf of its supplier (and get a significantly reduced product cost because the supplier does not have to borrow at high interest rates to finance the product it is manufacturing until the invoice is paid and because the buying organization can negotiate a better rate for the raw material than the supplier).

As the author noted in his initial series on *The "Future" of Procurement*, while the concept of supplier pre-payment is as ancient as any Procurement *trend* that a futurist, uhm, historian can identify, pre-paying the supplier's supplier, or even the supplier of the supplier's supplier is a relatively new concept because only with full supply chain visibility, advanced cost modeling, and scenario optimization tools can a leading organization determine the best way to truly take cost out of the supply chain by eliminating payday lender (or, even worse, mob) lending rates and significant raw material and component overcharges (because smaller suppliers have no leverage or negotiating capability).

Trend #06: Data-Based Predictive Analytics

The majority of organizations today use analytics to look backward: how did we perform on customer service, what did we buy, how much did we sell, how much did we spend, what was our profit margin, ROI, and RONA. While this is important to track how well the organization is executing against the plans it put in place, identify where it is failing, and pinpoint what issues need to be resolved to reach its goals, this doesn't necessarily help the organization with where it needs to go or what it needs to do tomorrow, or even today in many cases.

True leaders in Supply Management not only use (spend) analytics platforms to get a grip on what they're spending, how much savings are being captured, and where the most maverick spend is occurring (that needs to be snuffed out), but to identify where traditionally undetectable savings opportunities, that will not appear in any top n spending report, are likely to be.

Whereas an average Supply Management organization will produce the typical top n spending reports by category, supplier, and department, a leading Supply Management organization will be more concerned with the top n categories with the greatest absolute or relative savings opportunities, the top n suppliers where performance improvement will make the greatest impact, and the top n departments that need their spending reigned in.

How will they do this? When implementing the processes and technologies to get ahead of the other trends defined in this paper -- particularly trend #11 to get transparent pricing, trend #9 to develop and monitor meaningful KPIS, and trend #8 to optimize buys against the expected total lifecycle cost, the organization will collect a lot of data. In particular, it will collect a lot of data on commodity, energy, and labour costs over time; a lot of data on product lifecycle costs and supplier performance; and a lot of data on departmental performance and spending against expected levels and norms. Using this data, it will run predictive analytics to predict commodity, energy, and labour rate changes over the next year and then use should-cost models to predict changes in product and service costs. Based upon these predictions, it will identify categories likely to be prime sourcing opportunities and monitor them closely throughout the year.

Furthermore, it will analyze the KPI data it collects from its suppliers and identify those KPIs that are not improving and which, if improved, would provide the greatest cost savings opportunity and focus on those KPIs. Finally, it will look at departments where spending is not trending in the expected direction, cross-correlate the spending against the category spending and the projected spend, and prioritize those projects with the greatest opportunity to help the departments with the biggest overspending against projections.

Finally, it will use the data it collected from its supplier and any data it has on commodity costs, local lending rates, and third party financial and risk data to help it determine when the optimal time to pay its supplier, its supplier's supplier, or even the supplier of its supplier's supplier.

Trend #05: Strategic Return to Regional and Local Sourcing

Grey-beards in supply chain know that everything happens in cycles. One of these cycles is the out-sourcing, in-sourcing, out-sourcing cycle and all of its variations. An organization, seeking to reduce cost, brings in a Big 4/5/6 consulting company that says the answer is to outsource to the low-cost locale of the day. So the organization outsources, and after working its way through the inevitable bumps in the road at the beginning of its journey, starts to realize savings and enters the set-it-and-forget-it mindset. However, over time, production costs rise, transportation costs rise more, and the organization loses all of its expertise in the category and effective management thereof and costs eventually increase to the point where it is paying more than before it outsourced. At this point in time, the organization, which is also in a new management regime, brings back the Big 4/5/6 consulting company which says that the way to get spending under control is to bring production back on-shore and under the control of the company which (with the aid of the consulting company) needs to regain the expertise necessary to manage the category effectively and cost-efficiently. After a few years, the organization reaches its peak of efficiency, the cost has reached the new bottom, and the organization again enters a set-it-and-forget-it mindset. Costs slowly go up as material, labour, energy, and other costs rise and inefficiency creeps back into the process. Management changes, a Big 4/5/6 consultancy is brought back in, the recommendation is made to outsource, and the cycle begins again.

However, while an average organization might view the outsourcing cycle as a tool for cost reduction, a leading organization realizes that the key to savings is not following the crowd but leading the way. Such an organization proactively analyzes its product and service categories to determine if it should be outsourcing, insourcing, near-sourcing, or sourcing locally. It doesn't make a decision based on what the crowd is doing, or on what the Big 4/5/6 is recommending, but on what is the most valuable move for the organization.

An organization that gets ahead of the cycle and brings sourcing back in the right category when the time is right not only realizes savings and keeps cost under control as transportation costs and outsourced labour costs rise for the competition, but also generates untold brand value as socially and sustainably minded customers rant and rave about a company that did the right thing and brought jobs back home.

So how does the company make these decisions? It develops should cost models for producing the product at home (local sourcing), close to home (near-sourcing), and overseas and analyzes costs today against projected costs in the first year, third year, and the fifth year to determine what the best option is for the company overall. Specifically, differentials in outsourcing costs will be analyzed with respect to expected productivity gains at, or close to, home and if

- the cost regionally/locally in 1 year is projected to be within 10%-ish of cost today, re-sourcing projects are initiated;
- the cost regionally/locally in 3 years is projected to be within 10%-ish of cost today, detailed should-cost models are built, productivity improvement projects are undertaken, and plans for future SC redesign are started;
- the cost regionally/locally in 5 years is projected to be within 10%-ish of cost today, no action is taken and the situation is analyzed again in a year; and
- the cost regionally/locally in 5 years is projected to still be more than 10% when compared to outsourcing, then outsourcing is still a viable strategy and extra supplier improvement projects are undertaken with these suppliers .

Trend #04: Control Tower Model with Supply Chain Visibility and Strong SRM

While an average organization will be lost in the de-centralized Supply Management vs. centralized Supply Management debate, and while an above-average organization will be considering center-led Supply Management, a leading organization will be moving to the control tower model. What is the control tower model? To define this model, one first has to understand the center-led model that it evolved from.

In the classic decentralized model of Supply Management, where each business, functional, or geographic unit is responsible for its own purchases, the organization has pocket Procurement teams in the larger organizational units who are responsible for the unit spend. While it has the advantages of individual empowerment, localized expertise, and the ability to execute rapidly on smaller sourcing projects, it has a number of disadvantages including limited leverage (as the spend in each unit is limited), high operating costs (as there is duplication of effort across the units), and lack of information sharing and best practice development.

That's why many organizations on the leading edge of Supply Management in the nineties and early noughts moved to a centralized model where all Procurement was directed through a single, central organization. This had many advantages as it allowed corporate spend to be fully leveraged, standardized sourcing processes, captured knowledge, and improved best practices. However, the localized expertise that was specific to a business unit was often lost, maverick buying increased when local site managers did not agree with the centrally mandated decisions (and there was no technology platform that could be used to enforce the decisions), and reaction time to localized disruptions decreased.

So in the mid-noughts, leading organizations decided that they needed the best of both worlds and developed the center-led model where a centralized procurement center of excellence (COE) focused on corporate supply chain strategies and strategic commodities, best practices, and knowledge sharing while leaving individual buys and tactical execution of categories that were not worth sourcing centrally to the individual business units. With appropriate category balancing, the center-led model provides the best of both worlds -- all of the advantages of the centralized and decentralized models with minimal disadvantages.

And while center-led Supply Management is better than centralized or decentralized Supply Management, as the center-led organization can centralize knowledge, improve best-practices, and share them with the organization, it's not the best an organization can do. The key to Supply Management success for a center-led organization not only lies in its ability to split categories into those that should be managed centrally, those that should be decentralized, and those that should be split so that most of the spend is managed centrally but known exceptions are managed locally but to identify when the situation changes and adapt appropriately.

However, the only way an average center-led organization can do this is to analyze spend after the fact, detect variations from the plan, research abnormalities, and then change the sourcing plan for the next event. However, by then, the market conditions and organizational needs can change yet again and the organization wouldn't know until two more years have passed.

Furthermore, when supply is limited, costs are rising across the board, and opportunities for cost reductions are few and far between, the only real way a Supply Management organization is going to save money is through targeted supplier performance improvement initiatives that take cost out of the supply chain. However, just picking a top n supplier to work with on a top n category isn't the answer, especially if the supplier is already efficient in that category. The key is identifying the supplier-category pairing with the greatest opportunity and working with that supplier on that category.

This is where the control tower model comes into play. In the control tower model, Supply Management not only manages categories and procurement, but actively monitors the supply chain for cost reduction and value generation opportunities and works with partners to realize those opportunities when they appear. It is actively pursuing the opportunities identified by the trends described in this paper and tracking market cost data, integrating sustainability, monitoring supplier performance, jointly defining KPIS to allow it to not only measure performance but identify areas for improvement, looking at entire lifecycle costs before making a sourcing decision, continually running models in the background to detect deviations from the expected norm, reacting when appropriate, and, most importantly, using predicted analytics to identify when it needs to change the sourcing philosophy and management strategy for a category to stay ahead of the game and maximize organizational return.

Trend #03: 3-D Printing & Arduino to Produce Local Prototypes

Outsourced design or outsourced prototype production was a great idea when the organization could afford to wait three days to three weeks for the next prototype of your metal part or custom-made circuit board to be shipped by sea or air to your test facility. But now that we're in an era where product life-cycles are months and not years, up to half of product sales are in the first few months of product release, and not releasing before the competition can mean an inability to reclaim that customer for one to three years, the idea does not have the shine it once had.

However, from a cost viewpoint, bringing design back in house is not an attractive idea either when talent in the local market is limited, at a premium, and extremely transient. And until recently, companies in fast paced consumer markets were limited to these two, very unattractive, choices (unless they had very deep pockets and could pay whatever was required to lure limited talent away from the competition and keep them in their development labs).

But now, a third choice is emerging -- outsource part or all of the design, but create the prototype at the low-cost 3-D printer down the street or assemble the prototype at the low-cost maker-space on the next block. With advances in 3-D printing, companies can use 3-D printing to create plastic or metal prototypes for local testing in a matter of hours and go through multiple iterations of product refinement in the same time it would have taken to produce one part, get it shipped by land and sea, and test it ten years ago. And the total cost is often less than it was to produce the prototype over seas and then ship it 3,000 miles. Similarly, with the open-source Arduino platform, engineers can create low-cost prototypes of control systems and test them for performance and reliability before spending millions of dollars finalizing a design and setting up a limited production run that could contain a fatal flaw that would not be discovered until the first prototype was printed and tested.

Leading companies will use these two technologies to test prototype design, performance, reliability, and safety before finalizing on a design and setting up a costly production run in a factory and save time, money, and brand humiliation that was common in the past when an error that should have been caught in testing slips through because the company didn't have enough time to refine prototypes and do exhaustive testing.

Trend #02: Facilitating The Share Economy in Your Supply Chain

The sharing economy which, as per Wikipedia, is also known as the peer-to-peer economy, mesh, or collaborative economy, is, to be blunt, essentially, the modern incarnation of the hippie movement where people participate in the shared creation, production, distribution, trade and consumption of goods and services. Examples include bike sharing, ride sharing, home sharing, and crowd-funding to build communal projects. Except this time the ideas are more business friendly, flower power is not needed, and the clock isn't perpetually stuck at 4:20.

However, the share economy, which is currently in the domain of the average individual, and small businesses, is going to migrate to medium sized businesses en-masse as it is going to give these medium-sized businesses access to the latest and greatest technology and economies of scale that these medium-sized businesses will be unable to acquire on their own. Can't afford to buy that new automation and production system that increases throughput, improves quality, and decreases natural resource consumption? No problem! Form a cooperative with quasi-competitors, build a new factory with the new production technology, and effectively time-share it (for the operating cost). This will put medium-sized businesses on the same playing field as large enterprises and level the playing field in ways that have not yet been thought of. The hippies will have succeeded and their ideas will change the world – fifty (50) years later.

So how will these medium-sized enterprises use the share economy to revolutionize their business, and the market-place as large, and even become the large Global 3000s of tomorrow? They will look for similar manufacturing processes and machining requirements across their vertical, similar needs for process improvement and third party training that their individual departments share, and similar needs for LTL shipping and warehousing in specific high-cost locales and work with the (quasi-)competitors to build joint prototype development (using 3-D printing and Arduino) and/ or production facilities, offer joint Six Sigma or Lean process improvement training, or joint transportation initiatives to help keep their costs down and their capabilities up on the supply and operational side and keep their respective competition to new product development, sales, and marketing on the consumer side.

Leading organizations will effectively form a co-opetition marketplace where they simultaneously collaborate to keep costs down and capability up so they can take on the 900 lb. gorillas of the space but yet still compete on consumer market segments, and, along with the customer base, if they approach the share economy correctly, will all collectively win.

Trend #01: Fair Labour Practices Throughout Your Supply Chain

The days where you did the minimum possible to conform to any local health and safety regulations, paid your workers as little as possible, and only offered them the benefits mandated by law are long over. Any company that doesn't ensure its suppliers use the same fair labour practices as it does is setting itself up for trouble, especially if the supplier's poor labour practices result in a media scandal about how your company is using child labour to sew its clothing or a supplier's poor health and safety practices results in 1,129 deaths and 2,515 injuries when a building that should have been condemned was used for commercial work, as was the case on 24 April 2013 when Rana Plaza in Bangladesh collapsed with over 3,600 people inside, a day after warnings not to use the building due to new cracks in the structure.

While it's hard to predict what the cost of an incident that decreases the organization's brand reputation will be, it will likely be somewhere between 4% and 50%. For example, in an article on Supply Chain Disruptions in a publication by Above the Standard Procurement Group in 2012, they referenced research that led them to calculate that an organization with 500M could be jeopardizing 4% of that if their reputation goes from good to poor. And in a white paper on Corporate Reputation in 2012, CIRANO noted that a reputational scandal can cost a company over 50% of its corporate value, noting how the price of BP stock during the oil spill scandal fell by 52% in a mere 50 days.

Only Supply Management, by insuring that every link in the chain treats its workers fairly, and without discrimination (which is another issue that is going to become much more costly for companies to ignore in the coming years), can make sure that the company does not suffer these costly brand injuries and reputational damages, just like it has been the only organization that can insure proper quality practices to insure that the organization does not have to do expensive product recalls or face multi-million dollar lawsuits as a result of consumer endangerment and injury.

Furthermore, the only way Supply Management is going to be able to adequately prepare for rapid labour price increases is to insure that not only does it pay its workers on the same relative scale and give its workers the same relative benefits as the most socially responsible of its peers, but that it only uses suppliers that pay its workers on the same relative scale and give its workers the same relative benefits that workers would receive from local employers who treat their labour fairly and with dignity.

What do we mean by this? First, look at the competition and if they pay, for example, an average of 25% above minimum wage for the lowest rank-and-file menial jobs, then your organization needs to do the same. How your company treats your workforce not only impacts who wants to work for your organization, but also impacts your brand reputation (as companies people want to work for often get a lot of free press by third parties who do corporate rankings and get media attention).

Secondly, your organization needs to get ahead of the equal rights movement and regardless of the local laws, recognize your employees' partners in your benefits packages regardless of their sex or legal status. The sooner you recognize this eventually and make it organization wide, and not just implemented in those states where its forced upon you, the sooner you can use that added leverage to negotiate with the health and benefit providers for better deals and get ahead of the competition. Plus, this can be the foundation of a brand building campaign that will boost corporate reputation, and since every increase in reputation eventually results in consumer spending increases with your company (as the competitions' reputation goes down in comparison and customers stop spending with them), in the long run, an organization that gets ahead of this curve will realize considerably more value than it spends giving 10% to 20% of its workforce a few extra benefits.

Thirdly, and most importantly, it must use suppliers who are not only at least as fair as their peers in compensation in whatever locale they operate in, but, in developing regions in particular, provide better compensation than their peers. An organization that is seen as working towards increasing workers rights and their quality of life in countries where the average factory worker only makes a few dollars a day and lives in a shack, with the right Public Relations campaign, will get a huge reputational boost and a lot of free press. Plus, as the developing country starts to improve economically and minimum labour costs go up, there will be little or no impact to your organization because it will already have been paying more and used the best practices described in the other future trends covered in this paper to take costs out of the supply chain in other ways, as inefficiency often costs considerably more than a paltry 10% to 20% increase in labour costs in a locale where labour costs are only a fraction of what they are at home.