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Push and Pull Policy in Market-Driven Management

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Abstract

Push and pull policies identify the different logics that underpin the relationship between a business and its final demand. Push policy refers to the development of processes that emanate from the company and go towards the market, while pull policy refers to processes that start from the market and go towards the company.

Push and pull policies identify processes regarding project, production and distribution activities but also communication flows. This two policies differ for costs, and for their ability to adapt to the various competitive dynamics.

In global dynamic markets, in over supply conditions, push and pull policies can be integrated to maximize the advantages of scale and the competitiveness of fast and personalized market reactions.

Keywords: Push Strategies; Pull Strategies; Global Competition; Intangibles; Market-Driven Management

1. Push and Pull Corporate Strategies

Push and pull corporate strategies identify two solutions, which tend to be presented as alternatives[1], and are applied to the different logics that underpin the relationship between a business and its final demand.

A push strategy refers to the development of processes that emanate from the company and go towards the market: the company invents, develops and proposes a product that is destined to find purchasers. Supply is therefore sustained by the company.

A pull strategy is the opposite, because it refers to processes that start from the market and go towards the company: demand requests supply and 'pulls' it out of the company. We could say that the market stimulates the needs that prompt the company to develop a particular product, which emerges as a response to the pull action of demand.

In this sense, the two strategies are alternatives, because they are founded on very different market assumptions (the characteristics of demand, of competition, of the

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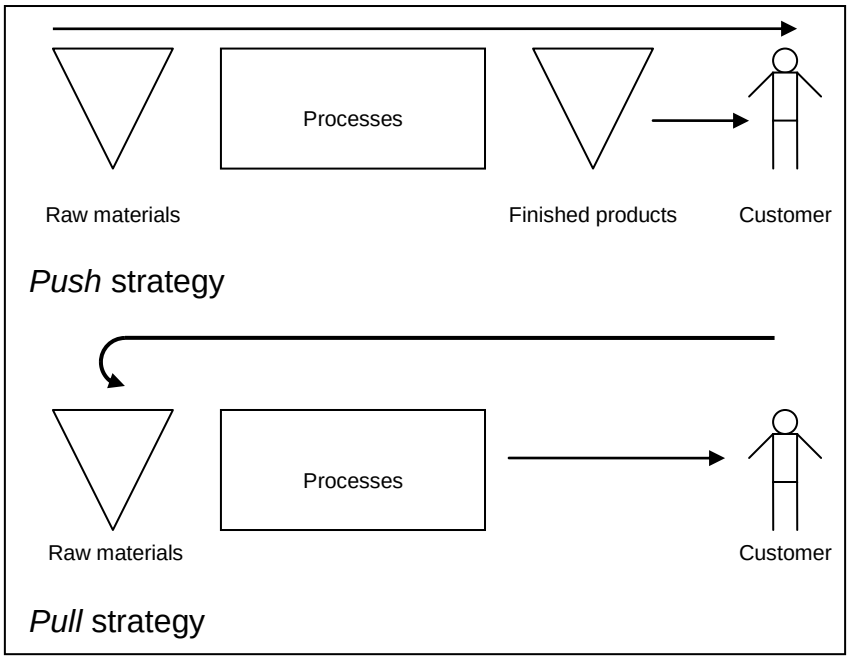
financial system, of the supplier system, etc.) that require very different capabilities and resources from companies. Push strategies presuppose comprehensive knowledge of the market, of the needs of its major players (demand and competition) and of their dynamics. This then makes it possible to plan in advance the corporate activities necessary to perform all the processes oriented to the realisation of a product that allows a company to strive to achieve good commercial results.

The premise for application is therefore a stable context, in which corporate processes (for example manufacturing, communications, etc.) can be reiterated successfully. Push strategies base their competitiveness on accumulated experience, which is built up by repeating the same actions in time, and on a wide range of activities which a stable context makes it possible to organise and exploit. In a push situation, economies of scale and of experience can be achieved, developing rigid but very competitive cost structures, when competitors are not in a position to do the same.

Figure 1: *Push Strategy and Pull Strategy*



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Pull strategies are based on the opposite premise. The company is not able to develop comprehensive knowledge of the market and its players, which are characterised by the changeability and dynamism of their actions and needs. Planning corporate activities is therefore a very risky business and cannot be performed for very long periods of time. The premise for application of pull strategies is therefore an unstable context, in which the same corporate processes cannot be reiterated successfully. Corporate competitiveness is not founded on the development of rigid cost structures that are gradually reduced over time: the

competitive force of pull strategies therefore lies in their ability to respond to the market and in rapid action. Experience in manufacturing and communications is not built up, but experience is developed in flexible responses, both with regard to manufacturing processes, and to information and communications. The competitiveness of pull solutions lies in the ability to respond before the competition to the changing needs of demand, and this applies both to material flows and to flows of information and communications.

It is therefore clear that push and pull strategies are not exactly alternatives for corporate management, because they are founded on entirely different competitive premises: each corporate process may be developed according to a push or pull solution, according to the conditions and the corporate skills that characterise the application context.

From the above, it would appear that for the sectors that experience very high levels of competitive intensity (for example, as we see today all over the world, in the case of clothing or cars), only pull-type strategies should be applied, in view of the impossibility of long-term planning and the accentuated dynamism of competitors and demand. But this does not happen because, as we stated earlier, the type of push or pull strategy must be identified on the basis of the specifics of each corporate process. The result is that, in a single company, two opposing logics can be applied to adjacent processes: a push strategy to some, and a pull strategy to other, directly connected processes.

The combination of push and pull strategies allows the advantages of the two approaches to be combined, with different degrees of rigidity and flexibility (structures, costs and relationships), in order to respond to demand sooner and better than competitors, in other words orienting corporate management to the market (Market-Driven Management).

In fact the competitive tension typical of today's global markets, which translates into a search for ways of minimising the cost of corporate activities, while maximising the competitive advantage of each activity, postulates that companies should know how to combine the advantages of management strategies founded on scale and experience (fundamentally of the push type, planned well in advance and aimed at minimising all the characteristic costs) with strategies based on flexibility and reactiveness (like pull strategies, which cannot be planned in advance and are characterised by the continuous selection of activities with a high competitive value). Push strategies are therefore applied for activities that can be reiterated, and pull strategies for activities that must make the company reactive and flexible, as a modern Market-Driven approach to corporate management demands.

But a Market-Driven approach is not limited to summing the two strategies by combining the two on the basis of individual processes, but imposes a form of integration that can take into account the competitive value of the various corporate processes, trying to optimise their implementation in relation to costs (fixed and/or variable), timeframe (time-based management) and method (rigidity and flexibility). This is how we should interpret a decision to merge or demerge companies, the creation of more or less long-term partnerships with third parties, and the development of networks that may have changeable conformations, establishing both stable relationships and others that are very dynamic and variable, in terms of the subjects and processes involved[2].

□ *'In the context of its global development plan, the CNH Group implements relations with local and global partners – with the option of changing them subsequently, if market trends suggest that this is necessary or advisable. The alliance system includes cooperative relations with companies both upstream and downstream (vertical relations), and relations with competitive companies.'*[3]

2. Push and Pull Strategies and Technological Evolution

The critical aspect for corporate governance clearly lies in determining the position of the so-called decoupling point in relation to continuous corporate processes (manufacturing, information and communications). This point is where the push strategy meets the pull strategy, i.e. the moment when planned activities characterised by a specific risk profile (push) gives way to responsive activities with a different risk profile (pull). The starting point of a pull strategy is the customer order, with the result that, in logistics, the decoupling point is often known as the Customer Order Decoupling Point[4] and identifies the point at which the customer order 'enters the company', creating a specific dedicated production or assembly process[5]. In practice, it determines the moment from which corporate activities focus on the customised response to the order received. This point is very critical in the context of logistic activities, because it defines operative materials handling methods (stocks, manufacturing, assembly, etc.) and determines the emergence of specific costs dedicated to each order received.

With an approach that favours push activities, the decoupling point should be postponed as much as possible[6], deferring in time (and often also in space and responsibility) the activities necessary to fill a specific order. This solution would make it possible to avoid taking some risks inherent in relations between the company and the market (insolvent customers, changes to ongoing orders, etc.). For this reason, the postponement criterion is one of caution and an invitation to protect oneself in the execution of every process to keep response to demand very versatile. In many businesses, shifting product customisation downstream certainly makes it necessary to introduce important changes in the manufacturing process upstream, so as to take the product further along the supply chain in a more generic form, introducing customisation (for example, assemblies, colouring, etc.) at a later date.

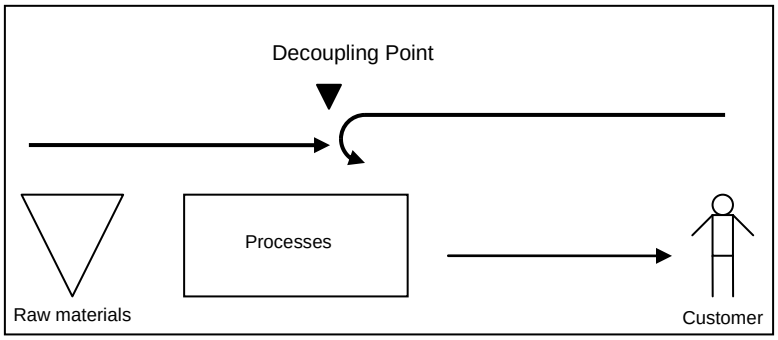
□ *The Smart, a city car that has been popular since the late 1990s, is built by a reactive supply chain, structured with a complex system of suppliers and sub-suppliers, which enables Micro Compact Car Smart Gmbh to minimise any manufacturing activities performed in-house (reduced to 6%) and to boost the assembly system of parts produced by third parties with synchronised production and deliveries, thus significantly reducing stocks of both finished products and parts, and responding more rapidly to market requests (with a limited number of alternatives). The assembly starts from two basic models: one with a grey chassis and the other with a black chassis, which envisage very few differentiating accessories (e.g. air conditioning, CD player, etc.).*

The bodywork (bonnet, doors and tailgate) is assembled directly on the end customer's order, sometimes right at the dealership[7].

On the other hand, the decision to postpone the decoupling point, putting off giving a specific reply to an order, imposes other costs on businesses, for example those related to stocks of finished products or parts for assembly. The more the decoupling point is brought forward, in other words the more manufacturing and goods handling activities are dedicated to filling a specific order, the less necessary it is to build up stocks. Advancing the decoupling point along the manufacturing and goods handling process therefore has the effect of anticipating the customisation of activities, reducing the need to create *potential* flexible conditions, because the latter are already *in place*. The decision to advance the decoupling point has the effect of transforming what are normally indirect costs into direct costs, until it is no longer possible to incorporate them into the response to a specific customer. Logically and chronologically anticipating the point at which these costs are addressed to satisfying a particular customer, reduces the need to maintain the availability of goods, human and manufacturing resources, destined generically to guarantee flexibility and reactiveness to unpredictable market response[8].

Typically, push strategies are suited to the first processes, i.e. to those that are performed first in the value chain, while pull strategies are more suitable for the later processes, i.e., those that put the company in touch with its market (Figure 2).

Figure 2: *Push and Pull Strategies and Decoupling Point*



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Identifying the decoupling point looks simple for tangible processes associated with manufacturing activities, but is not as simple for information and communications processes, for which the characteristic intangibility and the availability of advanced ICT technologies make it possible to alternate push and pull strategies more flexibly in relation to the chronology of individual processes. In fact, push and pull strategies allow corporate processes to be put in place related to activities that imply the management of both assets (from raw materials to finished products) and of intangible elements such as corporate information and communications. Where the management of tangible assets is concerned, this refers to the flow of materials along the supply chain, in other words to all the

processes that extend from procurement of materials and components to their introduction and transformation in the manufacturing process (for manufacturing companies) or distribution process (for marketing companies), right down to delivery of the finished product to the last link in the chain (intermediate or final demand). Where the management of intangible flows of corporate information and communications is concerned, these can be treated in much the same way as tangible asset flows. In fact, the close link that is established between flows of information, communications and assets allow them to be analysed jointly and, often, using the same logical analogies. In fact, in real supply chains there are at least two decoupling points. The first is the one referred to previously, the decoupling point of the materials, where strategic stocks are maintained as generic as possible. Ideally, by traditional economic criteria, this point should be as near to the end of the supply chain as possible, close to the end market. The second decoupling point is the information point which should be as far up the supply chain as possible: in other words, the highest point at which the information on actual final demand penetrates the supply chain[9].

The decision to move this decoupling point as far upstream as possible along the supply chain derives from the need to keep the effects of the information distortion characterising the flow of information in supply chains to a minimum ('bullwhip' or 'Forrester' effect[10]).

Every tangible asset flow is associated with numerous information flows[11]. On one hand, the flow of materials is similar to that of the information related to the tangible assets processes (information linked, for example, to procurement, storage, production and/or assembly, shipment and delivery, etc.) referred to the many activities performed on the assets indicated and thus regarding the value and state of the goods, as well as the subjects and relations developed with them (for example, the types of contracts activated for procurement, for outsourced operations, etc.). On the other hand, every flow of goods is also associated with plenty of information that flows in the opposite direction to the goods, in other words confirming the activities that have taken place. These flows can be used to check goods movements, for example with regard to a supplier's punctuality, the precision of a machine in the manufacturing process, a haulier's reliability, and so on.

A flow of materials and information therefore also accompanies flows of corporate communications, instrumental to the movement of materials and information. Relations between a company and the third parties that operate with it (for example contractors, suppliers, customers, etc.) need specific, dedicated communications, which can be activated in different ways and with goals that can vary (for example personal communications between salesmen and customers). The system of communications flows (internal, obviously) put in place by the company is extensive, even for activities performed inside the company, to meet organisational needs, like managing deadlines and means of storing and processing goods, accounting systems, etc., or to motivate personnel to adopt specific behaviour. Even external communications flows for commercial purposes (for example advertising, or sales promotion) are strictly instrumental to the simplification of goods movements, because they aim to affirm the company's image and notoriety on the market, in order to stimulate and sustain interest in demand (intermediate and final) in relation to competitive alternatives.

The potential for mutual support between flows of goods, information and communications is made broader and more significant for corporate management by technological development, with regard to both manufacturing technologies, and information and communications (ICT). Companies have always focused considerable attention on technologies related to manufacturing processes and handling of the necessary goods, in relation to the vast possibilities for qualitative and quantitative increases in productivity and the cost abatement that can derive from them. The application of digital technologies has played a particularly important role in processes linked to flows of tangible materials, like those linked to communications and information in particular, making it possible to create immediate relations between flows which, although logically connected, were always entirely separate in terms of the possibility of detection and control. For example, manual warehouse management, now often replaced by technologies such as RFID, which uses radiofrequencies to detect goods (with all their distinctive features, such as size, batch, deadline, etc.), or manufacturing systems that are controlled by electronic systems that replace the human being in dangerous activities, but do not prevent him from intervening and piloting the process remotely. Or electronic picking in the warehouses, and the signals on which vendor managed inventory (VMI) systems are based, allowing suppliers to manage stocks of their own goods on a customer's premises by partial sharing of the database to control and optimise supply flows.

The development of these technologies has evidently significantly increased the quantity of information flows generated by these tangible assets but has also developed the tools to manage them, encouraging real-time controls of the physical processes and establishing the basic conditions for the corporate reaction typical of a pull approach to the market.

This is why pull solutions to manage flows of tangible and intangible assets have become alternatives that are actually applicable by companies, partly to replace and partly to supplement push solutions. Where goods flows are concerned, this explains the significance of the passage from a push strategy to a pull strategy (decoupling point), identified along the logical and temporal continuation of activities along the supply chain, in relation to competitive opportunities and available capabilities. It also makes it possible to alternate the decoupling point for intangible flows of information and communications more flexibly, with respect to which ICT technologies pave the way for the development of simultaneous push and pull solutions in relations with the market.

□ *Online advertising is normally the effect of combining push and pull communications flows. The former refer to the development of banners and buttons, while the latter originate from the route of the receiver who surfs the web searching for specific communications and information by clicking on banners or buttons.*

□ *A push flow of information is based on field-type market research undertaken by interviews, for which painstaking desk planning activities must first be performed, then the interviewees are identified and contacted, the interview is conducted, and the replies classified and entered in the corporate information system. Research carried out by*

online questionnaires combines push flows (the web page and method of contacting the interviewees) with the pull system of self-selected and thus voluntary replies by the respondents.

What is more, the principal characteristic of digital flows of communication and information lies in the possibility of channelling two-way flows from the issuer to the receiver and vice versa[12]. Any communication activity developed with digital technologies can envisage the return of information from the receiver to the issuer, even in an extremely simplified form (for example, a simple message receipt acknowledgement), which may have a high value for corporate management in terms of monitoring the effectiveness of any action taken.

As a result, push strategies with a one-way, obligatory linear flow of goods and information, combined with pull strategies in which the linear nature of the information moves in the opposite direction to the flow of goods, but still remains one-way, are giving way to a diversified system of relations between players, sustained by a free exchange of information, based on a circular model[13].

The application of IT to the management of flows of goods and information and corporate communication has therefore made it possible to apply pull strategies where traditionally only push type strategies could be used.

□ *Some carmakers have developed a so-called 'configurator', which they first gave to their dealers and then put on the Internet. This software allows a potential customer to choose a car by combining a range of alternatives (engine size and type, interior colours and materials, body colour, various accessories such as a navigator, type of audio system, etc.) and to view the final price immediately. This solution allows the customer to decide what type of car he wants, and allows the manufacturer to assess the most frequent requests, but also to produce the model requested directly, if the inquiry leads to an actual purchase*[14].

The combination of push and pull strategies has significant consequences in relations with the market, providing immediate confirmation of the effectiveness of a company's proposals, but also inside the company, or in the network of companies involved in the supply process, because it steps up the processes to verify internal and external efficiency.

On one hand, the feedback that the company receives by adopting a pull strategy, reveals the market response immediately, making it possible to identify potential contexts for reiterated replies (in other words, which allow push strategies to be adopted) or the need to step up pull type solutions (responsive and flexible). On the other hand, regardless of the market response, push strategies are traditionally associated to the maximisation of internal efficiency controls, as we saw in the last century in Japanese manufacturing companies (particularly in the textile and automotive sectors) which were the first to apply the integration of push and pull strategies to flows of goods, information and communication on a vast scale, initially in relation to their own manufacturing processes, and then more extensively to relations with suppliers and distributors.

3. Push and Pull Strategies in Corporate Management

Manufacturing activities have always adopted pull or push strategies depending on the context: the first activities undertaken to hunt for food and shelter for nomadic populations and the first forms of production by sedentary individuals, were certainly of the pull type, driven by the need for food and shelter. However, with the development of mass production in the second industrial revolution, we can observe the programmed application of a push type strategy: by coordinating suitable resources, businessmen set up manufacturing processes on a vast scale, able to produce consistent quantities of goods to be placed on markets where demand was a long way from saturating most of its needs.

In this context, the strategy that guides the production and marketing of products is of the push type: based on knowledge of the general needs of demand, large quantities of goods are produced at decreasing cost thanks to the significant economies of scale and experience that can be achieved, and they are marketed at a low cost, to attract large crowds of purchasers.

The development of a push strategy is therefore the result of the operating application of *scientific management* [15] to a company's manufacturing and organisational processes (take the example of the production of Ford cars in the U.S.A. in the early 1900s); this extends the development of push logics, opening the door to continuous improvement in terms of the efficiency of the manufacturing process.

Market stability (demand and competition), which is a characteristic of the competitive conditions in which mass production has established itself, makes it possible to analyse demand and to set up manufacturing activities with a logic that favours long-term programming, whose final goal is always that of improving efficiency and maximising a company's results.

When this stability fails, and it becomes less easy to predict the reaction of demand, as a result of competition trends on the markets, companies start to search for flexibility and the capacity to react. This happened in the 1970s in the world car market, when the Japanese carmaker Toyota achieved success thanks to its ability to combine the efficiency of large-scale manufacturing and accumulated experience with the flexibility of a manufacturing system that was able to respond rapidly to market requests, applying an approach that highlights pull type strategies.

Stability and instability due to a market's competitive dynamics cause companies to find solutions to resist competitive confrontation, applying varying combinations of push or pull strategies, to respond to the market sooner and better than competitors. However, as the case of the automotive market mentioned earlier underlines, it is not sufficient to observe an unstable competitive context in order to apply a pull-type strategy profitably. The level of technological development that can be introduced into corporate processes is also very significant, from manufacturing to information and communications.

In fact, compared to manufacturing processes, the Japanese answer to U.S. domination of the car market in the 1970s was the fruit not only of different organisational logics, but also of manufacturing facilities founded on innovative technologies, operating with greater flexibility (for example, assembly lines capable of turning out smaller runs, which could be halted when the first defect

appeared, thus significantly reducing product defects, with set-up times cut to only a few hours and in some cases to a few minutes, etc.)[16]. Where ITC processes are concerned, the advent of digitalisation introduced the resources and instruments that have made it possible to apply pull strategies alongside push strategies and even instead of them.

In fact, the possibility of choosing between a push strategy and a pull strategy always depends on both the competitive conditions of stability/instability of demand, and therefore on the degree of predictability of the context, and the actual availability of technologies that allow the two strategies to be applied and integrated.

3.1 Scarcity Economies

We know that in scarcity economies demand exceeds supply, particularly for the quantity of goods required. The distance from the level of demand saturation puts supply in a position to control the market by defining the quantities introduced and, therefore, their selling price. In this competitive condition, market dynamics are the fruit of supply actions that are organised to maintain the position of control of the overall system (control of supply, through the detention of almost monopolistic positions, even by developing suitable agreements, and control of demand, by rationalising the quantities supplied)[17].

The qualitative aspect of the goods offered, in other words, their degree of differentiation, is entirely irrelevant to purchasers' choices, since demand is a long way from saturation and well before demanding products with definite characteristics, it demands products in quantities suited to its requirements. This condition is expressed by the system to supply fuel for motor vehicles, which are obtained by refining oil. Both the global supply of oil, and that of refining processes are controlled throughout the world by a small number of organisations that can determine the quantities produced (which usually coincide with the quantities sold) and delivery times. Because oil and fuels are irreplaceable as a source of energy in general, and for transport in particular, demand reveals a price rigidity that makes it possible to keep consumption stable even if prices grow rapidly, as we have seen all over the world in recent months where consumption of oil and its derivatives is concerned.

In this manufacturing context, in view of the extreme predictability of demand and of competitors' behaviour that stems from the overall stability, oil extraction and refining companies make long-term plans based on push-type strategies. Their installed capacity to extract and refine oil does not depend on the level of demand, which is far superior to the supply delivered, but on dimensions linked exclusively to the supply (for example, the availability of concessions and the intention to invest). The accumulation of stocks of raw materials or finished (refined) products by both the producing companies and the main customers (for example, energy producing companies and governments), and the rational disposal of supply, when the market reaches set price thresholds, proving that production does not react to market requests, are typical of this market.

Supply decisions based on extraction and refining capacity depend on the achievement of significant economies, guaranteed by the choice of the scale of production, the saturation of facilities and, obviously, the experience that comes

from accumulated production over time. The application of a push strategy that presupposes knowledge of the market is based in this case on the certainty of growing market demand that enables and justifies rigid, high-risk investments such as the purchase of oil concessions even in complex political contexts[18], and the development of output capacity that is generally undersized[19] in relation to market requirements.

In scarcity economies, understanding of demand, but above all the capacity to govern supply, make it possible to adopt push strategies, while the stability of the context guarantees the time necessary to exploit rigid production structures, based on long-term planning.

However, pull strategies are also taking hold in this sector, particularly with regard to the way companies manage information about the market. The spread of initiatives to promote customer loyalty to a brand by the distribution of electronic reward cards, is also designed to manage a complex system of marketing information regarding demand and consumption habits all over the territory. By collecting this information, which is provided voluntarily in order to obtain a benefit normally associated with a discount, companies obtain targeted, comprehensive information flows (the customer, his basic socio-demographic and economic profile – at least regarding methods of payment, and amounts with a single fuel supplier, consumption, type of fuel, location, and movements in time) which can be used to develop relations with the market to determine the price and to maintain conditions of scarcity, while maximising the potential of each station.

3.2 Controlled Competition Economies

In economies with controlled competition, where demand and supply tend to be levelled off by a competitive system that plans supply in response to global demand that is close to saturation, the substantial stability of the main market dynamics allow push logics to be applied, even if they are combined with awareness of the usefulness of developing pull strategies.

In fact, in these competitive contexts, intermediate demand plays an active role between final demand and supply, filtering relations between demand and supply, and introducing distortions of quantity, timing and above all information.

Supply, which is capable of predicting overall stable demand, can promote investment in manufacturing rigidity according to a push strategy. Intermediate demand absorbs the quantities produced according to predictable patterns, and undertakes to promote them on the end market, adapting its purchasing and stock management system to phenomena such as seasonal cycles and competitive opportunities. Push strategies therefore cause supply and intermediate demand to search for cost minimisation conditions as the scale of activities increases (due to the phenomena of supply concentration) and experience develops.

However, to guarantee the stability of selling/purchasing relations, in other words, to ensure that on one hand distributors continue to look for specific products to market, getting supplies from specific manufacturers, and, on the other, that customers can continue to purchase from specific points of sale in search of specific brands, pull strategies take hold, focusing corporate initiatives on the manufacturer's and distributor's brands.

So manufacturing firms invest both in supply relations with intermediate demand, and in 'direct' relations with end demand, by developing Brand Equity which, conditions being equal, becomes the central paradigm of competition. The purpose is to ensure that a place on a distributor's shelves is determined by push strategies of convenience for manufacturers and distributors, but also by pull strategies in which demand itself plays an active part in the request for a specific brand. This situation is typical of different business in the global markets, like that of smoke products (cigarettes in particular) and industrial beers, in which the suitable combination of push and pull strategies guarantees manufacturers a place on a distributor's shelf.

On the other hand, distributors also activate push strategies to manage procurement, to choose references and organise warehouses, and at the same time they promote pull strategies to increase customer loyalty in order to maximise store loyalty and to guarantee the rotation that helps to support the rigidity due to strategic push decisions.

In the context of controlled competition companies therefore find themselves in a condition to analyse the push/pull dilemma and, usually, the manufacturing processes operate according to push strategies, supported by information systems that reveal stable market behaviour, while brand communication processes (advertising and sales promotion) help to strengthen demand loyalty with its requests for specific products with precise intangible characteristics, and support pull strategies to balance the system.

However, the purpose of combining pull and push strategies in these competitive contexts is to increase the stability of the system, rather than to manage its variability. In fact, control of the competition that develops in the system on the part of offering companies derives from the intense orientation to demand, and the development of all the techniques and activities that make it easier to understand it and predict it. Marketing develops in contexts of controlled competition and, with it, market research increases and focuses on the causal research of the market's reaction to measures taken by businesses regarding products, prices, communications and distribution.

By controlling demand and ensuring that market share is controlled according to relationships that are designed to last, companies ensure the overall maintenance of conditions of competition to achieve stability in the system.

In this sense, pull strategies that are applied in these markets are designed to establish conditions for the development of push strategies: the substantial lack of homogeneity of the subjects that make up demand with regard to possible expectations must be managed by companies, in order to bring unity and above all predictability to a system that could become too variable if supply allowed it to. The result is marketing initiatives to underline the differentiation of supply constantly and continuously, in order to address the development of demand requests, and to plan the variability of the pull system.

> □ *In the industrial beer sector in Italy, corporate external communications are primarily managed by recourse to three tools: advertising, sponsorship and information channelled by single-brand pubs. Overall expenditure on advertising is governed by the brewers' system of allocating precise shares of their sales (4-6%), stably over*

time, according to a criterion of substantial competitive balance. Companies that also choose sponsorship have chosen specific events with which they tend to associate their names in time, always maintaining continuous relations. And finally, availability in single-brand points of sale represents the final link in the communications chain that allows brewers to develop a contact and a flow of direct consumption with final demand, so as to govern communications and information flows (cf. S.M. Brondoni, M. Corniani, Corporate Communications Project, ISTEI, University of Milan-Bicocca, 2007).

3.3 Over-Supplied Economies

Conditions for the successful integration of push and pull strategies are rife in over-supplied economies[20]. The instability typical of these contexts, determined by variable demand that responds to the proposals of very competitive, dynamic supply reduces the application space for push strategies and favours the need for pull-type measures.

Responsiveness to market dynamics and, therefore, to the needs of demand accustomed to falling prices and greater supply variety, becomes essential for corporate processes. The supply networks therefore have to know how to combine supply variety with stable flows of tangible assets (purchases, output, etc.). The goal is to respond very rapidly and responsively to the market, and at the same time to minimise the costs associated with management of flows of tangible assets, communications and information, to obtain margins that can support global competition.

Deciding the best position for the decoupling point with relation to flows of assets or of information and communications becomes very important, because it can influence the competitive potential of every network. In fact, identifying a specific solution for the change from a push strategy to a pull strategy is certainly a consequence of the context (stability, competitiveness, technological evolution, etc.) but it also has considerable implications for all corporate management processes.

□ *'Dell became the master of the vertical distribution channel, because it was the sole distributor of its products and services (Dell and Fedman, 1999)*[21]*. A customer starts the selling process by contacting the company on the telephone or the Internet. There are three selling channels: personal, telephone and digital. A customer can order from Dell online 24 hours a day or by telephone from early morning until late evening, and a Dell representative will offer advice and help the customer to choose the best system to meet his needs. On the website, customers can access information about products and know the price immediately. Dell then confirms the order and checks the financial solvency. The representative usually guarantees that the computer will arrive within five working days, even though the customer often receives the product sooner. Dell manufacturing plants receive a printout of the order and start production within a few hours. After a final check, the computer is packed by Dell and sent to a*

distribution centre that delivers it so that it arrives together with the video prepared previously by a separate supplier.[22]

In particular, one of the critical aspects of a decision to move the decoupling point upstream can be associated with control of the economic character of individual flows. The greater the space dedicated to pull-type flows, the greater the risk of losing control of the process and its economy. In fact, pull-type flows presuppose direct intervention by the client, who decides when and how to move it, whereas in push flows, all the possible variations of the system are planned in advance, limited and therefore controllable by a set process whose economic character and possible evolutions, are known in advance.

With a pull logic, on the other hand, the flows are activated in response to stimuli from the market and, the lower the level of integration with stages upstream of the company's value chain, the lower the degree of economic control possible. In practice, pull flows can be extremely effective if they integrate perfectly with a value chain that is able to respond suitably to their variations.

The application of integrated push/pull solutions demands huge investments from companies, not only to set up the processes managed from a pull viewpoint in relation to the market, but also and above all in the processes that precede them in the value chain, which must be able to combine economy and flexibility[23]. The network replies of the many supply systems fall into this context, with the result that it is often stated that competition in global over-supplied markets is not exactly active between companies but rather between supply chains[24].

Corporate information systems have taken great impulse from the spread of digital technologies and, in particular, it has been possible to apply pull type strategies to information gathering [25] thanks to the spread of low-cost high-penetration mass communication tools, such as the Internet, cell phones, etc. among the world population of developing countries. A user can choose whether to register with a specific Internet site, consenting to be profiled. He provides various types of information and enriches the information system of the company that has developed the tool. However, the fact that it is the user who is the active subject in the process, ensures that the company loses control over the times and means of entering this information. When information is collected on the basis of a push strategy, this exploits methods that are defined entirely by the company that selects the interviewee and the sources to consider, and the times and means of collecting the information, thus controlling the information process. Information collected using pull strategies is very effective where costs and response times are concerned, but cannot be controlled or predicted by the company.

□ *For example, like many Internet sites, Amazon.com, the well-known online book shop require users who want to purchase to register, providing some basic information on which a preliminary customer profile is drafted. For each user registered, the site associates the IP address with which he connects, i.e. the number that identifies the computer with which the user surfs the web. By this association, every time the same machine connects to Amazon.com the system recognises it, associates the user registered and adds to his profile by plotting the user's behaviour. To obtain information and to update the profile, the*

system automatically proposes offers and asks the user to comment on them, thus increasing its knowledge of the subject and his utility in relation to the company's offers. This process to collect information, which is certainly of the pull type, can only be controlled partially by the company. For example, no one can tell whether the person surfing with a particular IP address is the registered user or another user who has access to the machine; and although it proposes attractive offers, the company cannot guarantee that the use will connect when it needs him to, to update the database, nor that, when connected, the user is prepared to respond to the stimuli that are addressed to him personally.

Even with regard to corporate communications flows, push processes are more easily controlled than pull processes, because they are completely governed by the issuing company in terms of content and appearance times (therefore often with respect to overcrowding). Because it is requested by the receiver, any information distributed on the basis of a pull strategy depends on the latter's needs, in terms of both times and of the quality and quantity of the communications spread. In this case too, the application and spread of digital technologies has enabled companies to implement pull processes which, without these technologies, could only be implemented to a lesser degree and at a much higher cost (for example through personal sales, call centres, etc.). However, the technologies and their activities, which are independent of temporal constraints, underpin the limited amount of control that can be exercised on these communications. In fact it is impossible to plan if and when a user will ask for a communication (for example by "clicking" on the button of an online advertising campaign), just as it is impossible to know if, once he has chosen to "click" and therefore to look for information, the user will continue in the direction the company wants or surf in a different direction, even exiting the site suddenly.

Because they have a profound influence on global ITC systems, digital technologies have caused significant evolutions even in all the other areas of corporate management. The integration of push/pull strategies in manufacturing, logistic and consumption processes is the evident result of a system of push and pull strategies applied to the intangible flows that are developed in corporate information and communications. In fact, there is no movement of materials that does not develop specific flows of communications and information in a consistent, coordinated way. These in turn can be driven by the company (or pursued directly by the company in a push logic) or acquired by the company for an action that originates from the market (therefore of the pull type). The possibility of integrating these flows and the availability of advanced tools and technologies that allow companies to achieve incredible levels of flexibility and responsiveness, have enormously expanded the available alternatives, increasing decision-making complexity and the contexts for the development of competitive advantage. Today, working with low costs, with very short deadlines, giving customised replies to customers and, at the same time, maintaining control over the economy of operations, is a condition shared by numerous industrial, commercial and service sectors, and constitutes the basis of competition in global markets where competition is extremely intense. The integration of push and pull strategies in corporate management has reduced the gap between businesses founded on the

scale of activities and businesses based on reaction to the market, demanding from companies a radical rethinking of their tangible and intangible processes to keep in step with the competitor system that constantly raises the critical threshold of competitive advantage.

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Notes

[1] Cf. for example, the push/pull dilemma in marketing strategies, regarding the alternative of promoting products on the market, or stimulating demand for the product. In this sense, push and pull appear to characterise different strategic approaches to relations with intermediate and final demand, thus involving corporate marketing (including marketing communication), and selling processes. With regard to push and pull strategies, for example, in relations with intermediate demand and therefore with reference to different levels of utilisation of the selling force and advertising communications, cf. S.M. Brondoni, Ouverture de 'Marketing Research and Global Markets', in *Symphonya. Emerging Issues in Management* (*symphonya.unimib.it*), no. 2, 2003,.

Another context in which the distinction between push and pull is applied extensively, is that of corporate innovation, in which push-type innovation strategies identify innovation originating from a company's distinctive capabilities, which must be explained to the market in order to be introduced there and to produce profit for the company. In the second case, that of pull-type innovation strategies, it is market needs that 'pull' the innovation developed by companies, stimulating the latter to find ways of improving their response to the needs of demand. Among others, cf. J.J. Lambin, *Changing Market Relationships in the Internet Age*, UCL- Presses Universitaires de Louvain, Louvain-la-Neuve, 2008, pp. 28-29.

[2] Cf. S.M. Brondoni, 'Market-Driven Management ed economia d'impresa globale', in S.M. Brondoni (ed.), *Market-Driven Management, concorrenza e mercati globali*, Giappichelli, Turin, 2007, pp. 19-63.

[3] See M.E. Garbelli, 'Localizzazione produttiva e mercati globali. Il caso CNH Case New Holland', ch. IV in M.E. Garbelli, *Localizzazione produttiva e dinamiche competitive*, Giappichelli, Turin, 2004, p. 138.

[4] The *decoupling point*, or *Customer Order Decoupling Point*, is traditionally defined as the point on the manufacturing value chain at which the product is linked to a specific customer order, J. Olhager, 'Strategic Positioning of the Order Penetration Point', in *International Journal of Production Economics*, no. 85, 2003, pp. 319-329. Cf. among others, P.G. Brabazon, B. MacCarthy, 'Order Fulfillment Models from the Catalog Mode of Mass Customization – A Review', in T. Blecker, G. Friedrich (eds.), *Mass Customization: Challenges and Solutions*, Springer, New York, 2006, pp. 211-231. The authors also introduce the concept of floating decoupling point, explaining that 'The key feature of order fulfillment systems [where the fulfillment is organized from several process points] is that products can be allocated to orders at any point along the process, hence the coining here of the term *floating decoupling point*. This structure is observed in the capital goods sector but is being adopted elsewhere including the automotive sector', p. 221.

[5] 'The position of the decoupling point is determined primarily by the trade-off between the required delivery and throughput times. If the required delivery times are short compared with the throughput times of the procurement and manufacturing process, there will be a tendency to move the decoupling point downstream (to the right); if the specified delivery times to the costumer are relatively long and the demand is very specific or irregular, there will be a tendency to move the decoupling point upstream (to the left). The outcome of this trade-off is one of the most important of business decisions; it forms the basis for the whole logistic organization and for the planning and control of the goods flow', see S. Hoekstra, J. Romme, *Integral Logistics Structures: Developing Customer Oriented Goods Flows*, McGraw-Hill, London, 1992, p. 8.

[6] 'Postponement entails delaying the actual commitment of resources to maintain flexibility and delay incurring costs', see I. Manui, J.T. Mentzer, 'Global Supply Chain Risk Management Strategies', in *International Journal of Physical Distribution and Logistics Management*, vol. 38, no. 3, 2008, pp. 192-223, p. 206 and the reference to the types of postponement, 'Form postponement includes labelling, packaging, assembly and manufacturing. Time postponement refers to the movement of goods from manufacturing plants only after customer order are received', proposed by W. Zinn, D.J. Bowersox, 'Planning Physical Distribution with the Principle of Postponement', in *Journal of Business Logistics*, vol. 9, no. 2, 1988, pp. 117-136. Among leading authors writing about this issue, cf. W. Alderson, *Marketing Behaviour and Executive Action*, Richard D. Irwin, Homewood, 1957; and L.P. Bucklin, 'Postponement, Speculation ad the Structure of Distribution Channels', in *Journal of Marketing Research*, vol. 2, no. 1, 1965, pp. 26-31, who also presented the opposite alternative to postponement, i.e. speculation (also known as selective risk taking) which is identified as a 'demand-side risk management strategy' which represents the alternative opposite to postponement: 'the principle of speculation holds that changes in form, and the movement of goods to forward inventories, should be made at the earliest possible time in the marketing flow in order to reduce the costs of the marketing system' (p. 27). For other types of postponement, cf. B.C. Jespersen, T. Skjøtt-Larsen, *Supply Chain Management – in Theory and Practice*, Copenhagen Business School Press, Copenhagen, 2005, p. 58. Numerous authors address the fear of taking too many risks with the implementation of excess customisation: 'market responsive processes can be built by decisively deploying excess manufacturing capacity and significant buffer stocks of goods, by investing aggressively in ways to reduce lead time, by selecting key suppliers primarily for speed, flexibility and quality, and by utilizing modular product

design in order to postpone product differentiation for as long as possible', see J. Collin, D. Lorenzin, 'Plan for Supply Chain Agility at Nokia. Lessons from the Mobile Infrastructure Industry', in *International Journal of Physical Distribution and Logistics Management*, vol. 36, no. 6, 2006, pp. 418-430, p. 421 and M.L. Fisher, 'What Is the Right Supply Chain for Your Product?', in *Harvard Business Review*, March-April, 1997, pp. 105-116.

[7] Cf. G. Spina, *La gestione dell'impresa*, Etas, Milan, 2006, pp. 602 and 621.

[8] On the question of the types of risk taken depending on the position of the decoupling point in the logistic process, cf. S. Hoekstra, J. Romme, *Integral Logistics Structures: Developing Customer Oriented Goods Flows*, cit., p. 8 and following.

[9] Cf. M. Christopher, D.R. Towill, Supply Chain Migration from Lean and Functional to Agile and Customized, in *Supply Chain Management: An International Journal*, vol. 5, n. 4, 2000, pp. 206-213.

[10] Cf. J.W. Forrester, *Industrial Dynamics*, MIT Press, Boston, 1961. The 'bullwhip' or 'Forrester' effect refers to the information distortions that are developed in relation to the important values of the logistic system (orders, estimates, volumes and times), for which activities farthest from the market in the supply chain reveal volatility and larger 'rumours' than those closer to the market. The Forrester effect therefore translates into a growing breadth of perceived demand which determines variable and irregular orders in business at the first levels of the supply chain. Cf., among others, pp. S67, S69 and S70 in C.M Harland, 'Supply Chain Management: Relationships, Chains and Networks', in *British Journal of Management*, vol. 7, Special Issue, March 1996, pp. S63-S80.

[11] The importance of information flows in the Supply Chain is obvious, even if attention has only been focused on it recently, particularly in literature on management: 'Taylor and Jackson (2000) contend that supply chains are not just for distributing goods, but also for distributing information', see Z. Williams, R. Moore, 'Supply Chain Relationships and Information Capabilities: the Creation and Use of Information Power', in *International Journal of Physical Distribution and Logistics Management*, vol. 37, no. 6, 2007, pp. 469-483, p 479 and cf. J.C. Taylor, G.C. Jackson, 'Conflict, Power, and Evolution in the Intermodal Transportation Industry's Channel of Distribution', in *Transportation Journal*, vol. 39, no. 3, 2000, pp. 5-17. Cf. also A Maizza, *Le relazioni sistemiche tra Industria e Distribuzione. Ruolo e valore della logistica*, Cacucci, Bari, 2002, p. 78 and M. Scicutella, *Produzione e logistica nella gestione d'impresa*, Cacucci, Bari, 1993, p. 147.

[12] Cf. M Corniani, Digital Marketing Communication, *Symphonya. Emerging Issues in Management* (*symphonya.unimib.it*), n. 2, 2006.

[13] 'Therefore on one hand manufacturers can develop their own brand equity by interacting directly with consumers, right up to the point of direct sales, at present only in a few cases. On the other, new mediators are emerging, whose competitive advantage derives from the exploitation of virtual rather than physical assets. And finally, the physical distributors themselves can create new channels for dialogue and sales with consumers', see G. Fascina, 'Il nuovo scenario tecnologico al servizio del Supply Chain Management', in GEA (ed.) *Il Supply Chain Management dalla teoria alla pratica*, Isedi, Turin, 2005, p. 58.

[14] Among others, cf. www.bmw.it.

[15] Cf. F.W. Taylor, *Principles and Methods of Scientific Management*, Harper Brothers, New York, 1911, H. Gantt, *Organizing for Work*, Harcourt, Brace & Howe, New York, 1919, F.B. Gilbreth, *Science in Management for the One Best Way to Do the Work*, Società Umanitaria, Milan, 1923.

[16] Cf. M. Revelli, *Introduzione*, in T. Ohno, *Lo spirito Toyota. Il modello giapponese della qualità totale. E il suo prezzo*, Einaudi, Turin, 1993 and 2004, Italian trans. of T. Ohno, *Toyota Production System*, 1978.

[17] Cf. Various authors, *Fundamentals of the Gas Industry 2008*, Economists Books, New York, 2008, par. 3.1 and 3.2.

[18] Examples of this are the oil concessions in regions such as Nigeria or Ivory Coast.

[19] The input of oil at a global level can be calibrated by drilling companies on the basis of the rational uptake of accumulated stocks, while the extraction capability can be used at full steam or under-sized on the basis of the opportunities to recover stocks and the overall quantities put on the

market. Cf. the declarations that appeared in Italian daily papers in July and August 2008 regarding the possible introduction of oil reserves by large producers in order to adjust the price per barrel.

[20] We often tend to contrast 'lean' and 'agile', where the former refers to lean but rigid manufacturing systems and the latter to the ability to react to market requirements. In fact: 'At its simplest the lean paradigm is most powerful when the winning criterion is cost; however, when service and customer value enhancement are prime requirements for market winning then the likelihood is that agility will become the critical dimension'. See M. Christopher, D.R. Towill, 'Supply Chain Migration from Lean and Functional to Agile and Customized', in *Supply Chain Management: An International Journal*, vol. 5, no. 4, 2000, pp. 206-213.

[21] Cf. M. Dell, C. Fedman, *Direct from Dell: Strategies that Revolutionised an Industry*, Harper Collins, London, 1999.

[22] See M. Christopher, D.R. Towill, 'Supply Chain Migration from Lean and Functional to Agile and Customized', in *Supply Chain Management: An International Journal*, cit.

[23] 'Manufacturers of complex goods with relatively long production lead times, such as machine tools have been facing the challenges of increased product diversity and shortening of delivery lead times. The requested delivery lead time is often less than the sum of purchasing, fabrication and assembly lead times. As a consequence such companies have been evolving their order fulfilment processes. … [Some companies] have implemented a build-to-forecast (BTF) schedule in which they forecast end-product mix, create a master schedule of end-products and then release production orders before specific customer orders are received. In BTF there is no stopping point in the production process so mid process buffer inventories are avoided. Customer orders are matched to items in any state of production that will meet the due date. Customer orders rarely march the end products being built hence orders are fulfilled by: - changing products early in the process if the basic model is an appropriate one and the production plan can be altered to accommodate the actual order; - reconfiguring an end product, with features removed and replaced as required. On occasion the changes are so extensive that a loss is incurred'. see P.G. Brabazon, B. MacCarthy, 'Order Fulfillment Models from the Catalog Mode of Mass Customization – A Review', in T. Blecker, G. Friedrich (eds.), *Mass Customization: Challenges and Solutions*, Springer, New York, 2006, pp. 211-231, p. 221.

[24] Cf. M. Christopher, D.R. Towill, 'Supply Migration from Lean and Functional to Agile and Customized', in *Supply Chain Management: An International Journal*, vol. 5, no. 4, 2000, pp. 206-213 and T. Blecker, N. Abdelkafi, 'Mass Customization: State-of-the-Art and Challenges', in T. Blecker, G. Friedrich (eds.), *Mass Customization: Challenges and Solutions*, Springer, New York, 2006, pp. 1-26.

[25] It is worth pointing out that no information flow may be obtained for spontaneous consent to demand, either in response to suitable soliciting of supply that stimulates demand to offer information, for example in exchange for some form of achievable advantage (discounts, access to limited areas of information, etc.). However, a distinction may be made between push and pull information flows with regard to a subject that takes action to enter information in the corporate information system, i.e. a subject that is the prime player. In the case of push-type information flows, the subject that takes action to update corporate information systems is certainly the company itself, which collects data, interviews people and carries out all the data entry operations etc. necessary to update the system. Pull-type information flows are obtained by the subjects who give information voluntarily (albeit prompted by suitable stimuli) for example by registering with an Internet site, or replying by text message to a company proposal, and occasionally even not voluntarily (for example when the subject is tracked by cookies or satellite systems that register cell phones in the network of a specific geographical area) through the intervention of an automatic device activated by the company.