Low cost sourcing… or high cost supplying?

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Abstract:

Sourcing from low cost countries is today at the agenda of most manufacturing companies whatever their size or industry: for some of them, it is in place already while others are seriously considering the project for the years to come. However, traditional strategic management theories of international management and multinational companies – mainly based on transaction costs and resource-based theoretical backgrounds- fail at fully explaining such trend. We therefore suggest alternative explanations, specifically related to organizational isomorphism. The first results of our empirical study (including a quantitative survey on a sample of 150 firms and a qualitative part with 20 in-depth interviews) on the impact of sourcing manufactured products from low cost countries –done in partnership with the consulting firm BearingPoint and Supply Chain Magazine in 2006- confirm these contradictory trends. On the one hand, companies tend to increase offshoring. On the other hand, they recognize that offshoring raises many management issues as well as additional costs across the supply chain. If our world appears to be "flat" thanks to the development of information technologies and systems, as well as the emergence of innovative organizational forms (Friedman 2005), products still need to be handled and carried, thus limiting the impact of virtual distance reduction. We therefore suggest that offshoring decision is often guided by isomorphism and try to formulate a tentative framework to help companies decide what products to offshore.

Keywords:
Low cost country sourcing – transaction costs economics – resource-based view - imitation

1. **INTRODUCTION AND BACKGROUND**

While some industry leaders, such as Zara, have built their competitive advantage through local sourcing –concentrating manufacturing and warehousing facilities in their home European country-, more and more companies, belonging to almost every industry, are moving at least part of their production or sourcing to countries where labour costs are significantly lower than in Western Europe or North America. Therefore, it is particularly interesting to analyze the actual benefits and outcomes of this phenomenon that we will name "offshoring" from now on. Our focus for this study is limited to manufactured products i.e. does not includes non-materials or intellectual services.

The past 40 years of operation management research and practice have helped companies to adopt Just-In-Time (JIT), Total Quality Management (TQM), lean manufacturing and more recently environmentally focused approaches. More specifically, and as outlined by Kleindorfer, Singhal and Wassenhove (2005), first decades of operation management were dedicated to the diffusion of Japanese concepts of JIT, Kanban or TQM among others, to American and European manufacturing companies and particularly the car industry companies. Such tools were primarily focused on time based competition. They allowed companies to answer customer needs more precisely and quickly without compromising economic efficiency. Indeed, "pull methods" in manufacturing have shortened production and supply cycles while decreasing inventories. In addition, such methods were even improved through the reinforcement of manufacturer – supplier partnerships. At Toyota for example, the supplier network characterised by inter-enterprise teams and regular interactions, combined with geographical proximity, has been analyzed as a source of competitive advantage (Dyer 2000). The interest for the theoretical framework of transaction cost economics (TCE) in the 1980's further reinforced such approach. Indeed, many authors (Dyer 1996, 1997, Williamson 1975, 1985, 1991) showed that buyer-supplier alliance represents a governance mode between the market and the hierarchy that could benefit from advantages of both traditional modes. Indeed, alliance can be a way to reduce transaction costs and opportunism through the development of high-level transaction specific investments such as dedicated production plants and facilities.

Later, as of the beginning of 1990's, those same concepts have been extended to the service industry and the processes in general, behind the development of Business Process Reengineering (Hammer 1990) for example. Such move was further reinforced by the growing interest for the Resource-Based View (Barney 1991, Wernerfelt 1994). In that

context, buyer-supplier alliance was analyzed as a way to leverage individual competencies and join them to create further value. During the 1990's, Efficient Consumer Response (ECR) was a concrete manifestation of such diffusion in the retailing and consumer goods industries. As previously, this lead to a decrease in inventory days as well as a reduction in other operating costs along with a better answer to the customer needs.

Later still, with the development of supply chain management, the focus on process improvement has been extended to the whole chain including previously non-involved actors. This meant an upstream extension for the consumer goods industry with the involvement of manufacturers' suppliers. In the car industry however, this turns into a downstream extension towards retailers and customers. Separately, most industries also included final consumer perspective, as evidenced by the development of Customer Relationship Management (CRM). Finally, social responsibility focus led companies to also include environmental concern as one of their priorities.

While previously detailed innovations and evolutions towards integrated supply chain management appear consistent and cumulative towards improved costs, quality and responsiveness, current trend towards low cost country offshoring seems in contradiction with previously acquired learning. We first analyze such phenomenon through traditional theoretical lens in strategic management, namely transaction cost theory and resource-based view, further complemented with a sustainable development approach. Such theoretical analysis helped us to formulate hypotheses on the impact of offshoring, both overall and related to firm features. As a second step, we started testing such hypotheses through a survey of 150 French and Belgium companies. While traditional perspectives failed at fully explaining currently observed phenomenon, we suggest alternative explanations based on isomorphism. As a final step, we formulate recommendations for practice and specifically propose a framework to better evaluate what situations are better suited to the decision to offshore.

2. THEORETICAL DEVELOPMENT

Offshoring is part of international management decisions that deal with the organization and the location of international activities and specifically production and trade. International business literature benefits from a long tradition in economy, starting with Ricardo (1817) and its comparative advantage between countries and continued later with the first theories of the internationalisation of the firm (Vernon 1966, Wells 1969, Hymer and

Rowthorne 1970). Strategic management elaborated from these foundations and developed theoretical arguments on the formation and management of the multinational company. Since the beginning of the 1980's when the strategic management field started to study the multinational company, international business research had been built on two major theoretical backgrounds to explain most moves: the transaction cost perspective (see Hennart 1988 and 1991 for example) and the resource-based view (e.g. Hamel 1991). Therefore, we first analyse current move towards offshoring through those two traditional perspectives.

2.1 OFFSHORING AND THE TRANSACTION COSTS ECONOMICS PERSPECTIVE

The decision to offshore, whatever internally through the relocation of production or sourcing, or externally through outsourcing, implies the management of the transaction between the headquarter and the low country organization that can be internal or external. Therefore, offshoring move calls for transaction costs analysis.

Following the transaction cost perspective, firms are selecting the organizational form that minimizes the sum of production and transaction costs. When looking at offshoring decision, it is usually motivated by huge decrease in manufacturing (or purchasing) costs. Therefore, such decision can be supported by the transaction cost economics framework provided that other costs, and particularly transaction costs, remain stable, or at least, increase less in absolute value than the observed decrease in manufacturing costs.

However, such decision definitely impacts these types of costs. Specifically, sourcing from low cost countries raises transaction costs, whether internal –in the case of relocation- or external –for outsourcing-, and supply chain management costs in general. Indeed, transaction costs are made of coordination costs incurred by the management of customer-supplier relationship whether internally or externally. Traditionally, these costs include ex-ante costs aimed at setting up the contract (contract negotiation and writing) and ex-post costs aimed at controlling the partner to have him respect the contract clauses and not behave opportunistically (Williamson 1985).

When products are made far away from both conception and consumption locations, resources are needed first to monitor manufacturing and ensure that it follows prescribed guidance and respect quality standards. Such costs are materialized by needed investment in information systems and legal framework as well as human resources dedicated to the long distance management and located both at the head office and in the low cost country. For

instance, Wal*Mart had set up an organization of 2000 people in China in order to ensure goods selection, suppliers control and follow-up as well as logistics organization.

Separately, offshored manufacturing also impact supply chain costs. First of all, transport costs are doubtlessly and directly increased. Also, products should be warehoused in several locations: at the production plant, at the distribution centre in the low cost country – aimed at grouping goods before shipping them- and in the consumption country where picking and distribution are organized. Further still, products are often handled several times, controlled and reconditioned (products sent through containers are often pallet-free).

While transport costs, as well as other direct logistics costs (such as double handling, reconditioning, quality control,...) are usually included in calculations before any decision to offshore, other supply chain related costs are often under-estimated. Specifically, companies need to spend resources to meet demand on several criteria such as quantity, diversity, delay, service... While advances in operation management over the past 40 years have helped to better meet these criteria through innovations such as just-in-time with geographic proximity between plant and suppliers, postponement, information systems,.., current trend towards low cost country sourcing generate additional uncertainty and delay. Indeed, as production facilities are located far from marketing, sales and general management as well as consumers, time is needed to transfer information and control that the request has been properly executed. Advances in information systems have enabled such distant coordination and information transfer. However, it cannot fully substitute to face to face and regular proximity relationship (Dyer, 1996)

In addition, low cost suppliers often require production in batch with large volumes. Such constraint further slows down the whole process and increases inventory. Moreover, once manufactured, products need to be delivered to their consumption location: delivery in containers also forces grouping of orders that may add further delay. Therefore, firms that decide to offshore their manufacturing need to better anticipate consumer demand. Such anticipation raises several costs that could be attributed to transaction costs as they result from frictions between trading partners whether internal or external. Indeed, it first generates additional complexity in production planning and coordination of such planning with manufacturing and / or suppliers. Separately, as forecast is done several weeks or months in advance, buffer stocks are needed to improve market mediation. In spite of those additional inventory costs, effective production cannot precisely match consumer demand generating unsold goods to be scrapped or discounted, as well as out-of-stocks. These market mediation

costs are all the more significant that demand for the product is highly uncertain and difficult to predict (Fisher 1997).

To sum up, offshoring should increase both physical costs (Fisher 1997) of the supply chain through transportation, handling, warehousing and inventory and market mediation costs (Fisher 1997) behind mismatch between supply and demand (buffer stocks, unsold articles, stock-outs).

We expect therefore that low cost country sourcing will generate significant coordination and other logistic costs:

Hypotheses 1a: Offshoring has a negative impact on supply chain costs.

Hypothese 1b: Companies selling products with demand characterized by uncertainty will not decide to offshore.

More precisely, we expect these costs to be particularly high when products are characterized with demand uncertainty or are associated with high logistic cost relatively to their value. Overall, we believe those costs could offset the benefits resulting from lower production or purchasing costs. As a result, following the transaction cost perspective, move to offshoring is particularly difficult to justify when demand uncertainty is high or when logistics costs are significant as a percentage of sales.

2.2 LOW COST COUNTRIES SOURCING AND THE RESOURCE-BASED VIEW

According to the resource based view (Barney 1991, Wernerfelt 1984) of the firm, competitive advantage arises from valuable, rare and difficult to imitate or substitute competencies. Sustainability of such competitive advantage is better achieved through internal resources or very strongly established partnerships, as competitors could not access those specific resources. Canon, for example, managed to sustain its innovative competencies in the field of compact copier development for years, through the decision to keep internally its production facilities so that no competitor (such as Xerox) could access to its specific and valuable knowledge.

Further, resource endowment is sticky (Teece, Pisano and Shuen, 2000). Indeed, resources are firm-specific and are difficult to transfer to another firm or newly established subsidiary because of transaction costs and because of certain features of those firm-specific assets. Indeed, they often include tacit knowledge and are embedded into the organization,

specifically through routines. Indeed, previous research (Winter 2003) showed that organizational capability is a collection of high-level routines. Finally, specific resources can be the result of the firm own history as they have been accumulated through time. Overall, resource features that make them valuable and difficult to imitate by competitors, are, by definition, equally difficult to transfer to external trading partners. Efficient transfer to trading partners and specifically to low cost country suppliers suggests that resources have been first converted into explicit and codified knowledge. If such scenario occurs, and it should to ensure successful offshoring, those same resources become easy to appropriate by competitors also. Such imitation is all the more likely that manufacturing is outsourced. Indeed, low cost country suppliers or contractors are usually specialised and offer manufacturing services to several competitors as well as develop their own products. In the toy industry for example, Mattel and its major rival Hasbro use the same contractors in China. For that reason, they cannot maintain any competitive advantage through specific resources at that stage of the value chain. Further, their Chinese suppliers have developed their own range of toys, also sold to international retailers, thanks to learning and resource acquisition from toy market leaders, Hasbro and Mattel specifically. As a result, their Chinese suppliers have also become their competitors. When manufacturing is kept internally but relocated in a low cost country, imitation is less easy. However, knowledge transfer from headquarter and previous manufacturing entities to newly established plant also suggests knowledge codification that makes resources less difficult to imitate.

In addition, as further development of the resource-based view -particularly through the concepts of dynamic capabilities and knowledge-based view (Grant 1996, Teece, Pisano & Shuen 1997, Helfat & Peteraf 2003)- shows that competitive advantage results from existing assets but also relies on the evolution path of the resources. Specifically, knowledge acquisition and development is particularly critical for organizations that involve tasks of production, i.e. the transformation of inputs into outputs (Grant 1996). As learning is created inside human heads, knowledge needs to be transferred, aggregated and appropriated by other members of the firm to ensure efficient utilization (Grant 1996). Specifically, knowledge transfer and appropriation are all the more difficult to achieve when locations of development and location of utilization are different. In the specific case of manufacturing activity, such knowledge has to be transferred and aggregated from headquarter to plant. Such task is made all the more difficult when manufacturing entity is located in a low cost country for several reasons. First of all, geographic distance between plant and headquarter does not favour efficient capability transfer (Dyer 1996). Second, knowledge integration and transfer are

easier to achieve when involved actors have common language (Grant 1996). Specifically, lack of common language (Chinese contractors or workers versus English or French speaking managers for example) can be a barrier to efficient knowledge transfer. Separately, differences in other means of communication including more symbolic and cultural items, also impact knowledge transfer and appropriability efficiency. Conversely, common background and language on management concepts (such as TQM, JIT,..) or familiarity with similar trading habit or computer systems considerably favour quick and efficient human exchanges between actors.

Therefore, the move to offshoring appears in contradiction with both the development and the sustainability of valuable resources. Indeed, sourcing from low cost country represents a discontinuation versus previously developed and internally accumulated knowledge. More specifically, manufacturing in low cost countries suggests an efficient transfer of product and process specific competencies to low cost production units and employees. While such transfer of competencies is a pre-requisite to relocate manufacturing in a foreign country, whether internally or externally, it leads to harmful consequences on a resource point of view. First of all, it makes any further competence development more difficult as their application and development become disconnected. Separately, it raises the opportunity for competitors or imitators to access to the specific knowledge and produce similar goods or services. Finally, the strategy to source from low cost countries is easily imitable and cannot constitute by itself a competitive advantage.

Hypothese 2: Companies with valuable and rare resources will not decide to offshore.

2.3 LOW COST COUNTRIES SOURCING AND THE SUSTAINABLE DEVELOPMENT

Current trend towards an increasing concern for the environment is also in contradiction with offshoring through, at least, two distinct side-effects. Indeed and first of all, as already outlined, increase in transportation is a direct and obvious consequence of offshoring. As a result offshoring leads to additional gas emission even though most imports from low cost countries are forwarded by boat which pollutes less than other transportation modes. Overall significant increase in transportation inevitably impacts pollution level. Second, manufacturing capacity and infrastructures were built and increased so rapidly in low cost countries that environmental constraints were not considered as a priority. Further,

regulations in general, and environmental ones in particular, are currently less stringent in low cost countries than they are in Europe or Northern America. Interestingly, part of the cost advantage for manufacturing in those countries results from the gap between their regulation context and ours.

As a consequence, current move to offshoring appears in contradiction with the prescriptions of major theories of strategic management i.e. transaction cost economics, resource-based view and knowledge-based theory. Further, it also goes against one of the current major emerging trend in management i.e. sustainable development and more specifically concern towards environment. Therefore, such quasi generalized trend has to be explained differently.

2.4 ALTERNATIVE EXPLANATION FOR THE LOW COST SOURCING PHENOMENON

While traditional perspectives in management –and particularly the transaction cost and resource based theories- failed at explaining why most companies (particularly those characterized with uncertain demand and valuable resources) decide to source from low cost countries, we tried to find alternative explanations.

Specifically, we argue that low cost country sourcing is motivated by imitation behaviour. Indeed, business imitation has been studied and observed in several contexts for more than a decade. As shown by previous research (Greve, 1996; Fiol & O'Connor, 2003; Lieberman & Asaba 2006), imitation behavior is predicted by a number of theories including highly rational behavior such as positive externalities (Katz & Shapiro 1985) or more social or institutional explanations of isomorphism (DiMaggio & Powell 1983). Imitation behavior is rooted in sociologic as well as economic theories. Separately, recent literature review on business imitation behavior (Lieberman & Asaba 2006) evidenced two major groups of motives for imitation, often acting simultaneously: i) information-based theories, where firms follow others that are considered as holding superior information and ii) rivalry-based theories where firms imitate others in order to maintain current competitive equilibrium.

Separately, isomorphism behaviour, also qualified as "conventionism" (Gomez 1995, Marchesnay 1997) has been explained by competing and contractictory approaches. On the one hand, convention has been seen as the result of institutionalism. In this case, institutions

define frameworks and norms that companies will follow similarly, indirectly evidencing imitative behavior. The 80's and 90's trend for quality management could be an example of such behavior (Gomez 1995). Acting towards the application of a common rule or norm represents a justification for individual company's decisions (Boltanski and Thevenot 1991). Regulations whether at the country or industry level often trigger such behavior. On the other hand, isomorphism behavior could also result from a pure individualistic and optimum seeking decision. In that case, companies are often imitating competitors' decisions that go against institutionalism such as coalitions for example. Following this analysis, individual behavior progressively becomes collective behaviour.

In the studied context of offshoring, institutional context is a facilitator for some decisions (e.g. smother regulations on Asian textile imports in 2006) but does not represent the source for similar behaviour. Indeed, it first encompasses all types of industries and western countries and is not limited to specific institutional context. Therefore we will assume that studied phenomenon is more the result of competition pressure that institution pressure and we will try to analyse this phenomenon from the competition perspective. However, as practices are imitated, they become "institutionalized" and further reinforce observed phenomenon, acting as institutional pressure. Specifically, both types of motives for imitative behaviour (information based and rivalry based explanations) could be argued. On the one hand, firms decide to offshore to maintain current competitive positioning in term of product cost. As competitors are moving their production to low cost countries, they assume that following such move prevents them from taking the risk to worsen current competitive equilibrium as it represents a guarantee to maintain current cost structure differential versus competition. Further, firms are inclined to act that way as external stakeholders, and specifically financial analysts, markets, consultants and shareholders- indirectly increase rivalry and widely communicate about the positive financial impact of offshoring decisions. Put differently, financial markets as well as consulting firms represent indirect pressure to imitate competitors as previous decisions to offshore have turned into stock price increase, at least in the short term. In that case, firms aim at maintaining current rivalry equilibrium both on business areas and on a financial market perspective. On the other hand, firms tend also to imitate their competitors assuming those competitors have more valuable information and take the right decision. Such behaviour is particularly common in highly uncertain environments. Indeed, in such contexts, companies are lacking time to thoroughly analyze current complex situation and the impact of every possible scenario. They are therefore

lacking data to seriously evaluate the right decision to take. Any competitive industry suggests high velocity environment and quick decision making that motivate firms to imitate their competitors.

Overall, imitation behavior is particularly relevant and thus adopted in the case of highly uncertain and competitive environments (Lieberman & Asaba 2006). Indeed, the need for a quick decision making, which is required in this type of environment, makes it difficult for firms to conduct thorough economic analysis before acting and leads them to imitate each other, assuming that competitors are doing right or that it will help maintain current positioning and legitimacy within its competitive environment. Therefore, imitation theories have been mainly used to explain diffusion of innovation (Abrahamson & Rosenkopf 1990, 1993, Shapiro 2003) and new market entry whether geographic entry (Davis et al. 2000) or entry into new segment (Greve 1996) or industry. Low cost country sourcing as such had been rarely analyzed in the past through the lens of imitation. However, offshoring features make it particularly suitable to such type of behavior. Indeed, the move to offshoring suggests existing strong competition as it reflects a need for quick and significant product cost reduction. Separately, similarly to the entry into new markets, the move to low cost country represents the experience of a new, foreign working environment and is therefore characterized with uncertainty.

For all these reasons, isomorphism is likely to explain the decision to offshore in general. Further, we have shown previously that decision to offshore is all the more difficult to explain through traditional perspectives (and particularly through transaction cost theory) that firm environment is very uncertain. Further, following the resource-based view, offshoring is particularly risky and harmful when the competitive advantage of the firm lies in valuable and robust resources that are particularly key in such dynamic environments. Therefore, once again, traditional perspective cannot fully explain the move to offshoring, particularly in the case of innovative environments. Interestingly, as shown by Fisher (1997), uncertain demand patterns that characterize innovative products call for a reactive supply chain, including fast and targeted response to changing consumer demand. Therefore, when offshoring is observed in highly uncertain environment, we expect the impact of imitative behaviour to be stronger. Conversely, in the context of stable demand, offshoring is more economically justified in general.

Hypotheses 3a: Offshoring is influenced by imitative behaviour.

Hypotheses 3b: The more unstable is demand pattern, the more offshoring decision is influenced by imitation.

3. METHODS

3.1 DATA SOURCE AND METHODOLOGY

In order to start testing our framework, we used a sample of companies both already experiencing offshoring and not. Overall, our field research was conducted in France and Belgium manufacturing sector through on-line survey of 150 respondents, complemented with 20 face-to-face in-depth interviews with supply chain managers and directors. The respondents of on-line survey were part of Supply Chain Magazine (French leader in specialized press for supply chain and logistics managers) database. Before sending the on-line survey, an extraction of the base was conducted to exclude service companies and target supply chain and logistics managers. Final respondents sample amounts to 150, corresponding to a 5% return rate and is representative of the larger base except an over-representation of the Belgian market. Indeed, our sample includes two thirds of companies located in France and one third in Belgium. The manufacturing sector is represented through a wide variety of industries. More specifically, industries present with the highest weight in the sample are, in descending order, heavy industry (19%), followed by retailing (16%), electronics/information technology (15%) and the chemical/pharmaceutical industry (12%).They are followed by the car industry (7%) and the textile industry (6%). Among the least represented industries are the telecommunications industry (2%), transport (3%), aeronautics (3%) and the construction industry (3%). Companies within our sample are also diverse respective to their size. Two thirds have sales over 100 million euros, out of which one third exceeds one billion euro sales.

In-depth interviews were separately conducted with supply chain directors who had been selected for their previous experience of low cost country sourcing. These interviews aimed at better understanding their motivations, practices and results. Interview pattern was elaborated in partnership between BearingPoint and Supply Chain Magazine. Interview and on-line survey patterns are similar, although interview includes open questions. Before use, questionnaire was tested with supply chain experts including supply chain managers and consultants. Major questions / themes included in the final survey or discussed in face-to-face interviews are summarized in appendix.

In order to test our hypotheses, we run preliminary statistical tests with our quantitative data. More specifically, we run pair to pair correlations to confirm some of the relationship that we evidenced in our theoretical development. Separately, we have also elaborated on the data results. However, such treatments are only a very preliminary way to test our framework and we plan to further work on it in the future.

3.2 PRELIMINARY DATA DESCRIPTION AND ANALYSIS

Overall, our research clearly confirms a widespread interest for low cost country sourcing and shows that over 80% of the companies within our sample are either already sourcing from low cost countries or seriously analysing the project to do so. Within already offshoring companies, our sample includes firms that have relocated their own production facilities (26%) as well as firms outsourcing their manufacturing in a low cost country (27%) and firms that purchase products or materials from these countries. The interest for low cost country offshoring is significant for historically pioneering industries such as textile or toys but also for almost every other industry: retailing, car industry, pharmaceuticals and chemistry, electronics, energy, aeronautics,… In addition, surveyed firms are convinced by their decision to offshore as they do not consider to withdraw: 69% of firms that are already sourcing from low cost countries declare they will further intensify in the next years while 29% will maintain current level and only 2% will decrease.

When looking at the country pattern, China is unsurprisingly the leading sourcing country (30%), ahead of Eastern Europe (23%). Eastern Europe offers the benefit of geographical proximity, which reduces not only the lead-times for delivery but also the risks associated with reliability of supplies. India, which is positioned more strongly in IT services, and in Research & Development, lies in third place (16%) for manufactured products, mainly because its logistics infrastructure is relatively undeveloped as yet. It should also be noted that most of the companies within our sample are sourcing from several countries at the same time, whether to adapt the type of product to the country or to reduce the risk associated with a single sourcing.

When further analyzing our results, we noticed that all types of products are currently sourced from low cost countries i.e. the one with very recent technology (23%) as well as less recent technology (35%) or more classic ones (42%). Separately, companies introducing new

products several times a year as well as companies with longer life cycle products are equally involved in low cost countries sourcing.

While sourcing from low cost countries is definitely generalised, our study evidences a strong negative impact of such move on the supply chain performance metrics, confirming our hypotheses 1a. More precisely, sourcing in low-cost countries systematically and negatively impact logistics performance through increased lead-time, lower reliability and responsiveness, additional costs (in delivery, warehousing and handling) and decreased service level. Observed effects are detailed below.

- Reliability of supplies and lead-times for delivery

Needless to say, the more geographically remote the sources of supply, the longer lead-times for delivery grow. Whereas it takes 1 or 2 days to deliver products from a domestic supplier, 5 days are needed to deliver goods from a supplier based in Eastern Europe and 30 days from a supplier based in China. 58% of the companies within our sample stated that sourcing in low-cost countries has a negative impact on the reliability of their supplies. Longer lead-times and greater geographical distances do indeed greatly increase the risks of exceeding agreed lead-times. The growing volumes put on some low cost suppliers are further increasing those risks. In addition, cultural gaps in communication are often mentioned as obstacles preventing processes flowing smoothly, and thus adversely affecting the reliability of supplies.

- Inventory management

70% of companies state that sourcing in low-cost countries led to significant increase in inventory level overall. Such increase is partly explained by the creation of a buffer stock, representing the first preventive measure for mitigating the effects of non-performance or late delivery.

Companies have indeed set up buffer stocks to soften the harmful effects of longer delivery times and reliability issues. Further, longer lead-times also impact planning constraints and inventory level in turn, any inaccuracy increasing the quantities of unwanted stock. Finally, purchasing from and producing in low-cost countries often call for high minimum volumes, which are needed to obtain the low prices sought by buyers. Such production batches inevitably mean increased stock levels.

- Logistics costs

Apart from inventory costs previously detailed, any geographical remoteness of sources of supplies from zones of consumption directly produces an increase in logistics costs, notably in the areas of transport and customs and tariff formalities. Interestingly, 68% of the companies within the sample consider that remote sourcing has produced an increase in their logistics costs. In addition to these transport costs, there are sometimes double-handling costs: products are transported by container and often require repacking and stickering to be sent to several distribution channels.

Separately, significant additional costs, such as airfreight delivery or alternative emergency production or re-packing, are resulting from the emergency measures taken in the event of late delivery or non-delivery of products.

- Costs linked to supervision of low-cost sourcing operations

56% of the companies in the sample noted an increase in administrative costs. Indeed, supervision and monitoring, as well as accurate planning, are made more difficult by the distance involved, which is both geographical and cultural in nature, but they are essential activities and justify the resources spent on them.

- The ability to react quickly to customers' demands

Nearly 55% of the firms that were part of our study stated that sourcing in low-cost countries has sharply reduced their ability to react quickly to customers' demands. Such lower reaction capability has given rise to other, more indirect costs, rarely highlighted. Interestingly, a lack of reaction capability may result in disappointment for customers, and may even mean lost turnover if products sold ex-stock run out. In addition, some products are manufactured and delivered even though they will never be sold, because requirements were not properly anticipated. These unsold goods have to be disposed of, or sometimes even destroyed.

- Service level

For one third of our sample, the service level provided is negatively affected by sourcing in low-cost countries. This deterioration is mainly attributable to the issue of reliability of supplies, which has already been highlighted. Furthermore, the distance involved, coupled with the shortcomings of tracking tools, reduce the ability of firms to respond accurately to actual customer needs.

In addition, pair-wise correlations between the characteristics of offshored products (recentness of technology, innovativeness) and the observed impact on previously detailed logistics performance metrics evidenced no significant differences between the groups, and therefore no specific pattern for innovative products versus more functional one. Similarly, the impact on supply chain performance metrics is widespread whatever the considered industry. Interestingly, the decision to offshore and those industry characteristics (level of innovativeness, recentness of technology, type of industry) are not significantly correlated. While further statistical tests should help further conclude of the lack of correlation between these variables, it represents first evidence towards the lack of accountability of such characteristics in offshoring decision. Therefore, we could not confirm H1b and H2 and could even suggest first arguments against economically rationale behind offshoring of products characterized with uncertain demand and including high level of knowledge.

According to our study, the consequences for the Supply Chain of sourcing in low-cost countries can be classified into two main groups:

1- Inevitable consequences that have to be anticipated:
   - ✓ costs incurred for transport and formalities customs,
   - ✓ the planning process becomes a more complex task,
   - ✓ products have to be checked on receipt and packaged,
   - ✓ flow organization and supervision become more complex tasks.

2- Effects that call for special management in order to reduce their harmful consequences:
   - ✓ a lesser ability to react to significant fluctuations in demand,
   - ✓ quality problems,
   - ✓ greater unreliability of deliveries,
   - ✓ counterfeiting.

Finally, the observation of offshoring decision, industry by industry, tends to confirm the isomorphism behavior i.e. our hypothesis H3. Indeed, offshoring is particularly adopted in specific industries, some of which do not seem particularly relevant when analyzing their characteristics. For example, every textile company within our sample has already implemented offshoring with specific need for reactivity in this industry is in contradiction with such generalized move. Therefore, we can bring first evidence to confirm H3b as companies with unstable demand patterns seem to imitate their competitors. Separately, 26%

of the companies within our sample that already offshore declare that such decision has been influenced by competitive pressures. This confirms that imitation behavior may be present in offshoring decision and tends ton confirm H3a.

Overall, our field study confirms that most companies are currently offshoring part of their manufacturing, or are seriously considering the project to do so. Separately, most of them plan to further intensify this move while recognizing at the same time significant negative impacts on their supply chain activity, costs and service level. Such paradox helps ton confirm that traditional theoretical approach, mainly based on transaction cost and resource based view perspectives, cannot explain current move. As a consequence, we have shown first evidence to explain offshoring movement through isomorphism behavior. In our future research, we will now try to better understand this apparent paradox, particularly via a more sophisticated data analysis approach as well as complements through in-depth specifically targeted case studies.

4. CONCLUSIONS AND DISCUSSION

The current results of our study are very much a reflection of work in progress. Nevertheless, the results, as they currently stand, confirm that, apart from isolated cases, all types of firms are likely to offshore in spite of several proven negative effects. Such widespread move, which is difficult to explain with traditional strategic and operation management frameworks, can be traced to imitation behavior, evidencing a “management fashion” behind the move to low cost countries. As observed, only clear and isolated industry leaders or actors with clear differentiated positioning such as Zara, American Apparel or Women’s secret in textile, could afford different choice.

Among several negative impacts, it first increases physical logistics costs that are particularly critical when logistics represents already a significant part of product cost and price. Whatever the case, when physical costs are significant i.e. for functional products (Fisher 1997), it is absolutely compulsory to compare production cost saving versus supply chain cost increase including physical costs as well as all types of administrative, handling and inventory costs, before taking any final decision as the final purpose of an efficient supply chain, relevant for functional products (Fisher 1997), is to optimize costs, not at the local but rather at the global level. As a consequence, we expect that functional products offshoring

makes sense, only when their physical characteristics make them easy and cheap to deliver, handle and warehouse. The harder these products are to transport, the higher these costs become: in particular, bulky and fragile products have significantly higher transport costs and undermine the benefit of remote sourcing all the more where they represent a high proportion of the product's value. Consequently, it is more advantageous to source products like baseball caps and screws from Asia, than bottles of mineral water or yogurts.

Second, offshoring significantly and negatively impacts market mediation ability of the firm (Fisher 1997) that is however key for innovative products and it helps to answer to requested reactivity. Therefore, the decision to offshore innovative products should take such dimension into account; actual benefit of offshoring is therefore not obvious in those cases and companies may need to adapt their supply chain to make it feasible and profitable. Separately, those companies with valuable and rare resources providing them long-lasting competitive advantage should even further thoroughly consider the risks of offshoring as an entry point for imitators and subsequent decrease in competitive advantage. As firms with innovative products are, by definition, including idiosyncratic resources, it further questions the benefits of offshoring.

Generally speaking, the industries that can derive maximum benefit from this type of sourcing are those marketing products whose intrinsic value far exceeds their logistics cost and/or products with a low or reasonable level of fluctuation in demand. Nevertheless, despite their products being relatively unsuited to this trend, some industries are trying to adapt their products or logistic channels to develop remote sourcing. For example, furniture is dispatched in kit form before being assembled locally and flowers are express-delivered by airfreight to the central logistics platform at Aalsmeer in the Netherlands!

Products that call for a strong reaction capability due to constant changes in demand (such as products that are influenced by fashion phenomena or characterized by a strong and rapid changes in technology) will limit the benefit of remote sourcing, which by definition leads to longer lead-times and thus calls for greater anticipation: this means that assumptions must be made upstream about volume, in markets that are by nature unpredictable… Such anticipations are inevitably prone to errors, and these are likely to become greater as forecasts are made further ahead of the date of sales. Where the products concerned have a short lifespan, such errors lead on the one hand to stock-piling of goods, which then have to be rapidly depreciated or even destroyed, and on the other hand, to stock running out on the best-selling items, in other words major losses of profit! As a result, companies marketing such

products cannot always derive a benefit from sourcing in low-cost countries and must always consider the issues involved and organize themselves accordingly.

Choosing which products to source is vital in a low-cost sourcing project. We propose therefore a framework to help companies to select the products that are most relevant to this type of activity:

	Products with a low level of fluctuation in Demand : Functional products	Products with a high level of fluctuation in Demand: innovative products
Low logistics cost (as a % of product value)	Products **well-suited** to low-cost sourcing	Products that will require major adaptations in organization to make low-cost sourcing profitable
High logistics cost (as a % of product value)	Products that will require major adaptations in organization to make low-cost sourcing profitable	Products **not well-suited** to low-cost sourcing

Despite what we believe are the main contributions of our work, we recognize it has some limitations. First our field study is limited to French and Belgium firms and is preliminary. As this stage, it is therefore difficult to generalize and conclude. Specifically, it would be interesting to run a similar though deeper study on a larger sample to be able to run statistical tests and conclude on the impact of offshoring on performance relatively to several company characteristics such as size, industry, … We believe however that our first study help better understand current behavior of most companies to offshoring and provides some warning on such trend as well as management tool to better analyze and adjust such decision. We hope our future research will help further understand such phenomenon.

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Appendix:

A. Major questions of the survey / interview:

1. **Are you currently sourcing from low cost countries?**
2. **What are the main reasons?**
3. **Who is in charge and who is involved?**
4. **What were your main motivations?**
5. **How did you evaluate the opportunity of the project?**
6. **What products are concerned?**
7. **What countries?**
8. **What are the observed results on logistics performance (service level, costs, delay)?**
9. **What type of information are you exchanging with your low cost suppliers and how?**
10. **What are the obstacles and issues?**
11. **What are your perspectives concerning low cost country sourcing?**

B. Questionnaire en ligne (version originale en français)

La notion de pays à bas coûts couvre les pays présentant les différentiels importants par rapport à l'Europe de l'Ouest en termes de coûts de main d'œuvre.

Afin d'améliorer la lisibilité du questionnaire, la terminologie générique « **approvisionnements** » sera utilisée pour couvrir les notions d'achat à des fournisseurs externes ainsi que l'approvisionnement depuis des moyens de production délocalisés, qu'elles soient en pleine possession ou en joint venture.

I- Présentation générale :

12. Réalisez-vous des approvisionnements depuis les pays à bas coûts?

☐ Oui ☐ Non

(1 choix)

Si Oui, question n°9

Si Non, question n°2 à 8 puis question n°33 à 37

13. Quelles en sont les principales raisons ? *(indiquez vos choix par ordre d'importance)*

(Construction en colonne)

☐ Coût de la logistique

☐ Technologie complexe

☐ Confidentialité des brevets

☐ Réactivité

☐ Délais

☐ Complexité des procédures douanières et tarifaires

☐ Risques de contre-façon

☐ Autre A préciser :

14. Avez-vous des projets d'approvisionnements dans les pays à bas coûts ?

☐ Oui ☐ Non

(1 choix)
Si Oui, question n°4 à 7
Si Non, question n°8

15. Qui est en charge du projet ?
(Multiple)

☐ Directeur Général ☐ Directeur des Achats

☐ Directeur Supply Chain / Logistique ☐ Directeur Financier

☐ Directeur des Opérations ☐ Directeur Stratégie

☐ Autre A préciser :

16. Quelles sont vos motivations à un tel projet ? *(indiquez vos choix par ordre d'importance)*
(Construction en colonne)

☐ Action des concurrents ☐ Incitation fiscale

☐ Réduction des coûts ☐ Demande de clients

☐ Recherche de savoir-faire / compétences

☐ Autre A préciser :

17. Quels critères sont pris en compte pour l'évaluation économique du projet ?
(Multiple)

☐ Coût d'achat ☐ Coût de stockage

☐ Coût de production ☐ Coût de possession de stock

☐ Coût d'acheminement ☐ Coût de préparation des cdes clients

☐ Coût administratif lié au pilotage des opérations

☐ Autre A préciser :

18. Quelles fonctions sont impliquées dans le projet ?
(Multiple)

☐ Fonction Achats ☐ Fonction Financière

☐ Direction Générale ☐ Direction des Opérations

☐ Fonction Supply Chain / Logistique ☐ Fonction Markeking

☐ Fonction R&D ☐ Fonction Qualité

☐ Fonction Stratégie

19. Si vous n'avez pas de projet, quelles en sont les principales raisons ?
(Ouverte)

20. Quelles types d'opérations réalisez-vous dans les pays à bas coûts ?
(1 choix)

- ☐ Achats (marchandises/produits finis/composants/matières)
- ☐ Délocalisation industrielle
- ☐ Achats (marchandises/produits finis/composants/matières) et délocalisation industrielle

21. Dans le cas d'achats externes, quelle est, en pourcentage, la part réalisée sur la totalité des produits vendus ?
(1 choix)

- ☐ <10%
- ☐ 10-30%
- ☐ 30-50%
- ☐ >50%
- ☐ NSP

22. Quel est le degré technologique des produits approvisionnés depuis les pays à bas coût ?
(1 choix)

- ☐ Techonologie récente
- ☐ Technologie moyennement récente
- ☐ Technologie banalisée

23. Avec quelle fréquence lancez-vous de nouveaux produits au sein des gammes approvisionnées depuis les pays à bas coûts ?
(1 choix)

- ☐ Inférieur à 6 mois
- ☐ Entre 6 mois et 2 ans
- ☐ Supérieur à 2 ans

24. Dans quelles régions/pays réalisez-vous des approvisionnements ?
(Multiple)

- ☐ Chine
- ☐ Afrique du Nord

☐ Inde ☐ Europe de l'Est

☐ Autre Asie ☐ Amérique du Sud

☐ Autre A préciser :

II- Le rôle du département Supply Chain dans les opérations d'approvisionnements dans les pays à bas coûts :

Au sein de votre entreprise :

25. Qui est en charge de la mise en place des opérations d'approvisionnements dans les pays à bas coûts ?
(Multiple)

☐ Direction des Achats ☐ Direction des Opérations

☐ Direction Supply Chain / Logistique ☐ Direction Générale

☐ Direction Financière ☐ Direction Stratégie

☐ Autre A préciser :

26. Existe-t-il un responsable/directeur chargé des opérations d'approvisionnements dans les pays à bas coûts ?
(1 choix)

☐ Oui ☐ Non

27. Si oui, qui est responsable du pilotage des opérations ?
(1 choix)

☐ Directeur des Achats ☐ Directeur des Opérations

☐ Directeur Général ☐ Directeur Supply Chain / Logistique

☐ Directeur Stratégie ☐ Autre A préciser :

28. Quels sont les départements de l'entreprise impliqués dans les opérations d'approvisionnements dans les pays à bas coûts ?
(Multiple)

☐ Achats ☐ Supply Chain/Logistique ☐ Finance

☐ Marketing ☐ R&D ☐ Production

☐ Qualité ☐ Stratégie

☐ Autre A préciser :

Au sein du département Supply Chain :

29. Le département Supply Chain/logistique participe-t-il aux décisions d'/approvisionnements dans les pays à bas coûts ?
(1 choix)

☐ Oui ☐ Non ☐ NSP

30. Quel est le rôle du département Supply Chain/logistique dans les opérations d'approvisionnements dans les pays à bas coûts ? *(indiquez vos choix par ordre d'importance)*
(Construction en colonne)

☐ Définition stratégie d'approvi. ☐ Planification

☐ Choix des produits à approvisionner ☐ Gestion des risques

☐ Suivi performance fournisseurs ☐ Elaboration des prévisions

☐ Choix des fournisseurs ☐ Négociation avec fournisseurs

☐ Gestion et contrôle des flux logistiques en provenance des pays à bas coûts

31. Si la gestion et le contrôle des flux logistiques en provenance des pays à bas coûts constituent un des rôles de la Supply Chain, pouvez-vous, précisez les différents types d'opérations ?
(Multiple)

☐ Pilotage des flux

☐ Approvisionnement

☐ Acheminement

☐ Gestion des opérations sous douane

☐ Gestion de stock

☐ Préparation commande

☐ Autre A préciser :

III- L'organisation et la gestion des opérations d'approvisionnements dans les pays à bas coûts ?

La prévision :

32. Les prévisions de besoins sont-elles échangées avec les fournisseurs ou usine(s) délocalisée(s) ?
(1 choix)

☐ Oui ☐ Non

33. Si Oui, par quel moyen ?
(Multiple)

☐ Fax ☐ E-mail

☐ Outil collaboratif ☐ EDI

☐ Web EDI ☐ Autre A préciser :

34. Comment est réalisé l'ordre d'approvisionnement auprès des fournisseurs/usines ?
(Multiple)

☐ Web EDI ☐ EDI

☐ E-mail ☐ Téléphone

☐ Fax ☐ Autre A préciser :

L'acheminement/livraison :

35. Avez-vous une visibilité sur les produits en cours de livraison ?
(1 choix)

☐ Oui ☐ Non

36. Si oui, par quel(s) moyen(s) :
(Ouverte)

37. Quelles sont les mesures préventives prises en cas de non exécution ou retard de la livraison ?
(Multiple)

☐ Stock de sécurité ☐ Acheminement Express (Avion...)

☐ Approvisionnement alternatif proche ☐ Autre A préciser :

Le pilotage des opérations :

38. Quels indicateurs de performance utilisez-vous pour évaluer vos fournisseurs situés dans les pays à bas coûts ? *(indiquez vos choix par ordre d'importance)*
(Construction en colonne)

☐ Qualité des produits ☐ Délai d'approvisionnement

☐ Respect des quantités ☐ Respect des délais contractuels

☐ Prix des produits ☐ Coût d'acheminement

☐ Respect des conditionnements

☐ Autre A préciser :

39. Avez-vous des indicateurs spécifiques de la mesure de performance de vos fournisseurs situés dans les pays à bas coûts ?

(1 choix)

☐ Non ☐ Oui

40. Si oui, lesquels ?

(Ouverte)

IV- Premiers enseignements et retours d'expérience :

41. Quels investissements ont été réalisés lors de la mise en place des opérations d'approvisionnements dans les pays à bas coûts ?

(Multiple)

☐ Investissement informatique ☐ Mise en place cellule locale

☐ Céation plate-forme de distribution / entrepôt

☐ Autre A préciser :

42. Quels ont été les impacts des opérations d'approvisionnements dans les pays à bas coûts sur la Supply Chain ?

	Augmentation	**Diminution**	**Aucun impact**
Fiabilité des approvisionnements	☐	☐	☐
Stock	☐	☐	☐
Coût logistique	☐	☐	☐
Coût de production	☐	☐	☐
Coût d'achat	☐	☐	☐
Coût de préparation des commandes	☐	☐	☐
Coût administratif lié au pilotage des opérations	☐	☐	☐
Délai de livraison	☐	☐	☐
Réactivité face aux demandes des clients	☐	☐	☐
Taux de service	☐	☐	☐
Autres (à préciser)	☐	☐	☐
…	☐	☐	☐
…	☐	☐	☐

43. Dans les années à venir, pensez-vous ?

(1 choix)

☐ Intensifier vos approvisionnements dans les pays à bas coûts

Ordre de grandeur en % : **(1 choix)**

☐ <10% ☐ 10-50% ☐ >50% ☐ NSP

☐ Diminuer vos approvisionnements dans les pays à bas coûts

Ordre de grandeur en % : **(1 choix)**

☐ <10% ☐ 10-50% ☐ >50% ☐ NSP

☐ Maintenir vos approvisionnements dans les pays à bas coûts

IV- Fiche d'identité :

44. Quel est votre poste ?
(1 choix)

☐ Directeur Général
☐ Directeur des Achats
☐ Directeur Supply Chain/Logistique
☐ Directeur des Opérations
☐ Directeur Financier
☐ Directeur Stratégie
☐ Responsable des Achats
☐ Responsable des Opérations
☐ Responsable Financier
☐ Resp. Supply Chain/Logistique
☐ Responsable Stratégie
☐ Autre A préciser :

45. Quel est votre rattachement hiérarchique ?
(1 choix)

☐ Directeur Général
☐ Directeur des Achats
☐ Directeur Financier
☐ Directeur des Opérations
☐ Directeur Supply Chain/Logistique
☐ Directeur Stratégie
☐ Autre A préciser :

46. Dans quel secteur d'activité votre entreprise opère-t-elle?
(1 choix)

☐ Automobile
☐ Aéronautique
☐ Chimie/Pharmacie
☐ Métallurgie
☐ Distribution
☐ Electronique/Informatique
☐ Textile
☐ Construction /Bâtiment
☐ Autre A préciser :

47. Quel est le chiffre d'affaires annuel réalisé (en France) par votre entreprise ?
(1 choix)

☐ < 100 millions €
☐ 100-500 millions €
☐ 500-1000 millions €
☐ > 1 milliard €