JOURNAL OF SUPPLY EXCELLENCE

Volume 4

EIPM
The source for Excellence
25 years
1991 - 2016

A publication of the European Institute of Purchasing Management

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Welcome to this fourth volume of the EIPM Journal of Supply Excellence.

This year's journal has a strong focus on value creation, innovation and business modelling. I believe this reflects the aspiration of many purchasing professionals around the world. It should also serve as a basis to think and act differently about these topics. We will not create value by doing more of the same, or by running faster on a day to day basis. We need to be ambidextrous. On the one hand we have to be on the lookout for breakthrough opportunities, and on the other hand to continually bring improvement in cost and performance. This means that we have to mobilize diverse ways of thinking and acting for different goals and divergent time horizons. In other words, we need to awaken both the inner child and the rigorous improvement leader we have within us.

Hervé Legenvre offers us some provocative insights. He shows that open innovation is not a new challenge.

He brings us back to the 16th century to reveal how new ideas and talent were sourced to complete the construction of the Cathedral Dome in Florence. History rarely repeats itself but it is a great source of learning and reflection. By comparing and contrasting the practices of today and yesterday, we can learn about ourselves and thus are able to challenge our ways of thinking.

Jean Deng an EIPM Executive MBA alumna, graduated from our Shanghai campus two years ago. Her analysis of Scrap Management in China offers tangible opportunities for creating shared value, a form of systemic innovation that delivers benefits to both society and business. Closed-loop recycling initiatives are increasingly on the purchasing agenda. It is great to see some people taking the lead on this.

Christian Sandström is a great academic who taught last year during the EIPM Master Class in 2014. He studies disruptive innovation across sectors and industries. His paper looks at 3D printing within the hearing aid industry. He shows that even though 3D is often presented as a disruptive technology, its adoption in the hearing aid industry did not lead to n-ew market entries or changes in the group of market leaders. In fact, the adoption of 3D printing can be an opportunity to gain performance and cost efficiencies.

After this, I share my vision for the future of purchasing. We all need to become leaders for extended development (LED) by being a salesperson, a leader, an entrepreneur and a communicator who think in terms of a sustainable ecosystem. Then we share the Purchasing 5P's framework that can help us understand how we can become a customer of choice and attract supplier innovation. Furthermore Olaf de Hemmer Gudme encourages us to take a system view to reconcile value creation and human values. This fits very nicely with the EIPM Moto ***Values for Value.***

Richard Lamming, one of the leading academics in purchasing and supply management, has teamed up with John Bessant and Anna Triflova, leading academics in innovation, for the Journal of Supply Excellence. They outline what purchasing and supply chain managers need to know about open innovation. So let's embrace open innovation as they suggest!

Finally, Bernard Arrateig suggests we rethink the purchasing business model and re-design roles differently within a sourcing management team to deliver both strategic integration and motivation.

Enjoy the read!

Looking forward to seeing you soon.

Bernard Gracia
EIPM Dean and Director

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Director of publication : Bernard Gracia / bgracia@eipm.org
Editor of the publication : Silmara Codeville / scodeville@eipm.org

Legal deposit : december 2015 / ISSN 2257-3615

Printed by : Imprimerie Villière, ZA du Juge Guérin, 74160 Beaumont, France

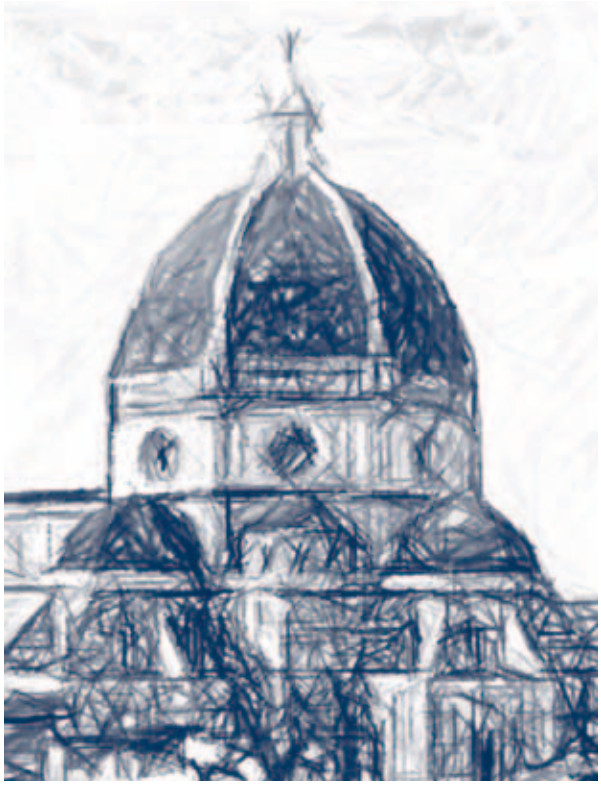
For more information, or to subscribe to EIPM "Journal of Supply Excellence", please contact us at info@eipm.org, or visit our web site at www.eipm.org

SOURCING INNOVATION: THE GREAT DOME OF FLORENCE

By Hervé Legenvre

JOURNAL OF SUPPLY EXCELLENCE

Hervé Legenvre *is currently the EIPM MBA Director. From 2000 to 2010, he was EFQM Director. He headed the European Excellence Award, EFQM training activities and facilitated numerous benchmarking projects. He oversaw the development of the most recent version of the EFQM Excellence Model, a framework used by more than 30000 organizations to assess their performance and develop their strategy. He authored the book on innovation "An History of Inventors, the Anglo Saxon Trail".*



Florence. Beginning of the 15th century. This mercantile city, with a population of 50,000 inhabitants was one of the most prosperous cities in Europe.

It had suffered from the Black Death but over decades beautiful and refined wool cloth had made Florence rich. This had ignited a frenzy of developments within the walls of the city, with new building popping up in many places.

Churches, Palazzos, villas, defenses were under construction. Outside the city walls, sandstone and marble quarries had opened.

At the heart of the city, The Cathedral Santa Maria del Fiore had been under construction for more than 100 years. This was by far the most impressive construction project to be found in Europe at the time. It was conceived to be the pride of the city, a symbol of faith and prosperity. The construction of the cathedral was overseen by the rich and powerful Guild of the wool Merchants. Their technical knowledge was limited and they appointed architects to plan and execute this grand work.

However the Cathedral was without a dome for more than fifty years. No one knew how to build it and some were skeptical it could ever be built. With a span of more than 143 feet, this was supposed to become the largest and highest dome in the known world with an unusual pointed profile that resembled gothic arches. Furthermore, a double shell was expected to offer refined proportions from within and from outside the cathedral.

This had been specified in the middle of the-14th century by Neri di Fioravanti, the architect in charge at that time. It was approved by public referendum in 1367. Afterwards, during a ceremony on New Year's Day, architects and wardens swore they would build it as specified.

The construction challenges that could be anticipated were numerous: marble and sandstone blocks had to be raised to the top; a temporary wood structure was to be built to support the masonry of the dome. This was clearly the most demanding technical challenge of the time.

But before coming back to how this technical puzzle was solved, we need to go back in time. In 1401 The Guild of Cloth Merchants had decided to offer a new set of doors for the Baptistery.

34 judges had to choose amongst seven goldsmiths and sculptors. Each of them had been given four sheets of bronze and a full year to execute a work illustrating Abraham's sacrifice of Isaac.

In 1402, two competitors stood out: Filippo Brunelleschi [1] and Lorenzo Ghiberti; a lifelong rivalry was born. The proposals and processes undertaken by the two young artists were radically different; Lorenzo Ghiberti had sought

advice from many jury members. Filippo had worked in total isolation ensuring secrecy against potential spies. The jury was divided and apparently awarded the work to both of them, but Filippo refused to work with Lorenzo, but Filippo refused to work with Lorenzo therefore leaving this one as the unique winner.

Today the models of Filippo Brunelleschi and Lorenzo Ghiberti can still be admired in Florence and continue to stir debates amongst visitors.

Following this, Filippo never worked as a sculptor again. The following ten years he mainly stayed in Rome with Donatello who was to become a famous painter.

Together they explored romans ruins possibly in search of past construction secrets. Brunelleschi also became famous for (re)discovering the laws of perspective, a landmark of renaissance painting.

Back to the dome, on the 19th of August 1418, the following competition was announced:

Whoever desires to make any model or design for the vaulting of the main Dome of the Cathedral under construction by the Opera de Duomo - for armature, scaffold or other thing, or any lifting device pertaining to the construction and perfection of said cupola or vault - shall do so before the end of the month of September. If the model be used he shall be entitled to a payment of 200 gold Florins.

Such types of completion were not unusual at that time. Models made of clay, wax and stones were used to demonstrate the quality of specific designs and to win the support of the jury. Some were quite large and detailed so it would be possible to walk within them to make one's judgment. It was a large model that had been used by Neri di Fioravanti to specify the characteristics of the cathedral. 200 gold Florins was a significant amount of money.

This attracted many craftsmen who had six weeks and two months of extension to come up with innovative solutions to the problem.

A dozen models were submitted by people from different cities and trades. Some came from Pisa or Sienna, which demonstrates that the best minds of the time were working on this challenge.

Filippo Brunelleschi was one of them. He worked on a large brick model that even contained many decorative details. The Model was built together with Donatello and other talented craftsmen and sculptors.

In December 1418 the jury assembled, it included wardens, experienced consultants and representatives from the wool guild. Filippo Brunelleschi's proposal was received with some skepticism as he was not planning to use a framework to support the masonry work. This was an unorthodox and unexpected solution; a daring plan for which he did not want to disclose the technical details in order to protect his ideas.

A legend exists about this episode. This is most probably a legend but it illustrates the issues at stake here. It has been said that Filippo Brunelleschi suggested that the jury should commission the work to the contender that would be able to make an egg stand on a flat piece of marble.

After his rivals had failed Brunelleschi would have cracked an egg on the bottom and placed it in standing position. Thinking out of the box and managing secrecy are nicely intertwined in this story. In the end two contenders stood out. As for the doors of the Baptistery, it was Filippo Brunelleschi and Lorenzo Ghiberti.

However the choice was delayed as a crack had been discovered in the building, as a long visit from the pope distracted workers from their grand oeuvre (great works) and the current main architect had been removed from the job. Filippo Brunelleschi won in the following month quite a few commissions in Florence which included domes.

Interestingly, his model had gained him a new reputation. He was the one who had a plan that would allow building the dome without using a framework and he had shown he had ideas to solve specific challenges related to stairways, windows, and draining rainwater away.

Battista di Antonio was appointed as the new architect for the cathedral. However he mainly served as a foreman who oversaw the work in progress.

The same day Filippo Brunelleschi was appointed to oversee the work on the dome together with Lorenzo Ghiberti. Once more it was decided that the rivals had to collaborate. Filippo accepted. Each of them earned 3 florins per month.

In the documents that authorized the payments Filippo Brunelleschi was said to receive this money "omni eius ingenio" ("for all his genius.") while Lorenzo Ghiberti's payment was referred for being a goldsmith.

This would tend to confirm that Brunelleschi's plan was expected to be the one to be implemented. Three months after Brunelleschi's plans for constructing the dome were approved even though he had not been named winner of the competition and never received the 200 gold florins prize. However erecting the dome was his unique chance to exploit his revolutionary ideas.

The 7th of August 1420 the work on the dome began. The beginning of the construction was said to be celebrated with wine, bread and melon. How the dome would be erected was still largely unclear at that date. In the face of

the warden's concerns, Brunelleschi agreed to build the first fifth of the dome without scaffolding. From there a decision was to be taken on the best way to proceed.

This was a way to proceed with experimentation, to keep options open while gathering further knowledge. Today it is still unclear if Brunelleschi remained secretive to protect his ideas or if he was still uncertain on the best way to implement his plans.

Models are of great help but they don't give all the keys to succeed. Postponing the decision was most certainly a great way to buy time and remain flexible in the presence of uncertainty.

While the drama was mainly revolving around the vaulting technique to be used, other challenges were to be addressed. One of them was the transport of large pieces of building materials. To do this Brunelleschi came to design an "unheard-of-machine". This machine, a hoist powered by ox, became a source of inspiration for other renaissance geniuses such as Leonardo da Vinci.

The size and power were astonishing; it offered a reversible gear, an unknown feature before that time. The hoist was a technical marvel that helped solve a critical problem and impressed everyone.

Filippo claimed a prize for his invention and was granted 100 gold florins by the guild. In 1423 a competition was setup to stimulate the development of a new crane that could be used after the hoist had delivered the stones.

Here again, building on his recent success with the hoist, Brunelleschi won with an innovative design especially when one considers the limited knowledge of mechanical systems that existed at that time. His crane: the Castelo was proved to be reliable in the following years and even decades.

With such achievements, Filippo Brunelleschi was quickly outshining Lorenzo Ghiberti. Nevertheless the two of them were still earning their 3 florins per month. Another competition was setup for a wooden chain. Here again Filippo's design was selected and he won another 100 florins.

When the trees from the wooden chains were delivered, Filippo was in bed because of an alleged body pain. When he appeared on the building site, his head and chest were bandaged. It was Lorenzo therefore who was in charge of implementing Filippo's plans.

After the work had been painfully completed under the lead of Lorenzo; Filippo made an unexpected swift return where he appeared in great physical condition. He criticized the work of Lorenzo at great lengths and claimed that reworks were needed.

Not long after, the salary of Filippo was raised to 100 Florins a year while his rival remained at 36 per year but with reduced responsibilities.

The rivalry between the two masters kept going with harsh fights and ruthless accusations. Although the truth remains unknown, some observers suspected that Filippo Brunelleschi had played a bitter trick on his competitor

In 1426, it was time to take a decision about the technique used to finalise the dome after a fifth of the construction had been completed. It appeared that Filippo's plan was approved. No scaffolding was to be used. It was to be built "circle by circle".

Masons working on the dome had to wear harnesses and to follow some strict safety rules. From 1428 work was progressing smoothly. However other problems began to emerge. It was expected that that the cathedral's exterior surface should be covered with marble.

This was quite new for Florence. Marble was supplied from the famous Carrara quarry located 65 miles away from the city. It was cut and polished in Carrara using precise techniques and then it was shipped along the Arno River on fishing boats.

Transportation was a costly but also perilous operation, in 1421, one of the boats sank, and lost its precious load. In 1426 shortages started to happen.

Filippo Brunelleschi had been looking for a solution to this problem. In 1421 he received the first patent that was ever awarded for an invention. It was described as follows: some machine or kind of ships, by means of which he thinks he can easily, at any time, bring any merchandise and load on the river Arno and on any other river or water, for less money than usual.

Filippo who was regularly complaining about plagiarism and the need for secrecy had provoked a radical innovation in the field of innovation. The vessel he built was called Il badalone or the Monster. However, when he acquired a first transportation contract, the patent had already expired. Furthermore the first vessel never reached Florence as it sank, losing its entire load. He never managed to recover the precious stones and lost 1000 florins.

Following this episode the life and work of Filippo Brunelleschi continued to be chaotic. He became heavily involved on Firenze's side in the disastrous war against Lucca in 1433. Later he was also arrested and spent time in jail most certainly due political manoeuvres. This did not stop the construction of the Dome.

In 1436 the dome was completed and the Bishop of Fiesole who took care of setting the final stone and consecrated the cupola. The people of Florence were enthusiastic and celebrated the achievements.

Filippo Brunelleschi had accomplished something amazing.

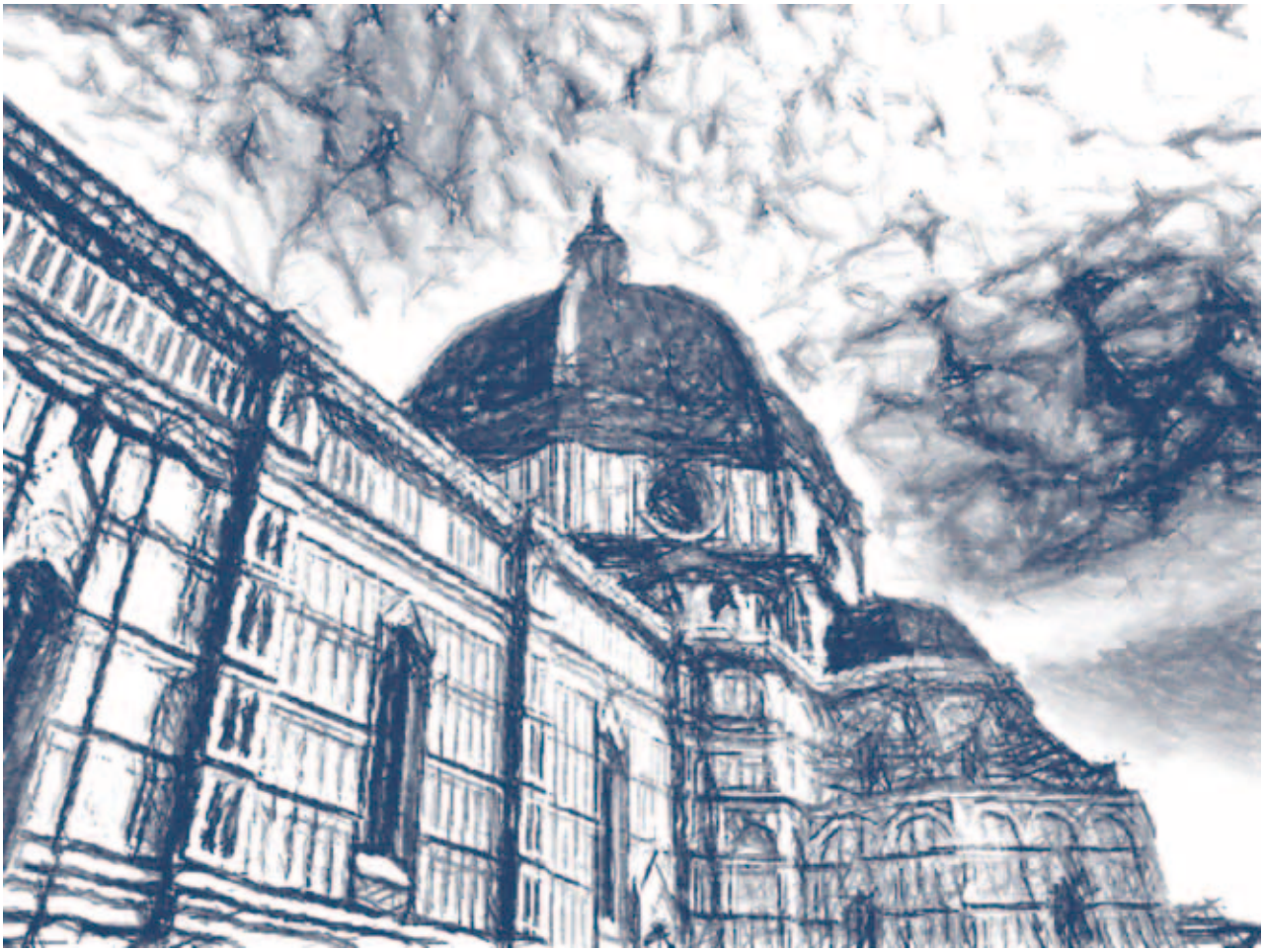
Such a dome was never again erected until modern technologies allowed approaching building construction in very different ways.

Filippo was considered a genius and he was buried within the cathedral with the following words on his grave:

CORPUS MAGNI INGENII VIRI PHILIPPI BRUNELLESCHI FIORENTINI

Here lies the body of the great ingenious man Filippo Brunelleschi of Florence ■

(1) *Filippo Brunelleschi was born in Florence and had grown up in the vicinity of the cathedral under construction. Every day, he could admire the mechanical ingenuity at work on the construction site. He trained as a locksmith; a revered profession that developed a dexterity often used in decoration works; a profession that engendered many well-known sculptors and artists.*



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CREATING SHARED VALUES THROUGH A SUSTAINABLE SCRAP STREAM

A LOOK AT PRODUCTION SCRAP MANAGEMENT IN CHINA

By Jean Deng

JOURNAL OF SUPPLY EXCELLENCE

***Jing (Jean) Deng**, CPSM, received her MBA from EIPM in 2013. She was awarded Best MBA Student 2012-2013 and published an article in the book "Global Industrial Trends" during her MBA programme. She started her purchasing career in Whirlpool IPO and later joined Caterpillar as Commodity Manager.*

Increasingly, Companies aim at creating shared value from profitable business strategies combined with environmentally sound business practices (Porter, Kramer, 2011).

This thinking creates new opportunities for profit and competitive advantage while it benefits society by addressing the sustainable concerns and helping to resolve environmental issues.

Many industries such as automotive, home appliances, as well as equipment and machines, consume steel and castings and produce scrap as a by-product. Both steel mills and foundries use recycled scrap as the principle ingredient for their production.

With the heavy reliance of those industries on steel and castings and the relative value of ferrous scrap in the market place, it is vital that ferrous scrap is strategically managed as an important asset, not as a waste.

The acquisition and disposition of scrap by those facilities through the extended value chain is one of those companies' most significant cost drivers.

However, by comparing the scrap utilization rate between China and developed countries, we are surprised to observe that there is a huge gap. It is partially due to either the potential economic benefits of scrap management not fully recognized, or a misconception that scrap programs are complex to initiate and implement, or the lack of systematic methods to aid purchasing professionals in accurately measuring benefits and costs.

Increasingly, there is also a tendency for companies to think how to derive the shared value from their profitable business strategies and environmentally sound business practices in their scrap stream.

However, despite the successful attempt of the shared value in scrap management, the process to put this practice into a widespread and reproducible model is still under development.

In particular, how to measure and link the wider benefits with business results and identify gaps to optimize strategy are critical to drive scrap recycling to a higher level.

In light of the above facts and trends, this article focuses on the study of production scrap management in China and provides recommendations and solutions, that offer manifold benefits for the business including:

- The maximization of scrap recovery value, reduction of scrap recycling cost in supply chains and more importantly,
- The creation of shared value to develop new opportunities for innovation, growth, social and environmental impacts.

This endeavor will also support the companies' commitment to worldwide sustainability, which ensures the best use of our natural resources and also a decreased environmental footprint.

We will start with a brief review of key concepts on the scrap value chain, circular economy, value creation and business ecosystems.

Next, the project looks at the current situation of scrap management on the supply side and analyses two collaboration initiatives explored on the demand side.

Last, we conclude with the practical application and a brief consideration of what limitations this study has and how this research could be developed further.

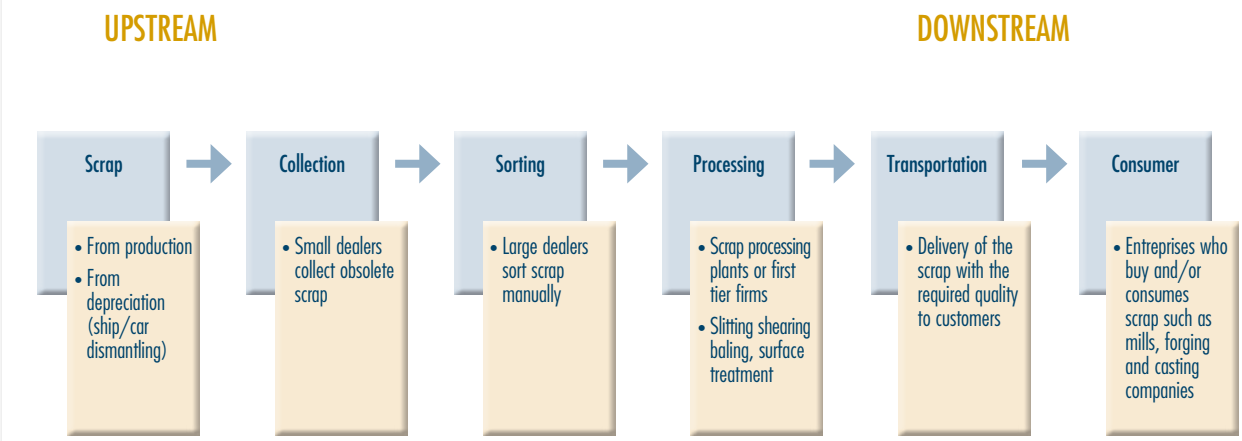
Literature Review

Scrap Value Chain

The value of a commodity determines its price. The amount of commodity value depends on how much labor is required to produce such a commodity.

Scrap value is manifested in its value chain including collection, dismantling, processing and transportation (Figure 1).

Figure 1 Scrap Value Chain



Circular Economy

Circular economy is economic development based on the material cycle, recycling, and utilization. Efficient use and recycling of resources is the core of circular economy. The principle is to reduce, reuse, and recycle the resources. The basic feature of its production is low consumption, low emission, and high efficiency.

There are three levels of implementation of circular economy: small loop (internal), medium loop (between enterprises) and large loop (socialization). Scrap, as the raw material in the iron and steel industry, can be recycled infinitely.

Complied with the principles and development of circular economy, the loops in three different levels are widely implemented.

For example: the enterprise cuts head or tail of steel and reuses scrap in their internal production process (small loop); some prompt industrial scrap is sold directly to mills under contract (medium loop); the depreciation scrap from ship/automotive dismantling is recycled (large loop). (Hu, 2011)

Value Creation

Porter and Kramer described the concept of shared value and argued that policies and operating practices enhanced the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operated.

By better connecting companies' successes with societal improvement, shared value opened up many ways to serve new needs, gain efficiency, create differentiation, and expand markets.

They also suggested three key ways that companies could create shared value opportunities: by re-conceiving products and markets, by redefining productivity in the value chain, and by enabling local cluster development (Porter & Kramer, 2011).

Creating Shared Values

Creating shared value from re-conceiving prod¬ucts and markets focuses on revenue growth, market share, and profitability that arise from the environmental, social, or economic develop¬ment benefits delivered by a company's products and services.

Creating shared value from redefining productivity in the value chain focuses on improvements in internal operations that improve cost, input access, quality, and productivity achieved through environmental improvements, better resource utilization, investment in employees, supplier capability, and other areas.

Creating shared value from enabling local cluster development derives from improving the external environment for the company through community investments and strengthening local suppliers, local institutions, and local infrastructure in ways that also enhance business productivity.

Table 1 Illustrative business and social results by level of shared value,

source: (Porter, Hills, Patscheke, & Hawkins, 2011)

LEVEL OF SHARED VALUE	BUSINESS RESULTS	SOCIAL RESULTS
Reconceiving product and markets : How targeting unmet needs drives incremental revenue and profits	• increased revenue • increased market share • increased market growth • improved profitability	• improved patient care • reduced carbon footprint • improved nutrition • improved education
Redefining productivity in the value chain: How better management of internal operations increases productivity and reduces risk	• improved productivity • reduced logistical and operating costs • secured supply • improved quality • improved profitability	• reduced energy use • reduced water use • reduced raw materials • improved job skills • improved employee incomes
Enabling cluster development How changing societal conditions outside the company unleashes new growth and productivity gains	• reduced costs • secured supply • improved distribution infrastructure • improved workforce access • improved profitability	• improved education • increased job creation • improved health • improved incomes

Measuring Shared Values

Measuring shared value targets tracking the progress and results of tailored shared value strategies.

Porter and Kramer developed a business and social results table by levels of shared value.

For each shared value opportunity, companies can identify and track both social and business progress; their common goals are to address a social problem and improve business performance (Table 1).

Table 1 Illustrative business and social results by level of shared value, source: (Porter, Hills, Patscheke, & Hawkins, 2011)

Business Ecosystem

Moore defined "business ecosystem" (Moore, 1996) as

- an economic community
- produces goods and services of value to customers
- customers are members of the ecosystem
- include suppliers, lead producers, competitors, and other stakeholders.
- members coevolve their capabilities and roles, and align themselves with the directions set by one or more central companies
- members move toward shared visions to align their investments

Survey

Scrap Management Practices on Supply Side

A survey was conducted in 2013 with nine companies in China to understand how different industries manage the scrap produced in house so as to identify the effective way to manage scrap sales.

The participants came from Home Appliances, Machinery & Equipment, Power & Automation, Automotive, and Steel & Fabrication. Half of them are the leaders in their field and multinational companies who have a presence in China.

Organization

The survey shows there is no clear responsibility defined in the organization regarding scrap management. Scrap is taken as waste instead of an asset. Purchasing in most companies oversees scrap prices but lacks in understanding of the scrap market.

It is evident that the purchasing function should have distinctive advantages in leading the scrap recycling activities on both the enterprise level and the supply chain level, although it differs from the traditional buying function.

Taking into consideration "from the cradle to grave", purchasing has the inescapable responsibilities to dispose of the scrap and meanwhile create more value.

In addition, as an important raw material for steel and foundry industries, scrap is a commodity instead of waste.

Commerce

Most participants use price index and negotiation as the basic tools to mange scrap prices. Sealed bidding and forward auction are also used to achieve a sort of competition.

The contract length is from quarterly to annually, but the price fixed period is more short-term, maximum quarterly, due to frequent fluctuation.

There is argument that e-bidding is a popular tool but not fit for scrap dealers or processors, because the operators in the scrap industry are usually not well educated.

Operation

Critical factors affecting scrap prices in operation were identified through the survey as well.

- Rough scrap sorting devalues the scrap recovery.
- Scrap dimension and composition affect price.
- Outdoor storage depreciates the scrap value as additional processing on rusted surfaces is required.
- Transportation affects price due to the different choices of distance and load for bulky and heavy scrap.
- Scrap value chain impacts price (middle market cost).

To sum up, most companies rely on scrap dealers/processors to sort, transport, and process after collection, because limited resources are allocated internally for strict control on scrap flow and professional staff in this field is also scarce.

Scrap Management Practices on Demand Side

Like other commodities, scrap also faces price volatility and supply risk. It is important to seek an effective method to mitigate such risk and achieve the stable price and supply.

Hence, the project also studies two production scrap management initiatives in China from the demand side.

According to the interviews with the foundry companies in 2012-2013, Casting company A presented a successful story in the collabroation with their customers.

On the contrary, Casting company C shared an unsuccessful trial with their customer and their customer's fabrication supplier.

Good Practice: Vertical Integration and Circular Economy

Casting company A is located in Zhejiang Province. Unlike the traditional casting companies in China, the special feature of this company is that they purchase a certain amount of scrap from their customers instead of fully relying on scrap dealers.

It improves its own scrap processing capability by investing the different scrap processing equipments such as cutter, shredders, so as to make themselves flexible to use different sizes of scrap to produce the casting components.

It also utilizes the same trucks by which the components are delivered to the customers and on the way back the trucks are fully loaded with scrap from customers.

Value chain can be used to illustrate the value created from such vertial integration (Figure 2).

With the traditional scrap stream, the lead time is longer, and the additional costs are unavoidable.

That will also increase the risk of price fluctuation and stable supply.

Casting company A integrated its upstream processes including collection, sorting, transportation, and processing in house.

In this case, the middle market was reduced to minimum, and their purchasing cost of scrap can be optimized.

Furthermore, the scrap quality and stable supply can be guaranteed.

Figure 2

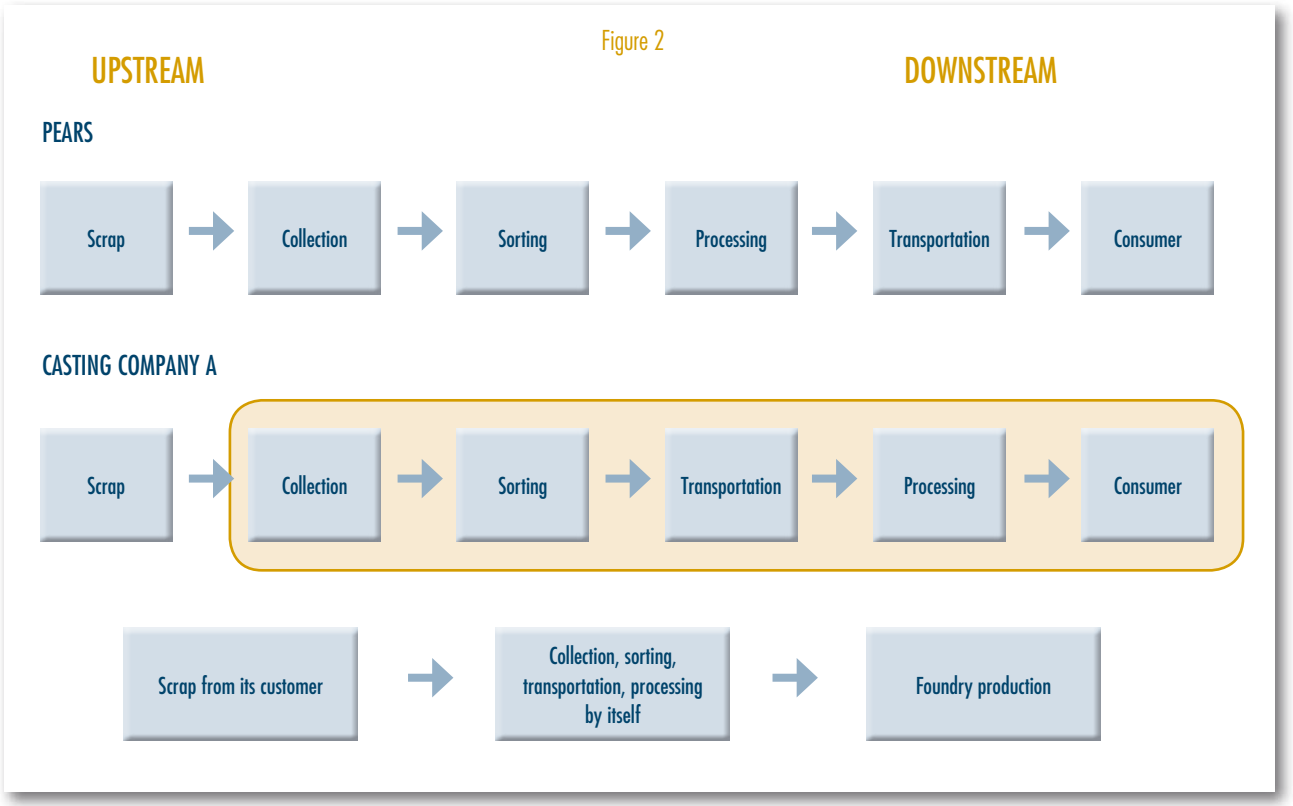


Figure 2

Casting company A implemented the concept of reverse logistics in a perfect way. The transportation cost is reduced for the shipping of both components and scrap.

That's a perfect win-win idea for transportation optimization, in terms of financial pressures such as a sharp rise in oil price and environmental (greenhouse gas emissions) concerns, which generates less pollution while still meeting business needs.

Casting company A case is also a good example of a medium loop circular economy. The eco-efficiency strategy approach is used to manage scrap, which not only creates value for their firm, but also decreases their firm's environmental footprint as much as possible.

Casting company A made innovation in scrap management by collaborating with its customers in a new business ecosystem. The new business model brings a new strong linkage between them and their customers.

With improved bottom lines and environmental commitment, the model develops a competitive edge on many fronts.

Lesson Learned: Lack of Transparency and Trust between Upstream and Downstream

In the attempt of establising the collaboration between scrap upsteam and downstream, casting company C faced more barriers.

Figure 3

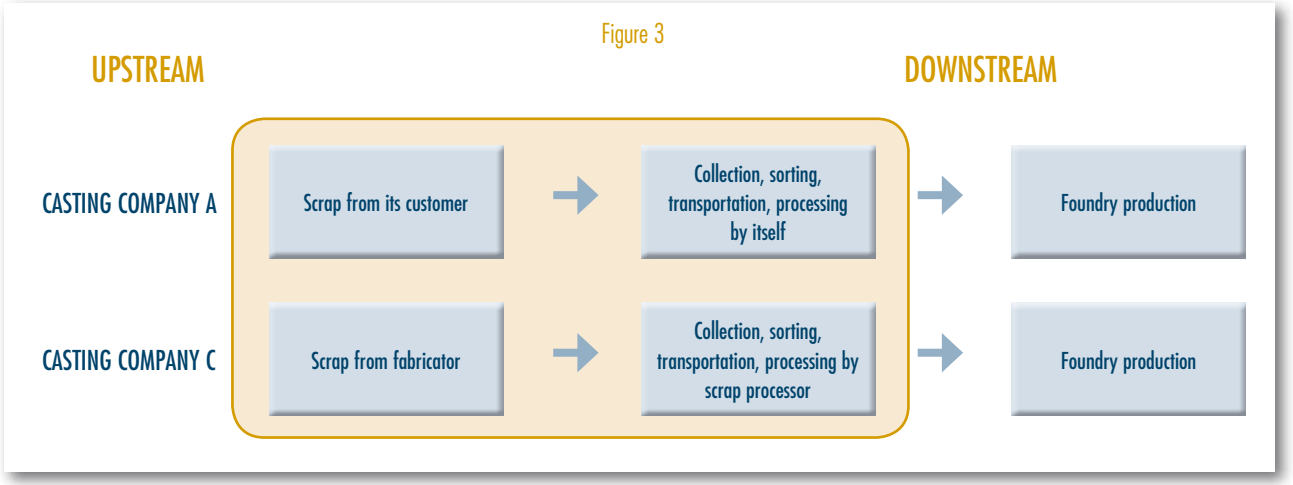


Figure 3

Casting company C is located in Jiangsu Province. They usually buy the high quailty scrap from 6-8 scrap dealers nearby. They negotiate scrap prices with dealers with reference to the market index on a monthly basis. They explored a potential opportunity of buying scrap directly from a fabrication company which also served the same customer.

After the preliminary review of material composition and cost differences, they realized there should be one scrap processor in between to help them process the scrap so as to ensure both the size and the surface to meet their casting requirements. However, the project was cancelled eventually.

Both the casting company C and the fabrication company preferred to use their own scrap processors because of a long history of business relationship and better understanding of their operation requirements respectively.

In addition, their common customer had no influence power in this case because the scrap was owned by the fabrication company, even though the scrap recovery value was deducted in the fabrication quote.

What's even worse, because both parties were not familiar with each other, they were not willing to calculate what were the actual cost benefits in between.

Casting company C is a traditional foundry manufacturer without vertical integration. Due to the property of scrap and reliance on a scrap processor, casting company C can't resolve the following issues.

- Both fabricator and casting company are not willing to share information. Value of new business model is not transparent for analysis, so motivation for further evaluation is very low.
- Middle market increases the cost of recycling. In this case, it makes a new recycling model almost impossible and commercially non-viable.
- Strong resistance to cooperation due to a long history relationship with the current scrap supply base.

Recommendations

As a summary, scrap is perceived as an important commodity to the scrap users.

Because of its environmental and economic impacts, the interviewed casting companies have made different attempts of closer collaboration between scrap producers and scrap users to promote recycling.

All their successful experiences and failure lessons provide other companies useful insights. The creation of shared value in the scrap stream is worth further exploration.

As the above analysis has shown, innovative scrap management practices are more prevalent on the scrap demand side that has both supply and cost pressure.

It follows that scrap management on the supply side is still driven by the traditional way, but lacking in collaboration within the whole scrap stream.

Without the "shared value," speed to maturity is slower and innovation is less frequent than the developed countries, resulting in a lower scrap utilization rate and comparatively less efficient scrap management.

However, as cost pressure continues to grow and the competition becomes more intense, both scrap generators and users may have an increasing requirement on the efficiency of scrap recycling.

This, along with maturing government regulations, will prompt China companies to begin building an eco-system thinking in terms of long-term strategies.

Ultimately, China scrap management professionals must seek a sustainable collaboration model to achieve economic, environmental and social benefits.

Challenges to Mature Scrap Management

On the way from current practice to the mature level of scrap management, companies will discover new chances for reshaping and differentiation in traditional business models, and recognize the potential of new markets or sources they have previously overlooked.

Such evolution often requires repositioned scraps, new processes or different distribution channels. Logistics systems are beginning to be redesigned to streamline handling, improve vehicle routing, and reduce the number of trucks driven empty.

Efficiency and innovation are strongly influenced by local industrial clusters, including scrap generators, scrap processors, scrap users, and logistics companies in the scrap stream. And shared values are created through all the steps above or the like.

Scrap management can be efficient, environmentally sound, and profitable but it requires a continuous initiation and gradual change of the traditional methods. In turn, new challenges and complexities are added.

The pragmatic approaches to tackle these challenges are expected. The main challenges per Porter et al.'s shared value level with the preliminary suggestions are addressed below.

Challenge #1 Re-conceiving product and markets: how to target the overlooked scrap source and demand?

Supply managers need to pro-actively seek out and explore collaborative opportunities with others within their supply chains.

To fulfill this purpose, scrap management professionals must broaden their view and improve understanding on what scraps other organizations within the supply chain are producing or using in their own manufacturing process.

This drives an increased need of the information exchanged between organizations in the scrap loop, especially through the reverse channel, in order to enhance the mutual understanding and identify the initiative for competitive advantages.

Trust and transparency are two critical factors.

Therefore, the supplier/customer relationship management will influence the speed, quality and quantity of information available to analyze the opportunity.

Challenge #2 Re-defining productivity in the value chain: how to assess the benefits of scrap management initiatives?

A scrap recovery and cost reduction program requires a strong business case to convince different functions and companies affected in the supply chain to work jointly.

Therefore a thorough understanding of the disposal chain and a system-wide total cost analysis are needed.
However, there is a reminder to such functional decision-making processes.
When the company evaluates the costs and benefits of implementing a reusable scrap system at their facility, it will find that the costs shift not only within the company, but also within the ecosystem including scrap generators, scrap processors, the transportation providers, and the scrap users. In addition, social results and their impact on business results are to be captured.

A holistic view of cost and benefit (business and social) evaluation is the key, which is also taken as the prerequisite for collaboration discussion.

Challenge #3 Enabling cluster development: how to partner with other companies in scrap management within the supply chain?

Understanding the total costs associated with scrap disposal is a critical step in formulating where tradeoffs can be made.

When total system costs are reduced, the scrap recycling decision essentially becomes a supply chain decision. Multiple parties are involved to evaluate how to share the rewards and costs of an environmentally-friendly scrap recycling program.

The cost trade-offs will be analyzed and the potential for bottom-line impact will be evaluated.

This step will guarantee if a collaborative scrap program can be executed and the shared values can be created in a sustainable way.

An effective scrap management strategy must define clearly the role of each stakeholder in the business ecosystem..

The Future of Scrap Management

Efficient scrap management yields value recovery, cost optimization and footprint reduction that offer significant opportunities of recycling.

Yet most companies in China are still conducting basic and traditional management and remain unaware of improvement opportunities for scrap management. Ignoring these opportunities may limit a company's competitive advantages and social commitments.

We hope that more companies will follow the footsteps of companies with best practices in the recycling field and evolve their capabilities to upgrade the industry level. Despite its complexities, the pathway to mature scrap management is clear.

First, companies must increase the information exchange and identify the scrap opportunity within a broader supply chain.

Second, companies must evaluate the social and business benefits of the whole scrap stream by a systematic total cost approach.

Third, costs assessment and benefits sharing must be made in order to establish the partnership with the related companies to jointly manage scrap.

Ultimately, efficient scrap management in a sustainable way will inspire and influence the companies that produce or use scrap.

Shared value creates a strong link among the companies impacted in the scrap stream.

Finally, the whole industrial clusters and society will benefit from a collaborative approach in scrap recycling.

Limitations of This Study and Note for Future Research

The data of this study is collected from the survey and the interview. The survey was restricted within the Eastern China. Besides the limited number of participants, the facts collected are more qualitative than quantitative.

The reason for this is the participants' concern of confidential information leakage.

Because of such limitations, the study results should be considered exploratory and the findings are tentative;

This study has also outlined topics that can be addressed in further research of this area - the specific cost and benefit analysis of vertical integration or closed scrap loop; the sustainable collaboration model between scrap producers and users - to further understand the geographical impact on scrap management practices and formulate a complete scrap management model in China.

Conclusion

Companies with traditional scrap management practices typically pay high attention to scrap recovery and cost reduction.

But the innovative closed-loop recycling initiatives with collaborative approach will drive the mature model of sustainable scrap management in the future.

Efficient scrap management in a sustainable way is not a switch just waiting to be turned on, but it represents a journey often fraught with difficult choices (what types of changes are needed, how to measure the payback, and how to share the values).

This study has provided a snapshot of the production scrap management practices in China.

We strongly believe that the scrap industry will have a deep impact on the sustainable development of China's economy in the future.

Therefore, scrap management is a critical topic worthy of more attention and deep thought.

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IS 3D PRINTING A DISRUPTIVE TECHNOLOGY?

EVIDENCE FROM THE HEARING AID INDUSTRY

By Christian Sandström

JOURNAL OF SUPPLY EXCELLENCE

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3D Printing has received a lot of attention recently. Having been used for rapid prototyping for a long time, this technology is increasingly also adopted for manufacturing purposes.

It has been suggested that 3D Printing will spark a new industrial revolution and that the technology will have disruptive effects in the coming years (McKinsey, 2013), but in those early stages, little evidence has been provided. The introduction of new technologies frequently results in competitive turbulence and often it alters the structure of an industry.

Nokia's decline in the shift from feature phones to smartphones and the bankruptcy of Eastman Kodak can be regarded as two contemporary illustrations of this pattern.

While it is always difficult to predict the future, it is nevertheless possible to discuss the impact 3D Printing will have by looking at recent examples.

This paper seeks to assess the disruptive potential of 3D Printing by drawing upon evidence from a setting which has already transitioned its operations to using the technology: the global hearing aid industry.

The hearing aid industry is a particularly interesting case as it has already transitioned its operations to using 3D printing.

More than 10 million hearing aid shells have already been manufactured using 3D printers. By 2006-2007, most of the hearing aid manufacturers had scaled up and implemented the technology across all their operations.

Unlike in other industries, where adoption is still happening, it is therefore possible to look retrospectively at the technology and explore the results of adoption.

The article begins with a brief overview of current theory regarding under what circumstances new technology results in competitive turbulence.

It subsequently moves on to discussing the impact 3D Printing had on the hearing aid industry and to what extent these findings apply to other cases. Eventually, a concluding remark is provided.

Theory on Disruptive technological change

Radical technological change can at times result in shifts in the competitive landscape. Incumbent firms may be displaced by entrants and in other cases, market shares are altered between established players.

A rich and growing body of literature has tried to assess under what circumstances technological change also results in industrial changes.

A new technology's impact on the technical capabilities of incumbents is an important determinant of whether established firms succeed (Tushman and Anderson, 1986). If existing technological knowledge is rendered obsolete, incumbents might be at a disadvantage as core competencies become core rigidities.

The effect on non-technical assets such as brands, sales channels, linkages to the market and organizational structures also need to be assessed (Henderson and Clark, 1990; Tripsas, 1997). I

f several of those elements are altered by a new technology, incumbents are more likely to be displaced by entrants.

Another sub-stream of research has studied how incentives differ between entrants and incumbents, stating that an incumbents' established, profitable markets create an asymmetry of incentives, favoring entrant firms.

This line of thought was popularized by Clayton Christensen in the 1990s (Christensen, 1997) and it essentially argues that technologies which are not demanded by a firm's established customer base will become problematic to incumbents as they struggle to allocate sufficient resources to developing it.

As the technology evolves, incumbents are subsequently left behind and never catch up.

The impact of 3D Printing on the hearing aid industry

While significant changes in market share have taken place in the hearing aid industry over the past decade, it is still clear that it has not resulted in any major entry into the industry.

Rather, the industry is more consolidated than ever as the six established players now control about 98 percent of the market.

Moreover, none of the respondents in this study state that the changes in market share between incumbents such as Siemens, Phonak and Oticon had anything to do with 3D printing.

How can we explain that 3D printing didn't really affect this industry in any disruptive way?

An important reason for why 3D Printing had little disruptive effects is related to the fact that it had a relatively minor impact on the operations of established firms.

Only a small fraction of the technological competencies were lost as the making of a shell is about ten percent of the overall manufacturing related to hearing aids.

Most of the value add is rather related to the signal processing and electronics in a hearing aid, which were unaffected by the transition to 3D Printing.

While the hearing aid industry experienced significant skill loss with regard to the actual process of manufacturing shell, the overall technical system was left intact.

Moreover, non-technical assets such as intellectual property, brands and market organizations have not been altered by 3D printing. The shell remains more or less the same as before, it's merely better and cheaper to manufacture it than before.

3D printing's impact on those factors that influence the focal firm has been relatively minor. 3D printing was competence destroying technologically, but only to a limited extent as the overall product remained the same. This, in combination with the fact that non-technical assets remained intact seems to have prevented entry into the market.

It is also clear that incumbent firms had plenty of incentives to pursue the technology at an early point.

Several of the incumbent firms had been waiting for a technology that could industrialize the making of shells, a process which had previously been performed by human craftsmanship.

Many of them thought that this was a logical step as all other manufacturing was already industrialized. The previous process was labor intensive, lacked control and was subject to human error. As a consequence, established players had a lot of incentives to pursue the technology.

Another important reason for the minor impact on the competitive dynamics might also be related to the fact that 3D printers, software and scanners were available on the market from quite an early point and hence, one should not expect that it would result in any competitive changes among the dominant players.

Some firms could adapt a "wait and see" strategy and catch up with the pioneers easily, whereas the pioneers at times lost momentum due to the technological uncertainty they were exposed to.

If special 3D printers had been developed in-house by some hearing aid manufacturers, the technology might have had a larger impact on the competitive landscape.

Do these findings apply to other industries?

Based on the above, one can speculate regarding the impact 3D printing will have on other industries.

Dental and medical applications might be similar to the hearing aid industry in the sense that 3D printing is replacing a manual process. Therefore it will arguably result in similar benefits in terms of better control and products that fit better.

Another commonality is probably related to competence destruction and the retraining of staff that might be needed. This might also be applicable to applications such as aerospace and automotive.

Aerospace, automotive and other industrial applications might also have in common that 3D printing only affects a few components in a larger product architecture which will in many cases remain largely intact.

When this is the case, and non-technical assets are not affected, the outcome will probably be similar - 3D printing would be a radical process innovation that has little impact on the competitive dynamics.

A third factor contributing to this scenario would be that up until now, 3D printers, software and scanners have been provided by specialized firms, meaning they are available on the market for anyone who wishes to buy them.

As long as this is the case, the technology as such may not cause any firm to gain a competitive edge over others.

The case, might, however, be different for consumer products or applications where it isn't a component that is being printed for usage in a larger industrial product architecture.

When the printed product is also the end product, there are arguably fewer barriers to entry and in such a case, 3D printing might cause disruptive changes. Assets such as brands might however shelter larger firms from such changes.

Discussion

3D Printing may also have more disruptive effects in those cases where it influences the supply chain, e.g. spare parts.

The key question to be assess is what processes are rendered obsolete by the new technology and which firms will therefore lose business? For instance, if spare parts can be printed on demand at the place where they are needed, logistics will be disrupted.

Moreover, the entire product can be made from a printer, we might see a democratization of manufacturing. Manufacturing capabilities are at times assets which give established players a competitive edge. To the extent that this becomes available on the market, we might see that these firms lose part of their competitive edge.

Their remaining competencies and assets will be more related to the designs of different products.

As these designs often exist in the form of electronic files that can be easily transmitted electronically, we might see piracy and a potentially disruptive force similar to what the music industry experienced in the early 2000s.

There are several online communities today where people share CAD files and improve them.

As these are frequently available to anyone, and improved continuously, it might become an important source of innovation in the coming years.

One consequence of the above is that product development can become continuous and distributed. Traditional R&D work comes in a batch. An idea moves from concept phases through product development and is then scaled up, manufactured and launched.

The project had a starting time and an end. Eventually the product will become obsolete in the marketplace and the firm needs to have a new batch of development projects resulting in new, better generations of products.

With 3D printing, development takes place in the non-physical domain (in CAD software) and manufacturing is not a challenge. Hence, development work doesn't have to be organized as a batch, it has the potential of becoming a continuous process.

That is, you don't develop a product and sell one million units of it, then launch a new product. Instead, you develop one product, someone buys it, the same CAD file is improved, another person buys two units, then the next person buys a couple of units which are different from the first version.

As the ancient Greek philosopher Heraclitus put it: "no man ever steps in the same river twice, for it's not the same river and he's not the same man".

That's Wikipedia compared to Britannica. In the printed era, encyclopedias came as a batch (an edition) and they were developed by one organization.

Being only one organization imposed constraints on the quality of the content and improvements couldn't be made until the next edition (batch) would be released many years later.

For these reasons, Wikipedia was bound to outperform printed encyclopedias over time - one organization could not compete with the accumulated knowledge of millions

of individuals and it couldn't match the continuous updating Wikipedia offered. Will the same thing happen with product development work thanks to 3D printing? A couple of critical questions therefore need to be further addressed:

Which manufacturers will end up like Britannica with obsolete products due to the weaknesses of having a centralized, batch style development process? How can companies successfully leverage online communities to make improvements to their products?

If manufacturing becomes democratized and available to anyone and it becomes easy to access CAD files online, how do firms ensure any returns from their development efforts?

Conclusion

While it is tempting to look into the crystal ball and speculate about the future, predictions are more likely to be accurate if they are thoroughly grounded in theory and in contemporary changes.

Having identified a set of factors that explain why 3D Printing had no disruptive impact on the hearing aid industry, it is possible to draw some conclusions regarding under what circumstances this technology may upset the existing order of industries.

Industrial settings where 3D Printing is part of a larger technological and commercial system that remains largely intact will therefore probably not be significantly affected by 3D Printing.

This includes several of the applications where the technology is currently gaining momentum: aerospace, automotive and medical usages. Also, bearing current technological limitations in mind, 3D printing will probably continue to grow in its current application areas: prototyping, and manufacturing in the above settings.

Whether it will remain in these areas or have a more widespread impact across the economy ultimately depends on the pace of development and the limitations of the technology.

The fact that this technology offers the potential for both manufacturing and development to become distributed and continuous, might imply several disruptive changes in the future. Based upon current trends it is difficult to speculate further about these potential shifts.

Nevertheless, it is clear that questions related to piracy and how firms ensure appropriate returns from their own R&D efforts need to be further addressed.

Also, it remains unclear how global supply chains will be affected in the coming decades. In the short term, we tend to overestimate the potential of a technology. Its long term impact, on the other hand, we often underestimate ■

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FROM BUYER TO LEADER FOR EXTENDED DEVELOPMENT (LED)

By Bernard Gracia

JOURNAL OF SUPPLY EXCELLENCE

*After obtaining an MBA at Texas University (Austin), **Bernard Gracia** collaborated in the launching of one of the first post-graduate programmes in Purchasing in the world (MAI – Master Industrial Purchasing for the Bordeaux Business School). In 1990, associated with leading companies in the EU, he founded EIPM. As Director of EIPM, he launched the first MBA specialised in Purchasing in Europe and the first European Roundtable for CPOs. Bernard's training and research activities focus on Corporate Purchasing Strategy, Purchasing Organisation, and Value Creation Contribution.*

After having dried up the supplier market by reducing the number of first class players in order to be better served with a smaller TCO, the buyer must contribute to the sustainable economic recovery of its ecosystem - and not only by aiming at the company's margins improvement. In short: a big gap

In 1976, I was amongst the founders of the MAI (Institute of Industrial Procurement Management) in Bordeaux.

The first purchasing training courses in France weren't meant to teach how to buy better, but rather how to buy less, how to use less (design to cost, risk analysis, etc…).

These were certainly the reasons for which the French Purchasing culture was different from the rest of the world.

In 1990, EIPM (the European Institute of Purchasing Management) was created.

At that time, European Companies struggling with consolidated strategies started reflecting on a common purchasing strategy at a European level.

Consuming less wasn't the main focus anymore, but aligning to a real purchasing culture, common to different European branches, in order to reduce costs while consolidating purchasing.

LCC and TCO - an explosive union

From 2000, EIPM has developed its International branches (China, Brazil, India…) to support its clients who were no longer buying exclusively in Europe, but buying and producing globally - paying less (LCC - Life Cycle Costing) and better serving the Company's commercial expansion strategy throughout the world.

Those different stages have also led to market consolidation, both geographically and by sectors.

The world was shrinking, working 24/24 hours, 365 days a year, with fewer players. The goal was to reduce the number of first class suppliers to be better served with a smaller TCO (Total Cost of Ownership) thus reducing the administrative costs.

By adopting those practices, popular back then, purchasing dried up the supplier market, these consequences lead

us to today's efforts to restore those sources. Today, supply chain actors compete with each other, often facing bottlenecks on the first or second levels!

By analysing the past 30 years, it is important to point out that purchasing hasn't made much of a revolution. We could say that today we don't work deeper, but wider!

If we currently use the same techniques and practices that we used 30 years ago, we could certainly find today more companies which are sensitive to the strategic impact of these methods.

How should this function evolve?

Today, the buyer is not only buying a service, a product or a solution. He is buying a supplier relationship. Indeed, within a global context the buyer becomes the interface between the internal business partners (who should no longer be considered internal customers) and the external business partners (who are more than suppliers).

He will ensure the integration between internal and external in order to contribute to value creation.

He will therefore become the LED (leader for extended development). His role will be to align the purchasing strategy to the company's strategy:

- The buyer will invest in innovation to support the differentiation strategy of the company - in this way he will contribute to better sales - and therefore to profit.
- The buyer will negotiate prices and capacity to support the market share strategy of the company - he will then contribute to more sales.

More than ever, in order to contribute to value creation, the LED must lean on some of the external business partners and be recognised by them as the customer of choice, to whom the technology and capacity will be attributed to in priority.

To develop this type of relationship, the LED must be:

- **A salesperson** capable of enhancing the value of his company and not only a technical specialist who buys;
- **A leader** of a cross functional team and not only a simple manager;
- **An entrepreneur** who dares to take risks and also deals with them;
- **A communicator** who convinces the different partners, and not only to negotiate.

Such are the skills needed to support the development of new relationships with suppliers.

Those skills have, by the way, tremendously evolved if compared to what the first generations of buyers were seeking to develop. At that time, they essentially needed to prove they were capable of building a purchasing culture and developing purchasing techniques. Purchasing needed recognition by attracting new talents.

Developing a sustainable ecosystem

Today, as the role of the buyer evolves, the expected skills have changed. The LED contributes to a sustainable Economic Renaissance of its Ecosystem and not only to the improvement of the company profit. Indeed, as already started in the USA, the buyer will have a societal role by implementing within his near ecosystem the businesses he previously deployed in low-cost areas.

By locally concentrating his purchases - not necessarily for a lower cost, but for a bigger value to his company (those suppliers may also be clients) - the LED enables industrial or service sectors redeployment and rebirth!

Those are the human, ethic, social, humility and justice values that will allow the LED to be recognised within his ecosystem (internal and external) in order to, all together, create Value.

The development of a sustainable Ecosystem can only be attained when the same values are shared between its different members - internal and external partners.

The creation of Value stands on the sharing of common Values. That's why, for EIPM, tomorrow's motto for Purchasing and LED will be: "Values for Value" ■

How can I be a customer of choice?

...and attract supplier innovation

To be the company of choice to gain access to innovative developments from suppliers, you need to polish your ***ATTRACTIVENESS.***

Take a pen and write down what you can do to make your company ***ATTRACTIVE !***

5P

Marketing has its 5P's to outline what a company has to offer to clients.

Here are 5P's for Purchasing to define what a company has to offer to suppliers.

Pal up

If you compete head to head to access innovative developments from suppliers, you could simply benefit from being more supportive, accessible and easier to work with. You could openly share on opportunities and risk on a regular basis. Trust and openness can often offer a real advantage in terms of attractiveness. However, you need to continuously deliver on such expectations to stay ahead of the pack.

Promise

In some instances, a supplier could be particularly interested to access your company, as they think you can turn their innovation into gold or fame. The suppliers see you as a source of growth, as a great brand to work with or as a springboard to new customers. This will call to share your roadmaps and bring a spirit of ambition. This is something you can build on as long as you understand what makes them tick. They will deliver an extra mile for you but you need to be ready to help them develop or sell.

Position

In some instances, you might not be the obvious customer of choice for a supplier. Here you might be able to position your company as a lead user, as an unexpected customer of choice or as an attractive brand. For instance, you might bring them valuable technical challenges, relevant feedback or market knowledge. This might also call for a more relaxed attitude to Intellectual Property compared to their regular clients. If this is giving you a real advantage vis-à-vis competition, this could be a very fruitful way forward.

Partner

Here we keep the word partner for formal long term relationships. We all know that long term contract offer visibility to suppliers and can be really attractive to them– also you might want to consider IP sharing or risk sharing deals that offer you some form of exclusivity without jeopardising all opportunities for your supplier.

Pay

If a supplier holds the keys to access the innovation, you might need to pay something to access an innovation. This can be done upfront as co-investment or by offering the supplier an opportunity to be profitable over the long term. If such an innovation provides you an opportunity to be the first to market and to gain a competitive advantage, this could be the right way forward.

Now, find your own key to unlock each situation:

Position

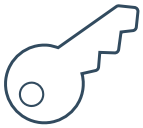
Lead user
Knowledge

Partner

Shared IP
Long term contracts

Pal up

Easy to work with
Open to innovation



Promise

Growth and volume
Help with sales

Pay

Co-investment
High margin

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WHAT FOR?

A "SYSTEM" APPROACH TO FIND A PURPOSE AND RECONCILE VALUE CREATION AND HUMAN VALUES

By Olaf de Hemmer Gudme

JOURNAL OF SUPPLY EXCELLENCE

Olaf de Hemmer Gudme *is Co-Founder of Université de la Valeur (Value University), manager of Valeur(s) & Management and President of afaV, a network of French practitioners specialised in Value methods. He has more than 20 years of experience as a consultant and trainer focusing on value creation in fields such as purchasing, innovation and IT. He has explored this approach within various projects and publications worldwide.*

An introduction to the e-book "A quoi ça sert ?" edited on Amazon and iTunes in August 2015.

Let's dream of a company in which:
- Strategy would target delivering to each of its stakeholders - investors, customers, employees, suppliers and partners, government, environment, society and NGOs, etc. - more value = more satisfaction and less costs;
- Products and services would engage current and future customers, improve employees' skills and wellbeing and develop suppliers' long term strength;
- Each function would be managed with KPIs, showing its contribution to the goals and success of other functions within the company;
- Industrial and information processes would produce only outputs useful to those functions versus the company's stakeholders, with efficient production and IT systems;
- Each actor would bring its time, skills and motivation in exchange not only for money but also wellness at work, a sense of personal and collective usefulness and long term personal achievement;
- Each person would achieve their goals by collaborating with others, whilst respecting each other's values;

A company with more value(s) in management? How is it possible?

Value/system methods:

A collective book "Valeur(s) & Management : des méthodes pour plus de valeur(s) dans le management [1]" [Value(s) & Management: methods for more value(s) in management] was published in April 2013, listing dozens of methods and detailing 18 which share common concepts:

- The value concept, in which value = perceived usefulness / perceived cost, targets solution improvement by:
  - improving its efficiency, by providing better answers to its purposes/goals for the different stakeholders of its life time: user, buyer, distributor, manufacturer...
  - avoiding unproductive resource spending not associated to the function: money, raw material, time, comfort, security …
  - a benefits / costs analysis
- A system approach, where each actor depends on others:
  - conditions are defined by their goals, modeled from relations with their environment
  - in a continuous flow of transformation from inputs to outputs
  - each analysis must be considered from a global viewpoint, integrating the whole life cycle and considering different levels of goals
  - actors and objects are in continuous interaction and evolution
- The importance given to meaning and dialogue: every analysis must be made with the people involved or impacted: the stakeholders
  - needs must be expressed by those requiring them (they often must be helped …)
  - any change is only effective if it is accepted or - better!
    - proposed by those who are impacted, and if it is implemented with them in short retroactive loops, demonstrating results and progressive improvement

Tools exist to help implement such concepts: system modeling enables tracing the flows of exchanges, which lead to the value perceived by stakeholders. Their systematic use would help provide a new foundation to the improvement of corporate performances in many/all domains: products and services, industrial and administrative processes, organization and IT, business models, strategy, interpersonal communication, etc.

The basic tools of system modeling are taken from "The general system theory" developed by Ludwig Von Bertalanffy[2] in the '50s and formalized in France by JY Le Moigne[3] in the '70s.

They can be found under many different names and variations in methods, such as Value Analysis, Value Stream Mapping, Business Mapping, etc. We'll specifically use the following:
- Define relations between the elements of the environment
- Define usefulness for stakeholders
- Consider the different steps in the lifecycle and stakeholders' categories

- Value = perceived usefulness / perceived costs
- Relations between system components

Value vs Values

Management approaches widely use the terms "value" and "values" with different meanings and nuances, and these are often in opposition:

Value = money = wealth, OR = utility

Values = ethics = caring about people and the planet,

One notes that the company is a means for stakeholders to exchange what they have for something that will create "value" for themselves:

- Clients exchange money, but also time, comfort, information... in the acquisition process... for a product/service, which will itself create value for themselves or their own customers: satisfy physical or intellectual needs, social status etc.
- Sellers exchange the same product/service, but also marketing and supply chain costs and time... for money, but also for reputation, long term relationships etc.
- Each of them perceives more "value' in what they get than in what they give, even if the same is given and received on both sides! If not, the exchange will not happen (or at least not last long). So the exchanged "valueS" are subjective and relative to each stakeholder.

The same applies to exchanges with employees (money, status, relations, work conditions, careers versus time, skills, motivation etc.), suppliers (products/services, innovation, stable supply, market information in exchange for money, strategic partnerships), shareholders (dividends, share selling price, image, industrial synergies vis a vis investment, management involvement), and also environment (expecting respect in relation to decent life conditions, air, water) and the society (expecting employment, local wealth improvement, tax money versus infrastructures, education, security...), etc.

When it comes to exchanges with people the company may not always respect them, but taking the 'values' of customers, suppliers, employees and society, amongst others, into account this certainly is part of the exchange of 'value'. This shows value and values more like sources of opportunity and synergy rather than the opposite.

Each company is built on the choice - explicit or implicit - to consider certain stakeholders value(s) as a priority: the neo-liberal public-owned company usually focuses on shareholders' short term profit by share value, while social entrepreneurs choose employment of specific public as a priority, profit becoming a 'constraint' for long term growth. So even if one of their stakeholders obtains priority, every company HAS to deal with the satisfaction of EACH of its stakeholders to secure its sustainable future!

Application to the company

The goal of a company is commonly defined as "to create wealth", as such in capitalism the first beneficiaries are the shareholders. This is obviously not wrong, but many employees, managers and even shareholders do not see this as a motivating goal, and are looking for more meaning and purpose in companies!

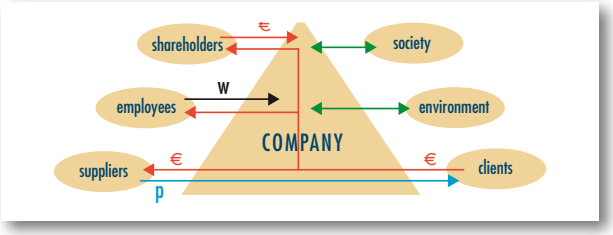
Applying the value/system approach provides the means to build a more fulfilling vision of a company:

Needs: "a company, what for?"

Define relations between elements of the environment

Le Moigne models a company as a system in direct contact with external entities: shareholders, clients, employees, suppliers, government, environment and society (its 'stakeholders').

The company manages and transforms flows between those stakeholders: money, products and services, information, energy, etc.



"For whom?": Define usefulness for stakeholders

System modeling provides the means to complete and specify the performances required for the company and its purpose: every company is built to generate value for each of its stakeholders, through what is exchanged with them:

- For shareholders: a financial value, where they will obtain more wealth from the company than their initial investment, but often also a benefit from participating to decisions or to a global project.
- For customers: a use value, where products and services received have more usefulness than their expenditure, but also time to access, etc.
- For suppliers: an economic value, in which the price received overcomes the resources invested in their realization, but also where they may also gain visibility on their future, validation on their strategy, etc.
- For employees (which are not part of the company, but are linked to it by a contract and their 'engagement'): an economical value, where salary balances the time, energy and skills invested, but they also receive a social status, work conditions, improved employability, social interactions, respect for their personal values, etc.
- For the environment: a respectful impact (no pollution) is supposed to balance the resources (air, water…) and life conditions it 'freely' supplies.
- For society (government, NGOs, local authorities and

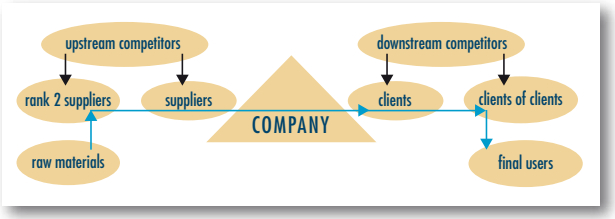
public): a respect of community rules, minorities, local industrial network, etc. must balance the infrastructures and services it supplies (roads, schools), as well as the image of the company it projects.

It is easy to see that the value perceived by each stakeholder from their exchange with the company is very different, not always/only measured in economic terms, and can even be subjective or irrational!

We should therefore talk about the company value(s), the explicit management of which could provide meaning for the company stakeholders.

This finding is not a political or economic a priori, but a direct consequence of the rational use of system modeling.

When modeling what happens further from the elements in direct contact with the company, we show its insertion into a more global ecosystem:



The company's products/services, output from successive transformations of raw materials, are often inputs of its clients own products/services, which will find their real use only during consumption by final users.

At that level of modeling, only competitors appear – which may take clients and suppliers away from the company.

The company strategy should require detailing the levels of performance to be achieved through the exchanges with the company's stakeholders, taking into account their own stakeholders' needs and requirements.

Those strategic requirements cannot be defined correctly without a constructive dialogue with each stakeholder, which may reveal specific needs, e.g.:

- A specific shareholder would look for a rapid return through dividends, while another for a medium term increase in the share price on the stock exchange, and another industrial investor may look for value chain synergies or the valuation of its brand on a new market. Instead, a "social entrepreneur" might first target employment of specific groups, profit becoming a "constraint" for growth.
- Suppliers segmentation according to their potential impact on the company competitiveness, medium and long term suppliers strategies, interest to keep suppliers' innovation only for the company would lead to very different relations and processes.

It becomes then obvious that the long term satisfaction of each stakeholder depends on the satisfaction of the other company stakeholders: no long term profit without enthusiastic customers, motivated employees, stable suppliers, respected environment etc.

Any company appears as a system, managing exchanges between interdependent external elements.

Many experts consider that each company determines a priority between its stakeholders, leading to define 'one goal' for the company, aiming at satisfying this particular stakeholder: this is at the root of many debates around the importance of shareholders, clients and employees.

Even if one category of stakeholders is considered as a priority, his satisfaction becoming THE goal of the company, a system view of the company underlines the interdependency between all stakeholders.

Even if ONE ultimate goal is set, it could not be accomplished (in the long term) without achieving the other objectives, satisfying the other stakeholders.

For example, a public-owned company will target shareholder revenue, but has to take care of clients, employees and suppliers.

A social entrepreneur will target employment as a goal, but has to generate profit for its investors to be able to invest for durability and remain competitive.

The prominence of a certain class of stakeholders is "only" a strategic choice: shares revenue will be preferred in a capitalist company, while employees' skills development will be preferred by a social enterprise, and another specific objective in a non-profit organization.

Each of them must secure its economic survival if not growth, and assure the long term satisfaction of its stakeholders.

System modeling goes along the most recent theories of the firm: "stakeholders theory"[4] and "contracts theory", and offers a solid accurate background, validated from the latest scientific theories enlarging thinking from "deterministic" to "system".

Stakeholder requirements can be expressed by modeling their relationships with their own environment: upstream and downstream industrial sectors, direct and indirect competitors… to be expressed in terms of purpose, usefulness, and transformation flows.

"When?": Expressing stakeholders' needs at every life cycle step

By analyzing the company life cycle, from its creation to its end, we note that their stakeholders and the performances they require from the company do change significantly.

For example (not exhaustive):

- At the company creation:
  - Materialize the project of the will-be entrepreneur: an idea, a specific skill to implement, a lust for autonomy…;
  - Multiply the finance 'bet' with high risk by initial investors on the will-be entrepreneur project; ...
- When activity starts:
  - Develop the company products market and/or market share; ...

• At stabilized regime:

Long term:
- Secure investors return-on-investment;
- Develop future offers for potential clients with potential customers;
- Secure future capability from potential suppliers; ...

Mid term:
- Secure availability of required skills;
- Improve products price competitiveness with current suppliers;
- Adapt production tools and processes to required improvements for products performances and costs;
- Develop products visibility for the potential clients; ...

Short term:
- Secure current clients' satisfaction with quality, delays and costs compliant with the promises made;
- Manufacture required products from current suppliers offers and employees skills;
- Manage financial flows from clients to suppliers and employees;
- Manage natural, human and political hazards; ...

End of life:
- Secure transmission of accumulated capitals (financial, physical, employees skills, clients and suppliers relationship); ...

Ressources: what for ?

Value = perceived utility(ies) / perceived costs

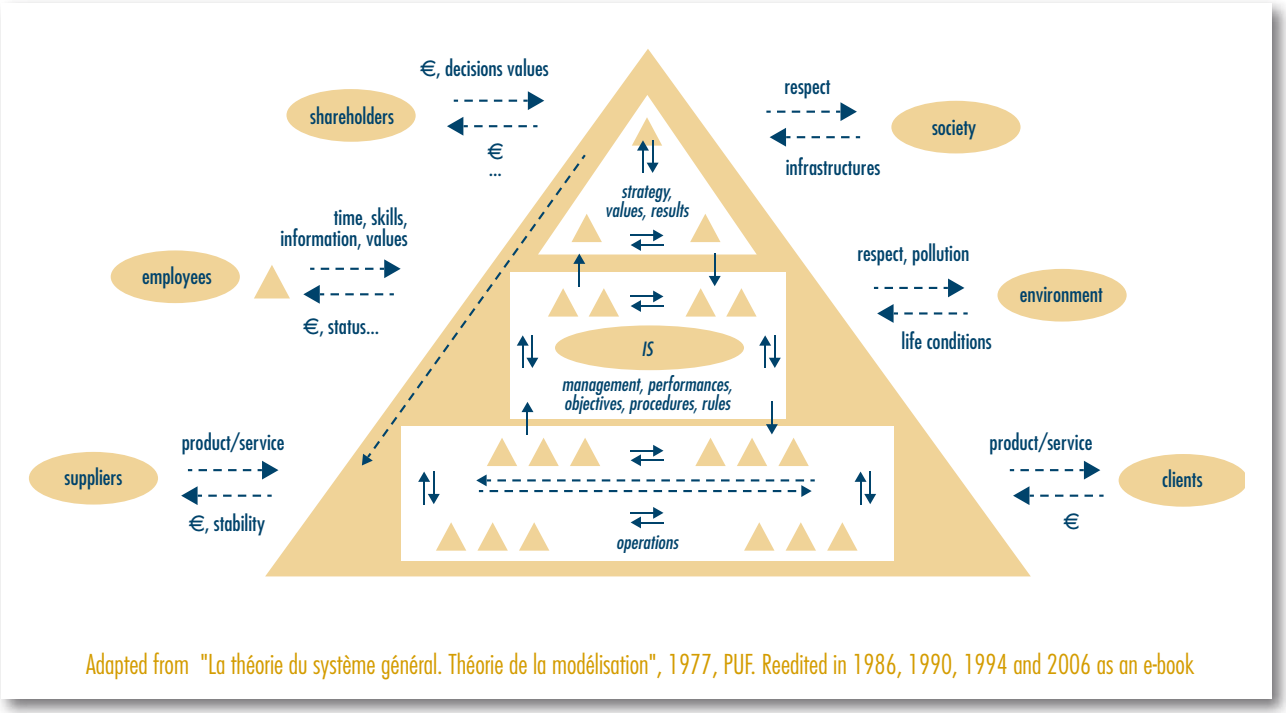
The company not only has to answer to different requirements for its stakeholders, but also has to reply in a way they perceive as positive value in their exchanges with the company: each should believe they get more than they give! A client will obtain a product/service which he perceives as more useful than the price and the time it costs him to have made/done. In the same exchange, the company has to find more usefulness in the finances received than in the goods/services delivered!

In the same way, due to the dissymmetry of their situations, each exchange between the company and its stakeholders has to create value: each one receives more than they give. Each company definitely is creating value(s).

Of course, the company will be looking to maximize this value creation, either by improving the perceived usefulness for stakeholders or reducing their costs, linked to the resources implemented to transform the concerned flows.

Relations between system components

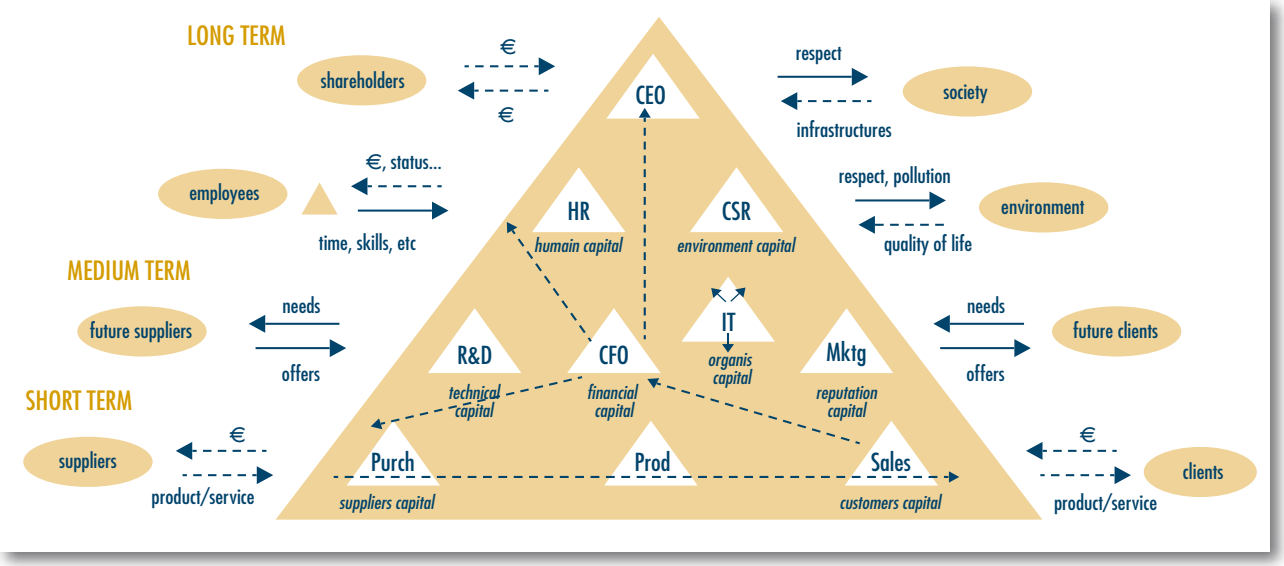
It is possible to use this same 'system' to model the participation of a company's components on each flow, by visualizing which services and actors manage those flows:



Adapted from "La théorie du système général. Théorie de la modélisation", 1977, PUF. Reedited in 1986, 1990, 1994 and 2006 as an e-book

This system modeling enables formalizing the process implemented by a company to manage each of the flows generated by and for its stakeholders. Those flows are managed by sequences of operations that most often encounter different 'functions' in the company.

The interfaces between functions can generate a risk of lower performance. This modeling shows the interest in managing those trans functional processes globally, from stakeholders upstream (eg suppliers) to others stakeholders downstream (eg clients): a 'management by processes' to be piloted with KPIs defined with the relevant stakeholders.



The different "functions' in the company specialize in "creating value' for their own internal and external stakeholders:

- In the short term, Purchasing manages material and subcontracting flows from Current Suppliers towards employees and production, as well as capital flowing from Finance (coming from Current Clients) towards Current Suppliers; In the medium term, they manage information flows between RD (needs) and Potential suppliers (offers), and Finance (improved costs and cash…); In the long term, they manage information flows between Potential Suppliers and CSR (respect of environment and society) and Direction (partnerships, make or buy…), while improving the "suppliers' capital";
- IT manages collection, security, treatment and availability of information between the company functions and external stakeholders, while contributing to increasing its "organizational capital"; ...

We'll present later how to use the same "modeling system" approach to improve the processes themselves, and how to "zoom" on smaller company parts - business units, functions, services - to optimize their local performance while contributing to the global company value creation.

Let us take note that each of the flows managed and transformed by the company between stakeholders leads to an accumulation that constitutes a form of "capital', ensuring long term competitiveness for the company, therefore they should be closely managed:

- The financial capital is the stock of money accumulated by the company, from investors' initial inputs and regular clients' payments, before it is used to pay suppliers and employees or to reimburse investors. Part of this capital is necessary to cope with the dis-synchronization between clients' inputs and suppliers' outputs, as well as possible hazards in future operations and reinvestment in required skills and tools. The accumulated surplus profit is often considered as the company's priority and is the object of all managers' attention.
- The physical capital made of tools, building etc. is also considered a priority, but its financial measurement often gives a limited vision of its real usefulness: it should also be measured in terms of obsolescence.
- Skills accumulated by employees may also be considered as a human capital (or resources or, even better, wealth), for which the advantages should be related to the current and future needs of the company, and of its stakeholders: the employees. Many companies have suffered by not managing the loss of skills linked to retirement or dismissals, even at very operational levels. Employees' wellbeing is increasingly recognized as a source of engagement and productivity, therefore competitiveness.
- Other information flows also create immaterial capital which should later be useful to the company and its stakeholders: current and potential clients' information is today the subject of careful consideration; the quality of relations with strategic suppliers has recently been pointed out as strategic importance by Prof. John Henke[5].
- Even the environmental capital and the reputation capital of a company (and its brands) appear decisive for a company's future.

It may be difficult to measure the different capitals in economic or financial terms, but it is relatively easy to measure each of them in its own terms, by indicators relative to the flow they manage, according to the levels where they are considered useful by the relevant company stakeholders: turnover and employability of/for employees, quality of relations, participation to innovation and stability of/for suppliers…

This model can be used to redefine any organization's strategy, to build a new business model, target new potential markets, design synergies across the value chain.

"Change what" to improve a company?

Creating value(s) for each stakeholder

The "system" vision of the company and its components permits (re)defining its strategy to "generate which value for

which stakeholders'!
Some may be prioritized by certain categories of firms: shareholders for the stock market corporations, employees for a social enterprise.
But none of them can be neglected in the long term! Exploring their respective needs has to be carried out by listening to their own values.
The company results will then be measured with indicators for stakeholder needs satisfaction from their exchanges with the company: not all of the latter need to be finance-driven, eg. employees' wellbeing, suppliers engagement…

Creating value(s) by useful transformation flows

The company can be modelled as a set of processes transforming upstream stakeholders' inputs (suppliers' goods, employees work, shareholders money…) into downstream stakeholders outputs (clients services, employees salary, suppliers money…).

Those material, financial, information flows can be optimized by avoiding to spend resources that do not contribute to downstream stakeholders' satisfaction.

Manage short, medium and long term processes separately

Stakeholders have different horizons for their needs: e.g. shareholders want dividends in the long term compared to suppliers and employees.
Thus each function in the company has to manage different processes with different skills:

- Short term = Operations: create value for customers
  - Manage material, energy, subcontracting etc. flows from suppliers, transformed by employees into products/services;
  - Manage money flow from customers towards employees, suppliers;
  - Target short term stakeholders performance: suppliers' compliance with Quality, Delays and Costs; customers QCD satisfaction;
  - Functions involved: procurement > manufacturing > sales > supply chain > invoicing;
- Medium term = Management: adapt Operations contribution to current stakeholders satisfaction
  - Manage information flows about satisfaction and evolutions of current stakeholders needs;
  - Target medium term performance: react to QCD failures and improve value creation for current company stakeholders;
  - Functions involved: purchasing > quality > operational marketing > operational HR > supply chain > accounting;
- Long term = Strategy: adapt to future stakeholders and needs evolutions
  - Manage information flows about long term evolutions and environment of current company stakeholders, e.g. stakeholders' own stakeholders (competitors, other value chain actors) or future potential stakeholders (market segments not yet targeted, potential suppliers)
  - Target long term performance: improve value proposition on QCD, react to stakeholders risks, target new stakeholders and needs;
  - Involved functions: upstream purchasing > R&D > engineering strategic marketing > finance;

Other applications

This system/value(s) approach has been used to model and optimize industrial and information processes inside or across companies, to (re)design products and services for innovation and/or cost reduction, to improve marketing, purchasing, R&D, to adapt IT systems, to prepare for sustainability and CSR, and even for interpersonal relations and individual development.

The ebook "A quoi ça sert ?"[6] presents the application of Value(s) reasoning and system modelling to numerous topics, showing how it helps finding new areas for corporate performance:

- To help each decision maker to achieve more with less resources, at his own responsibility level, in coherence with the other corporate actors and functions and with the company's external stakeholders, by defining specific and common goals, using common sense to create value while respecting each other's values;
- To allow supporters of the most efficient performance improvement methods in each domain to understand how to work in synergy with specialists in other fields of corporate performance, and therefore contribute to more global performance in value creation.

E.g. the same questions and system modelling helps to answer the question of Value(s) creation in the following domains:
- A corporate entity or business units
- A functional domain: Purchasing
- An organizational / information process
- An industrial process
- A product
- A training budget
- A school's educational project
- Time management
- Life…

More than 100 methods already applied for corporate performance improvement use this system/value approach.
Details available in the book "Valeur(s) & Management", "à quoi ça sert ?" and the blog http://valeursetmanagement.com/

(1) "Valeur(s) et management: des méthodes pour plus de valeur(s) dans le management" O. de Hemmer Gudme and H. Poissonnier, EMS Editions, 2013
(2) "General Systems Theory", Ludwig von Bertalanffy I Main Currents in Modern Thought, 11, 75–83, 1955.
(3) "La théorie du système général. Théorie de la modélisation", 1977, PUF. reprinted in 1986, 1990, 1994 and 2006 as a free e-book
(4) Freeman, R. Edward (1984). Strategic Management: A stakeholder approach. Boston: Pitman. ISBN 0-273-01913-9.
(5) See source at Mediation. (6) Only in French for the moment.

NEW WINE OR NEW BOTTLES?

WHAT PURCHASING AND SUPPLY CHAIN MANAGERS NEED TO KNOW ABOUT OPEN INNOVATION

By Richard Lamming, John Bessant, Anna Trifilova

JOURNAL OF SUPPLY EXCELLENCE

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A great deal of the talk surrounding the future of Purchasing and Supply Management and Supply Chain Management (PSM) in the past decade has centred on the concept of innovation.

Broadly put, innovation - in products and processes - is seen as the great hope for solving the problems of the human race, the planet, and the other species with which we share our natural environment.

This is to be welcomed because innovation, when taken seriously, challenges our ways of thinking, norms, values and assumptions: surely the factors that have led to the present precarious situation.

The great thinker, Joseph Schumpeter called it 'creative destruction' and this is true today: innovation is about destroying the old to usher in the new. Someone usually gets hurt.

The difficulty for managers in PSM and SCM is that innovation has never been seen (by them or by others) as part of their responsibility or domain. It has always been the realm of engineers, scientists and entrepreneurs. Few such people tend to end up in Purchasing or Logistics departments.

There is therefore a significant job to do in convincing others that PSM has a role to play in innovation.

One factor that should help is the emergence of Open Innovation - the idea that a problem shared is a problem likely to get solved sooner.

Open Innovation is a no brainer for PSM; people who work in the supply market, upstream-facing functions of an organisation are constantly in touch with hundreds of potential solution providers, all keen to help (if not altruistically).

In this paper, intended for PSM managers and strategists, we seek to provide some valuable knowledge upon which actions can be taken to bring PSM and innovation closer together.

Some of this is reported from extensive, ground-breaking research. Some is from some challenging conceptual propositions that might be operationalised straight into a supply strategy.

The provenance: where has Open Innovation come from?

Open innovation (OI) is not new. Innovation studies dating back to the early twentieth century highlight the importance of connectivity and case examples from earlier centuries support this view.

Innovation has always been a multi-player game and its effectiveness depends on building and managing links between people and across organizations.

For example, Carter and Williams pioneering study of 'technically progressive' firms in the UK back in the 1950s

identified that the degree of 'cosmopolitan' orientation (as opposed to 'parochial') was a significant determinant of innovation success. In other words, those organizations with rich networks of connections were more likely to be successful innovators (Carter & Williams, 1957).

This theme emerged in the many major studies of innovation throughout the 1960s and 1970s - for example Project SAPPHO stressed linkages as a critical factor whilst the Manchester 'Wealth from knowledge' research provided extensive case examples of award-wining innovators who shared a common external orientation (Langrish, 1972; Rothwell, 1977).

Innovation researchers have been working for some time on the theoretical development of models which recognize the shifting boundaries and the engagement of an increasingly diverse number of players, these include:

- Distributed innovation processes (Howells et al., 2003);
- Innovation systems (Lundvall, 1990; Metcalfe & Miles, 1999);
- User led innovation (Von Hippel, 2005; Piller 2006);
- Globalization (Santos et al., 2004);
- High involvement innovation (Boer et al., 1999; Schroeder & Robinson, 2004; Bessant, 2003);
- Complex product systems (Gann & Salter, 2000; Davies & Hobday, 2005);
- 'Recombinant innovation' (Hargadon, 2003);
- Communities of practice (Wenger, 1999; Brown & Duguid, 2001);
- Clusters and innovation (Best, 2001).

So in that sense, OI is not new. But Chesbrough's labelling in 2003 drew our attention to aspects of the challenge which are novel (Chesbrough 2003).

Innovation can be defined as creating value from knowledge and whilst the problem remains the same the context in which that transformation takes place has altered dramatically over the past fifteen years.

Multiple trends have accelerated and converged to create a fundamentally different innovation environment which can be characterised as 'knowledge rich' in terms of the range and volume of potential trigger signals for innovation. Table 1 gives some examples:

Table 1: Changing context for innovation management (based on Bessant & Venables, 2008)

CONTEXT CHANGE	INDICATIVE EXAMPLES
Acceleration of knowledge production	*OECD estimates that $1600bn is spent each year (public and private sector) in creating new knowledge – and hence extending the frontier along which breakthrough' technological developments may happen.*
Global distribution of knowledge production	*Knowledge production is increasingly involving new players especially in emerging market fields so the need for search routines to cover a much wider search space increases.*
Market fragmentation	*Globalization has massively increased the range of markets and segments– putting pressure on search routines to cover much more territory, often far from 'traditional' experiences – such as the 'bottom of the pyramid' conditions in many emerging markets (Prahalad, 2006) or "the long tail" (Anderson, 2006).*
Market virtualization	*Increasing use of internet as marketing channel means different approaches need to be developed. At the same time emergence of large-scale social networks in cyberspace opens significant new possibilities in market research approaches such as netnography (Bartl, 2007).*
Rise of active users	*Although user-active innovation is not a new concept there has been an acceleration in the ways in which this is now taking place (Von Hippel, 2005). NESTA estimate that user innovation accounts for a significant percentage of both product and process change in the UK, for example (NESTA, 2010).*
Development of technological and social infrastructure	*Increasing linkages enabled by information and communications technologies around the internet and broadband have enabled and reinforced alternative social networking possibilities. At the same time the increasing availability of simulation and prototyping tools have reduced the separation between users and producers (Schrage, 2000; Dodgson et al., 2005).*

Such experiments involve considerable modification of innovation routines, experimenting with new approaches whilst also letting go of others which are no longer appropriate for the emerging conditions.

Examples include making extensive use of web-based approaches, exploring the role of social networking and user communities, mobilizing R&D from outside the firm, etc. (West et al., 2006; Berger, Möslein et al., 2005; Bessant and Von Stamm, 2007; Reichwald, Moeslein et al., 2007; Bessant, Von Stamm et al., 2009; Bessant, Von Stamm et al. 2009).

Characteristic of this environment is a shift from knowledge production and ownership to knowledge flow as the key element in innovation management.

Chesbrough's original work was driven by concerns about R&D productivity and the fact that in many organizations knowledge produced wasn't always deployed.

Since other organizations faced a similar challenge there was a logic towards opening up innovation processes to allow for inflow and outflow of knowledge; as Bill Joy of Sun Microsystems memorably put it, in a knowledge rich world like this, even the largest organization has to recognise that ' not all the smart guys work for us'.

Chesbrough's seminal article was a touchstone for what had already become a strategic challenge for many organizations.

Procter and Gamble, one of the most famous and documented cases of shifting to open innovation, began experimenting with its 'Connect and Develop' approach in the late 1990s and their CEO Alan Lafley catalysed the process with a simple clear strategic direction.

In the future under Connect and Develop, P&G would get 50% of its innovations form outside.

A clear statement but one which fundamentally challenged the organization to experiment with new ways of achieving this goal – a journey which continues but which has been helpfully documented along the way (Huston and Sakkab, 2006; Lafley and Charan, 2008).

So, it sems the development of OI has run parallel with the move towards new models of interorganisational relationships in supply chains.

In a recent poll (Procurement Leaders 2013) 97% of Chief Procurement Officers said they believed that Procurement could significantly influence innovation although there was a wide divergence in views on how this could be done.

To address this, we turn to some of the concepts relating to initiating, developing and exploiting innovation – and how they may be helpful in PSM.

The need for 'innovation model innovation'

Much is made in the innovation literature of the need for dynamic capability, referring to the organizations ability to reconfigure its core routines and processes in the face of a shifting environment (Teece and Pisano, 1994).

This pattern of questioning and changing innovation management routines is a continuous one but over time we can see distinct shifts in the underlying framework within which routines are located. In his pioneering work on innovation management, Rothwell drew attention to models of innovation which policy agents and practitioners make use of - how they think the innovation process works - and the limitations of these (Rothwell, 1994).

Such mental models are important because they shape what decision-makers pay attention to, what they commit resources to and how they manage the process.

He suggested five generations, of thinking about innovation management, moving from simplistic linear 'push' or 'pull' models, through increasingly sophisticated 'coupling' models which recognize the need for intra and inter-organizational links, predicting a fifth generation which would involve extensive use of ICT, rich and diverse networking, and globally distributed activity.

Within such a highly networked, multi-actor environment the emergent properties of the innovation system are likely to require different approaches.

Whilst he sadly did not live to see the emergence of the Internet his speculation provides us with a pretty good sketch map of the territory organizations now have to negotiate. In particular the locus of attention has moved from the lone inventor to the organization and is now increasingly at the inter-organizational network level.

Perez and Freeman talk about major shifts in thinking around innovation in terms of what they call 'techno-economic paradigms' - the interplay of social and technological forces - and we can use this lens to explore the new opportunities opened up and the challenges posed to our innovation models in exploiting them (Freeman and Perez, 1989).

In the following section we will briefly discuss those trends before moving to a discussion of key challenges.

Converging trends

Without question the emergence of the Internet and the accompanying set of technologies for information and communication has reshaped the innovation landscape.

Moeslein and others have characterised this rich new set of opportunities in terms of a powerful toolkit with five

major 'compartments':
- Innovation contests;
- Innovation markets;
- Innovation communities;
- Innovation toolkits;
- Innovation technologies.

Each of these has been extensively elaborated over the past fifteen years but they have antecedents in a pre-digital world; their proliferation and conver-gence is what has opened a rich seam of innovation opportunity (Bessant and Moeslein, 2011).

Organizations now have at their disposal the possibility to source many inputs to their innovation process from a wide variety of players - internal employees, external users, other firms, research institutes, etc. across platforms which permit rapid and scalable activity.

For example the idea of innovation contests is not new; the development of a reliable portable chronometer for naval navigation emerged as a result of such a competition in the UK in the early 18th century[1] and a French competition in 1869 to find a substitute for butter led to the invention of margarine (Bessant and Moeslein, 2011).

But the costs and scale of organization at that time made this a complex and significant undertaking; by contrast it is now possible to set up and run innovation contests rapidly and frequently using well-established and proven software platforms and supporting organizational routines (Bullinger, Neyer et al., 2010).

Similarly the principle of collaborative research in which perspectives are shared is not new; James Watt developed his steam engine designs with extensive reference to earlier work by Newcomen and others.

But once again today's environment enables widespread 'broadcast search' to diverse players and a corresponding high variety of different perspectives on innovation problems (Lakhani and Jeppesen, 2007; Jeppesen and Lakhani, 2010).

For example the innovation marketplace at Innocentive.com has a population of around 250,000 regular solvers offering their input to a diverse range of challenges running across the platform.

In parallel with this has come a shift in social behaviour around increased connectivity. The scale is significant – Facebook would qualify as the world's 3rd largest country by population if its billion plus members were counted in a census.

And whilst some of the traffic is about sharing pictures of cats and wedding receptions, large tracts of the territory occupied by FB and innumerable other networking sites deal with knowledge sharing and management of relevance to innovation.

Interest groups and communities of practice can emerge and concentrate and represent a powerful resource - for example Bartl talks about the new tool of 'netnography' (Bartl et al., 2012).

User innovation, especially in the context of active communities has become a key feature of the innovation landscape.

Perhaps the most famous is Linux but many others have emerged - for example, patients and carers in the health sector, automobile enthusiasts collectively designing, building and selling cars and sports enthusiasts creating new industries around their ideas for new features and performance in their equipment (Bessant, Moeslein et al. 2012; Reichwald, Huff et al. 2013) / On the dark side the ability of criminals and terrorists to exploit this opportunity has been of growing concern (Rush, Smith et al. 2009)).

Another key point about innovation as a social process is the idea of recombinant innovation - borrowing and adapting ideas from one context to use in another (Hargadon, 2003). For example Ford's famous development of the assembly line (a key feature of his mass production model) made use of ideas originating in the meat packing industry in Chicago where the primary task was one of disassembly of animal carcasses.

Ford's team saw the potential in applying the principles of the moving line to their emergent design for building cars.

They had already drawn upon other ideas from outside - for example the repetitive fast cycle machinery idea came first form the food canning industry. In similar fashion Thomas Edison was able to draw on many examples of proven technology and reapply them in different fields; his 'invention factory' in New Jersey operated along principles of recombinant innovation.

This is an old tradition but it becomes enabled in a world where knowledge flows allow for increased awareness. And it represents a powerful tool in the OI chest; for example, the Aravind Eye Care system developed in India has provided a safe and reliable way of delivering cataract surgery to millions of people who would normally be unable to afford such treatment.

Its origins lie in recombinant innovation, specifically transferring ideas from Ford's early car factories and in McDonalds fast food restaurants! (Bessant and Tidd, 2015)

Elsewhere we have termed the convergence of accelerating trends 'open collective innovation' (OCI) implying that the innovation process has - particularly through significant shifts in both the technological and social context - begun to evolve into a Rothwell-type of new, 5th generation, model (Bessant and Moeslein, 2011).

It is characterised not only by increased activity within those streams but also by emergent properties as they converge. Table 2 gives some examples.

Table 2: Emergent properties associated with 'Open collective innovation'

EMERGENT PROPERTY – RESULTING FROM OCI CONVERGENCE	EXAMPLES
Lowering of entry barriers – widespread cheap communications allows democratisation of innovation, bringing many more players into the innovation game.	*Innovation contests – fast and easy to set up, low cost so available to anyone wishing to host one, robust platforms on which specific contests can be configured, high reach in terms of volume and variety of contributors.*
Increasing reach – OCI enfranchises many more people, giving them access to the process of innovation and the tools to enable it.	*People at the base of the pyramid – the five billion on very low incomes who have traditionally been excluded – are now able to access goods and services and use OCI tools to co-create solutions for their needs. Mobile access to internet allows distributed local solutions and access to global networks.*
Increasing involvement - it is quick to build communities around key themes and if these achieve critical mass there is a degree of long-term sustainability.	*Collaborative communities like Linux, Apache, Propellerhead and Wikipedia provide powerful and continuing engines for innovation. Significantly, this community building is often driven by non-financial motives and enables extensive social enterprises and innovation.*
Increasing range of ideas – OCI spreads the net more widely and the resulting flexibility offers more different starting points for development of ideas and new insights and inspiration across different words – recombinant innovation.	*Cross-sector learning opportunities such as using manufacturing concepts in healthcare or 'servitization' of product businesses*
Co-creation with users takes the user-led mode further, because it is now cost-effective to bring multiple users into the process. Extent of user-involvement is deepened – moving from cosmetic customisation to deep design involvement.	*User-input and co-creation - Lego working with children as designers, patients as a key source of healthcare innovation.*
Accelerating diffusion – innovation markets, communities and groupings are simple to establish and quickly reach a scale of connectivity with significant effects in terms of idea generation, idea development – and rapid viral spread across communities.	*Online communities can be quickly mobilised, for example, Facebook users enabled the website to be put into multiple languages in a period of weeks. ALNAP provides a networked community for fast sharing and diffusion of best practice in humanitarian emergency aid.*
Extending reach to previously uneconomic solutions – OCI facilities managing the long tail problem.	*Amazon with books, music, etc. New approaches to dealing with rare diseases by mobilising communities, etc.*

Challenges in exploiting the opportunities

The unfolding OI story is one of experimentation around ways of making this happen.

`For example, exploiting the opportunities offered by OCI require the ability to identify external knowledge, acquire it, absorb and finally deploy it – not a simple skill set.

Cohen and Levinthal termed it 'absorptive capacity' and Zahra and George helpfully developed the concept by highlighting that it involved multiple behaviours around translating potential' to realized absorptive capacity.

Specifically they suggested four key challenges around identifying potentially useful external knowledge, acquiring it, assimilating it and finally deploying it in ways which add value (Cohen and Levinthal, 1990; Zahra and George, 2002.).

Whilst OCI offers significant new routes to external knowledge it also requires a rethink of the underpinning innovation management routines to enable the development of absorptive capacity (Phelps, Adams et al. 2007).

A potentially useful start for building an innovation strategy into a supply strategy is provided by a paper by Lichtenthaler and Lichtenthaler (2009) - a conceptual framework that develops the ideas discussed above.

It is shown in Figure 1, with a development in everyday language provided in Figure 2.

Figure 1: A Model for Open Innovation Skills

	Knowledge exploration	Knowledge retention	Knowledge exploitation
Internal (Intra-firm)	*Inventive capacity*	*Transformative capacity*	*Innovative capacity*
External (Inter-firm)	*Absorptive capacity*	*Connective capacity*	*Desorptive capacity*

Lichtenthaler, U. and E. Lichtenthaler (2009) Journal of Management Studies

Figure: A Framework for Managerial Questions: How Good Are We At This?

	Knowledge exploration	Knowledge retention	Knowledge exploitation
Internal (Intra-firm)	*What do we know? How well do we think?*	*How well do we embed what we know?*	*How good are we at using our knowledge?*
External (inter-firm)	*How good are we at learning from others?*	*How good are we are making sense of things?*	*How good are we at sharing ideas with others?*

Adapted from: Lichtenthaler, U. and E. Lichtenthaler (2009) Journal of Management Studies

The first table shows a view of the organisation from within. The authors focus on the question: how good are you at generating ideas internally, keeping hold of them and them exploiting them? This neatly shows the difference between invention (having a good idea) and innovation (getting it to market - not necessarily successfully).

These are worthwhile questions for managers within an organisation to ask themselves; it is not difficult to imagine how this could be done.

Once the answers are known, action can be taken to correct shortfalls or gaps in the organisation's abilities.

Then the authors turn to the external environment. Here, in the PSM context, we may think of the supply base. They ask: how good are we at getting ideas from outside, at making sense of them within our organisation (or, indeed with and between suppliers), and then sharing ideas with others (suppliers)? For the last point they use the idea of 'desorption.' This is simply the opposite of absorption.

Another useful concept can be found in the field of recombinant innovation. As we mentioned earlier, recombinant innovation is a well-established phenomenon which offers a number of advantages as part of an open innovation strategy.

First it reduces learning costs since much of the original development of an innovation has been undertaken in a different context. While there is still need for local adaptation there is a chance to adopt an innovation further up the learning curve and thus with lower risk.

Second it offers an entry point to a different innovation trajectory, as the Aravind case demonstrates. By moving the search focus beyond an established trajectory there is scope for establishing a new underlying architecture for further innovation.

The model of safe low cost healthcare in India has been developed further, applying the approach to perinatal care, other elective surgery and even heart bypass operations - all with similarly dramatic results (Bessant, Rush et al. 2012).

But exploiting these opportunities requires building new capabilities; in particular we would highlight three - abstract-driven search, brokerage and cyclic adaptation.

Abstract-driven search

Recombinant innovation involves a search for potential solutions in fields far removed from the original context - 'getting out of the box'.

Since there are many alternative spaces to explore but limited resources with which to do so tools which support a focused search capability are of critical importance.

Abstract Driven Search (ADS) operates by abstracting the core principles of the solution being sought to a higher level and uses that definition to target search.

It draws extensively on theories of problem-solving by analogy and forms the basis for a number of practical methodologies including TRIZ (Hua, Yang et al. 2011).

To take an example, the problem of turnaround times in low cost flying is a critical determinant of productivity. Being able to land a plane, allow passengers to disembark, clean the plane, refuel, load new passengers and freight and take off in as short a time as possible is a key performance indicator.

Southwest Airlines still holds the record for this, regularly managing turnarounds in less than 20 minutes; its ability to do so results from recombinant innovation.

The above problem can be abstracted to a higher level and expressed as a need for moving from one state to a differently configured state as quickly as possible.

This opens up a number of places where similar problems at this level of abstraction are experienced - for example, machine changeovers in big car presses where the concern to reduce the set-up and changeover time led to engineers at Toyota under the direction of Shigeo Shingo developing the 'single minute exchange of die (SMED' system (Shingo 1983).

SMED enabled reductions from several hours down to

less than five minutes; it was an extended learning process over several years but the resulting principles can and have been widely applied - in airline turnarounds but also in Formula 1 pit stops, hospital operating theatres and facilities management.

Developing ADS is a key requirement not only for enabling search but also for permitting a level of knowledge exchange across innovation markets and other 'broadcast search' platforms (Jeppesen and Lakhani, 2010).

The risk in too open an exchange is that organizations inadvertently signal their intentions and activities to others and risk compromising their intellectual property.

With ADS the requirements (or offer) can be made in abstract terms which are sufficient to align and link parties in early discussions without IP disclosure.

Analysis of 'challenges' posted on marketplaces like Innocentive.com suggest that organizations re increasingly developing capabilities in framing their search in ADS terms.

Brokerage

A second key element in the recombinant innovation process is brokerage which involves finding ways to bridge across to other worlds - making direct connections, translating between the two environments, managing a discussion which moves from generic to specific (Burt, 2005).

It requires agency in network building across two separate worlds and an awareness of the fit between needs and means - a role which Allen termed that of the 'technological gatekeeper' (Allen, 1977).

Hargadon reports on the role design consultancies can play in bringing solutions from different contexts to bear on new problem areas - a process akin to pollination by bees (Hargadon and Sutton, 1997).

The open innovation toolkit provides a number of online mechanisms for partner search and enabling connections but these often lack the matchmaking role and lack understanding of context.

By contrast third party organizations have begun to specialise in such brokerage, offering secure environments in which organizations can come together and explore potential connections.

Effective brokerage for recombinant innovation requires (a) the availability of rich and varied networks to generate potential partner signals, (b) the use of ADS to recognise analogous situations and (c) the ability to engage potential recipients in exploring outside of their 'normal' search space.

In terms of absorptive capacity this stage corresponds to 'acquisition' and a key element is the support of such acquisition by intermediary brokers or mechanisms.

Cyclic adaptation

As the final step in RI significant adaptation may be needed to turn the principles from one world into practices in another, and involves a series of prototyping cycles, configuring to local circumstances. It can be seen as the reverse of the ADS process moving from a high level of abstraction to particular application in a specific operating environment.

The Aravind case outlined earlier did not simply adopt a 'plug and play' solution from fast food but rather had to work at extracting key principles and devising experiments to test and elaborate them for use in a hospital setting.

Such learning is a form of translation activity in which high-level concepts are deployed in experimental designs which converge on a viable and appropriate solution.

As in the 'lean start-up' approach the core idea (a 'minimum viable product') may need to go through several iterations and refinements, pivoting around the central principles before a suitable configuration for the new context emerges (Ries, 2011).

Implications for purchasing and supply

Much of the traditional economics literature suggests that competition will encourage innovation in markets and that all customers have to do is watch it emerge and make choices. This rings true in consumer markets.

However, if an industrial customer wants to encourage innovation in suppliers, some degree of openness and shared destiny is required, such as that included in most models of collaborative relationships in supply chains.

Long-term relationships have natural platforms for collaborative innovation but radical ideas may only spring from potential suppliers with nothing to lose.

It may be necessary to be 'ambidextrous' - to deal with long-term suppliers and also seek new relationships: a concept we have described elsewhere as 'strategic dalliance' (Phillips, Lamming et al. 2006).

The key skill set needed for PSM to embrace and benefit from open innovation is clearly that of managing the external interface and enabling smooth flow of key resource to the enterprise. This is the established role of PSM; extending it to cover innovation requires the application of some well established concepts.

Developed into formal pieces of a supply strategy, these concepts and tools may just provide the path PSM needs towards a responsibility for innovation

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(1) The 1714 Longitude Act offered a prize of £20,000 (worth around £2.8million today) to anyone who could develop a reliable device to solve a long-standing problem in navigation.

A NEW OPTION TO DESIGN A SOURCING MANAGEMENT TEAM

By Bernard Arrateig

JOURNAL OF SUPPLY EXCELLENCE

Bernard Arrateig *is an expert in elaborating vision for the sourcing function and in crafting and delivering category strategies. He is a strong believer that purchasing should be positioned as a recognized contributor to the company strategy. He has developed a strong experience in leadership and breakthrough project management at UPM and in other context. He now shares his experience as a trainer for EIPM and for INSA Rouen and as a lecturer for a variety of conferences.*

Is the current structure of a purchasing management team the single possible option? Are regional, direct or indirect the only determinants of a sourcing management team organisation? How to create new possibilities? Where can we find inspirational direction? At the end of the day, we are looking for a team which will drive the sourcing strategy towards a better integration into the business while offering more opportunities to its crew members to bring new motivation sources.

The current situation

It's quite easy to come up with a caricature portrayal of the different sourcing management team organisations: it's all about purchasing segments.

The goal of this article is to bring new perspectives to the sourcing organisation and discuss innovative means to organise the sourcing department by building a parallel with a business frame.

The first drawback regarding the current organisation model is the silo effect generated by this design, as the synergies between direct and indirect are minimal. Typically, during a sourcing management team meeting, the silo effect is fully on: show-offs towards the CPO, some heavy laptop typing and a lot of mobile texting. Today, many sourcing management teams are less of a team and more of a working group.

The second drawback coming from this standard structure is the lack of perspective for the purchasing people. Of course, there's the typical career path from buyer to CPO, through expert buyer or category buyer. But this development is still within the purchasing process. Some buyers could feel their tasks are always the same. Their skill set is pretty narrow: buying. The alternative to grow, then, would be to either leave the department or, even worse, the company. Job rotation is of course a great thing for company talent management, but talent leakage is something to prevent from happening.

The last drawback, which could also be the consequence of the traditional structure of a purchasing department, is that sourcing remains a non-recognised partner for the business.

Having buyers focusing on RFQ and negotiation leaves the stakeholder relationship quite often neglected. With such a pattern, the role of purchasing is not yet to be changed towards being a business value creation actor.

How to modify this pattern without touching the logic of supply market expertise and the coherence towards stakeholders?

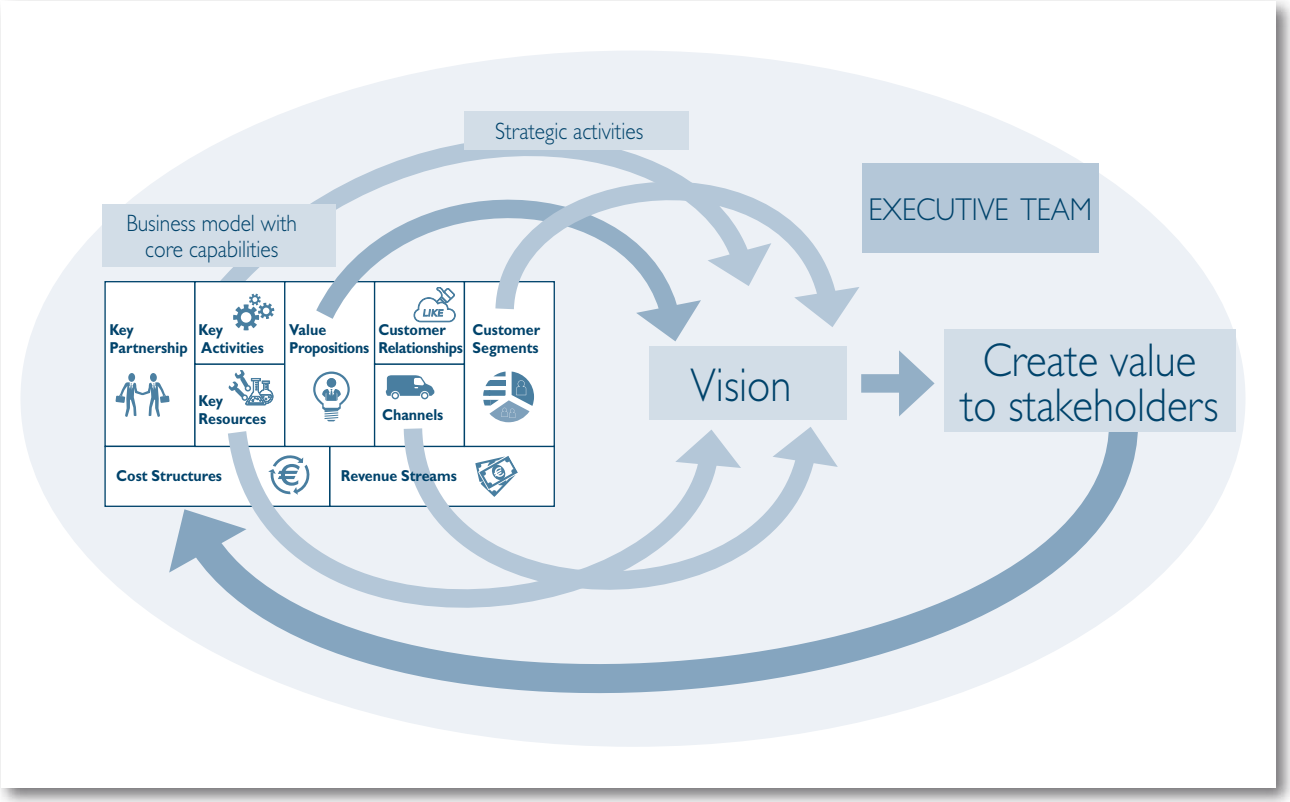
This modification should address the silo effect, the employee's skill set and their contribution to business value creation.

The business frame as an inspirational change

How about actually taking inspiration from the way a business is built to copy and paste its attributes?

Sourcing is indeed a service provider. To become a solution provider it should shift the current way of working towards a business frame.

The executive team will be responsible to develop and coordinate the activities to ensure that the business frame will deliver the desired value to the stakeholders.



The Business frame

The business mission, amongst few variants, is to create value to its stakeholders: the shareholders, the clients, the employees, the community and the suppliers (this last group being quite often, if not always, forgotten).

The business model is the sum of a company's capabilities to fulfil its mission - create value for its stakeholders. For this article, we'll focus on Alexander Osterwalder's business model "9 building blocks canvas".

The vision is the ultimate stage the company wants to reach with its business model.

The vision should also inspire the stakeholders, to give them confidence to put their resources into the company and thus fuel the business model.

The executive team

A team usually is formed to execute the strategy, monitor its progress, lead the change and, of course, be liable for the company's final goals.

The success factors of an efficient team are numerous, but let's focus on the six essential ones, using sport as an analogy.

The first factor of a successful team is **the interdependency among the team members**. In football, a player must recover the ball from the opponents and pass it to a teammate who is better located to score the goal.

If you don't rely on your teammates to achieve your goals, the silo effect is on – and, therefore, this interaction is more a sum of competences than a synergy of competences.

The second factor is to **have a mutual goal.** Of course a common understanding of this goal is requested but this is actually quite easy to put in place - even working groups have a mutual goal.

The most popular is "sourcing savings", which is the sum of the savings generated by the purchasing branches. But, as mentioned earlier, each branch – as, for example, the "direct materials" – doesn't need the others to achieve its own targets.

The third determinant of a great team resides in **its leadership**. Leadership starts with oneself and the ability to see others as an asset to the group instead of competitors. Quite often leaders believe that all ideas and vision should come from them, but other teammates can be a source of opportunities if you make yourself available to listen to them.

Together, it's possible to draw the future of the organisation, develop the key capabilities to make it happen, innovate constantly to renew each single piece of the processes and, last but not least, focus on people's mind-set and aspirations within the organisation.

A good leader will trigger the fourth success factor: **team member motivation**. Contribution, ownership and individual growth are the main pillars of people motivation.

The leader should be able to see the team members as responsible people, clever enough to fulfil their mission and engaged to the company.

The next enabler to a successful team's performance concerns its own **dynamics.** And, here, diversity plays a key role.

Creativity comes from diversity. Even though it may make things more difficult to manage and conflicts are inevitable, you should cherish this profusion of ideas. Expertise comes from everywhere so a leader should be able to grab it wherever it is.

A team must be constituted of experts in different fields to ensure excellence at every level. Objectivity and rationality should be the drivers of the decision making process.

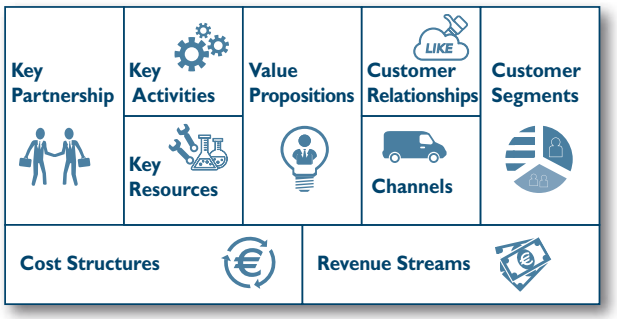
The last point which is linked with the business value creation is **the interfaces** with all its stakeholders.

It is imperative to communicate efficiently with them, doing so in a structured manner with tailor-made reports and goals to track down their views

Purchasing function as a solution provider

The foundation of the business frame is the business model. We'll use the "9 building blocks canvas" from Alexander Osterwalder to set up the structure that a sourcing department could make use of to draw its own model of executive team.

The model describes the "9" activities a company needs to master in order to deliver value to its stakeholders (see image).



The game is to make use of this business model and apply it to the sourcing function, considering purchasing as a business or, better yet, as a solution provider.

This assumption opens up the door of seeing processes and activities from a completely different angle and this new perspective should lead towards the design of a genuine sourcing team to execute the sourcing strategy.

How does this model work?

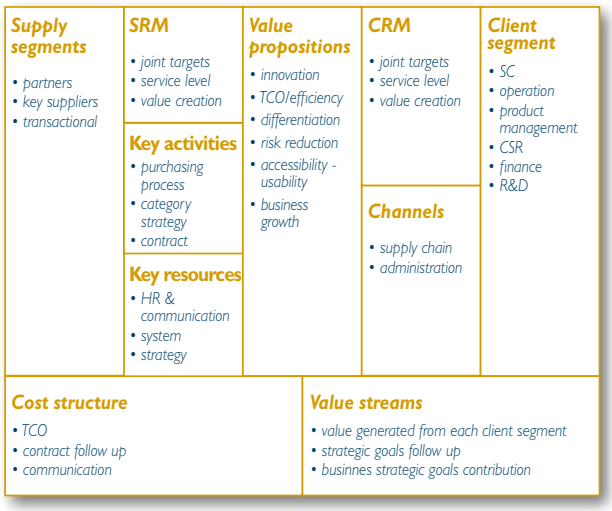
Let's start reading the model from the right hand side.

The customer segment of the "9 blocks" canvas, switched to the sourcing function, becomes the internal client segment, covering operations, sales, R&D, supply chain and so on.

According to this business model, the next block covers the **relationship with the internal clients**. This relationship should be based on three main pillars; First, the joint target, which translates the commitment of both sides to make things move forward. The second pillar is the service mind-set that has to be embedded within each team member as way of relating with the internal client. Finally, as the third pillar, the objective of creating value for the company should be the compass of the joint efforts.

The **value proposition** block is certainly among the most critical, as the value proposition comes from many streams. The Total Cost of Ownership (TCO) is obviously on the top of the list but innovation, differentiation, risk management, corporate responsibility, business growth and ensuring availability or usability of goods must be part of the list too. Everything that can support financial multiples of the company will be welcomed as well.

In order to demonstrate the value creation, special attention should be given to the financial reporting. **This financial competence** supports the purchasing business when showing its stakeholders the undebatable value created and the progress tracking of the strategic activities. This high demand for value creation records brings credibility to the procurement team and eases the cooperation with internal clients. Many top sourcing organisations have already integrated a business controller into their team.



Still moving towards the left hand side, it's possible to draft a new block, the **Supplier Relationship Management (SRM)**. As its counterpart for customer relationship, the SRM bases its interface with the suppliers on joint targets, service level agreements (SLA) and value creation. Joint targets are displayed in a common agreed business plan

fed by innovation workshops. The service level is the foundation of the internal client service level. The value creation, as described earlier, falls within the financial box - therefore focusing on grabbing the genuine value released by the cooperation with the suppliers.

This new SRM box actually reflects one of the previous observations regarding the company's stakeholders: as previously mentioned, the suppliers are not, in most cases, part of the "official" stakeholders list of companies. This might be the reason why this 10th box is absent.

Continuing this scheme, the **key activities** become "purchasing process", which is the sourcing operation, the production line. Whatever it has bought, the purchasing backbone is the same. Instead of segmenting it in direct and indirect, it's better to face it like any operation and continuously improve each step of the process.

It doesn't mean that the buyer in charge of a category won't be a specialist of its supply market.

Ultimately, the buyer will be appointed to a sourcing category that will be either direct or indirect and that the execution level will be defined mainly by its supply market scope.

Most of the time, however, this buying process is displayed in ISO 9000 procedures, so teams are forced to comply with this discipline. So, in reality, we are far from the "lean management" spirit that we try to sell to some of our suppliers when "developing" them.

Therefore, identifying the purchasing process as a production line helps buyers to pursue excellence. This is a win- win situation. Buyers see their job as an evolving activity where proactiveness supports the purchasing business growth – and all sourcing function stakeholders benefit from this quest for better performance.

The **key resources** block is more popular in the purchasing department. It is called "sourcing development" or "excellence centre". The goal is to manage human resources, guarantee tools' development, drive the strategic process and build a communication plan as a true media for sourcing strategy execution.

As any business organisation, **the channels** management will be liable for our tangible deliverables. The term "channels" gives an end-to-end picture of the materials and services flows. It gives the image of a bridge between the supply market and the final customer.

An essential part of this block is the procurement administration. Who could be better positioned than them to streamline non added value administrative tasks?

Currently, this competence within the purchasing department is scattered among buyers and operations. Making this competence visible within sourcing should definitely consolidate the link with the internal client. Some key financial ratio, like working capital, should be addressed there.

Break the pattern

Those blocks define new roles and responsibilities within the sourcing management team.

As a first step, let's describe the job content of each of those new roles.

As a second step, we'll go through a couple of examples on how the n-1 level could be organised.

In order to emphasize the value creation along the whole process, **the value chain competence** will play an essential role. The person in charge of this competence will aggregate the tasks of "internal customer relationship", "value proposition" and "SRM". His/her role will be to define the value proposal to the internal customers and suppliers, and ensure the coherence between them and the delivery.

The key activity competence, or the purchasing process competence, will gather the buyers and pave the way towards excellence. The purchasing process is similar whatever the category is – obviously, the effort on each step will be determined by the nature of the category and its supply market.

The key point is the market understanding, which brings the main added value of a buyer. The head of this activity will have to be in search of excellence for every single step and to attribute to each buyer a category determined by its supply market and the demand owner.

The resource competence will guarantee that the whole team has at its disposal the most efficient tools. The strategy and its communication will be the third liability of the person in charge of this competence.

The person responsible for **the channels** will build the bridge between the supply market and the business, designing where it is possible to have a genuine end-to-end supply chain. One key element of the bridge will be the procurement administration: when to place the order, supervise the supply chain with all possible stocks and ensure the reception is well mastered.

The financial person, as usual, will control the cost and record the value created. He/she will allow the purchasing business to demonstrate its added value to the company's financial multiples. Let's not forget the company Corporate Responsibility report, in which the sourcing function should have critical input.

What we can see now is a sum of roles and responsibilities interdependent from each other. The head of value chain sourcing will have to rely on either the performance of the buyers, the person in charge for channels or the financial people.

Each member of this team cannot achieve big things unless their colleagues perform well. This should create an emulation to contribute to the team and its mutual goal.

The n-1 level

To get an idea of results at n-1 level, let's first define which sourcing category could be under the sourcing management team supervision.

The image above represents one approach to select those sourcing categories. The ideal is to select categories that have a genuine impact either on the cost for the company or on its strategy.

Something interesting to add is the supply market area as a selection criteria. When the supply market area is large enough, like global or continental for example, it would be worth including those categories within the central supervision.

Since we now have the sourcing management structure and the sourcing categories that they could supervise, see how the n-1 level could look. Typically, a category will involve a Value Chain manager, a buyer (process) and a channels authority.

Conclusion

The purchasing segments are not the only options available for a purchasing department.

This standard model of sourcing executive teams does not address their two essentials goals: business integration and people motivation.

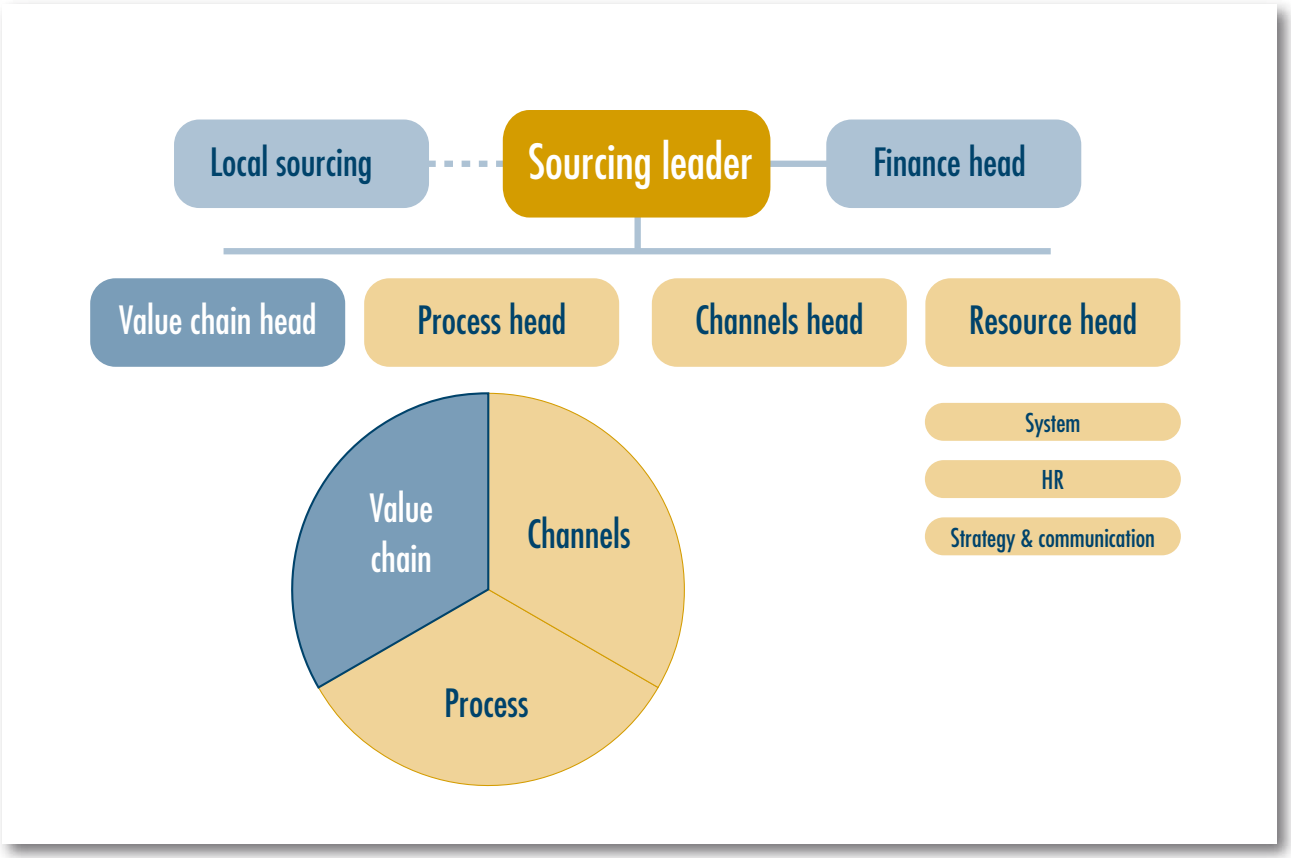
This article proposes a management team organisation pattern mirroring a business 9 blocks canvas: This pattern reshuffles the sourcing competences towards business-like competences.

The pattern brings interdependency among team members and, therefore, should improve support for the sourcing strategy execution.

The goal being to serve the business more efficiently and generate a source of motivation for its team members.

The wider skill set proposal within the sourcing department should play a role in attracting, developing and retaining talents. Sourcing will become as well a sort of talent nursery or academy for the whole group.

Having those two ingredients in place, the value creation likelihood will drastically increase



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