

Linking operations strategy to the corporate strategy process: a practice perspective

Corporate
strategy
process

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Abstract

Purpose – The purpose of this paper is to provide a micro-level, human-activity-centred interpretative framework for the way operations strategy is formed, linked and aligned with corporate-level strategies, and to apply it to gain insights on these processes.

Design/methodology/approach – Relying on the theoretical foundations of social practice theory and actor-network theory, as well as on the analysis of the organisational realities of the operations strategy formation process embedded in pluralistic organisational contexts, a conceptual framework for analysing the production and alignment of operations strategy is developed. The framework is then used to guide field research for the analysis of an operations-led strategic initiative in a medium-sized agro-food company.

Findings – Operations strategy formation can be interpreted as an ongoing practical, distributed social activity of network (re)formation. Specific initiatives, or events, act as catalysts for the association of operations strategy formation practices with corporate-level ones, facilitating thus the current and future alignment of strategic content. Artefacts play an active role in the linking process.

Research limitations/implications – The research presented in this paper is pioneering as it is the first explicit consideration of operations strategy formation (process) as practical social activity (practices are the focus of analysis, not individuals' choices), in which non-human agency (informational artefacts, etc.) is explicitly taken into account. For this purpose, a novel analytic framework was developed, which, however, need to be further tested to determine the exact conditions under which it is valid.

Practical implications – The framework improves the understanding of the organisational dynamics of operations strategy formation, its linking with, and institutionalisation in, other organisational processes and strategic discourses. Thus, it can assist in the analysis of operations-led strategic initiatives.

Social implications – Application of the results obtained can provide better workplaces.

Originality/value – For the first time: operations strategy formation is considered as a social activity by focusing on the strategists and managers' practices; the role of documents, decision-support tools and other artefacts is surfaced; and the importance of introducing operations strategy formation practices carrying strategy content into corporate and business-level strategy processes and their role in the alignment of the two strategies is emphasised.

Keywords Strategy-as-practice, Actor-network theory, Operations strategy process

Paper type Research paper

1. Introduction

Operations strategy concerns the relative prioritisation of the operations function's objectives of cost, flexibility, quality, dependability and speed with respect to the firm's competitive strategy by taking decisions in the areas of capacity, supply chain, technology, and organisation and information management (Slack and Lewis, 2008). Traditionally, operations strategy (or manufacturing strategy – although there is some difference between the two terms in specific contexts, in this paper the two terms are used interchangeably) formation has been considered as part of a top-down planning process, and studied at high levels of abstraction. It has also been associated with



a positivistic underpinning philosophy (Kiridena *et al.*, 2009), and deductive statistics-based research methods have been used (Papke-Shields and Malhotra, 2001; Joshi *et al.*, 2003; Papke-Shields and Malhotra, 2008; Aboelmaged, 2012). The underlying assumption has been that operations strategy is a response to corporate objectives, is function-internally decided, and then communicated through well-defined interfaces and integrated with other functional strategies to achieve strategic fit with corporate-level strategy (Hayes and Wheelwright, 1984). As a consequence, much research effort has been directed towards providing support for decision, communication and integration processes by developing and proposing, in a normative way, appropriate procedures and tools (e.g. Hill, 2000; Mills *et al.*, 2002; Riis *et al.*, 2006).

Recently, the need to view the formation of operations strategy as a broad organisational activity, taking into account culture and other contextual organisation variables (Dangayach and Deshmukh, 2001) at the level of micro-activities (Brown *et al.*, 2007) has been explicitly expressed (Barnes, 2002; Joshi *et al.*, 2003; Boyer *et al.*, 2005; Rytter *et al.*, 2007; Kiridena *et al.*, 2009) and was added to the reactions to increasing frustration with normative models of science that dominate strategic management research in general. Nevertheless, so far, attempts to provide alternative perspectives (Barnes, 2002; Rytter *et al.*, 2007; Kiridena *et al.*, 2009), have fallen short of articulating descriptive or interpretive frameworks that place the strategy-making managers and their practices at the centre, and are not influenced by meso-level structuralistic views which assume that the strategy-making behaviours of operations managers are principally determined by the context/structure in which they work.

Consequently, it seems that the prevailing assumptions and research approaches to operations strategy formation cannot surface “interest-driven” and emotion-conditioned influences in strategy making (Adam and Swamidass, 1989; Barnes, 2002; Kiridena *et al.*, 2009), expressed in the form of power, politics and status dynamics (Floyd and Wooldridge, 2000; Rytter *et al.*, 2007; Papke-Shields and Malhotra, 2008; see also Section 2) that persist as organisational practices, and cannot stimulate much insight on fundamental issues of operations strategy formation. For instance, they cannot provide much help in answering real practical questions raised in these settings, such as “Why in the same organisation some manufacturing/operations strategies proposed by specific individuals or groups, at specific times, dominate and displace others?”, or “Why and how in some companies operations strategies are more frequently integrated successfully into their competitive strategies than in others, resulting in a dynamism as far as the strategic role of operations in the firm is concerned?”, or even, “How a paragraph describing operations strategy in a company report distributes power and influences the way operations strategy is being constructed?”.

The thesis of this paper is that in order to provide answers to the above questions that would display an in-depth understanding of the operations strategy formation process as an organisational process, and before deciding to provide any (information) technology support, it is necessary to consider the fundamental idea of the “(missing) link” between operations/manufacturing and corporate/competitive strategy (Skinner, 1969), in a social practice perspective, as the linking of interrelated micro-activities (practices/routines), which are distributed in time and place, in the operations function and in other intra-organisational and extra-organisational units. Obviously, as social practices are associated with managers and material artefacts (Denis *et al.*, 2007; Orlikowski and Scott, 2008; Feldman and Orlikowski, 2011), the latter are also distributed in different organisational functions and ranks, as well as in external to the firm, but interrelated, organisations.

Hence, if operations strategy formation is considered as an open practice-centred organisation process, the integration of operations strategies in the corporate strategy is facilitated by establishing common points of reference through the association and eventual institutionalisation of operations strategy formation practices/routines, inscribed by individuals and artefacts, in the corporate strategy-making discourse. That is, operations strategies (content) can be aligned with the competitive ones easier if their formulation practices (routines) are associated/integrated with the practices (routines) of competitive strategy making (process-based integration). In the transfer and association of practices/routines, a very important role is played by the technological and other material artefacts which they engage.

Having said that, the aim of this paper is to provide a theory-based consistent description of how this happens, i.e. to describe operations strategy-as-practice, which, inevitably, encompasses its link to corporate strategy, and to explore its consequences. Towards this end, based on the tenets of social practice theory and strategy-as-practice (Whittington, 2006) to consider individual practices, on the one hand, and actor-network theory (ANT) (Latour, 2005) to depict the dynamic interactions among practices and the active role of artefacts (Hussenot and Missonier, 2010), on the other, we develop an ANT-based conceptual framework of operations strategy formation and its association with corporate- and business-level strategies. The framework is then used for the analysis of an operations-led strategic initiative in a medium-sized co-operative-owned agro-food company. It should be noted that although, in the paper, the conceptual framework is presented before its application in the company case, in fact, the two have been developed in parallel in a dialectic mode.

In presenting our research rationale, process and finding, the rest of the paper is structured as follows: Section 2 provides an analysis of the context in which operations strategy is produced and argues for studying the practice of operations strategy formulation separately from other strategy formation social processes emphasising its link to corporate strategy. Section 3 provides the theoretical background, while in Section 4 the proposed framework is developed. Section 5 presents the case study that was used to demonstrate the use of the framework for the analysis of an operations strategic initiative. Section 6 analyses the case with respect to the framework, whereas Section 7 completes the paper by drawing the conclusions.

2. The practice of operations strategy making in its organisational context

Over the last 15 years, in the field of strategic management, much attention has been paid to the study of strategy-as-practice (Whittington, 2006). The power of this stream of research lies in its ability to explain how strategy making is enabled and constrained by organisational practices (Vaara and Whittington, 2012), hence, it concentrates on the study of the activities and interactions in the strategy process, i.e. it constitutes a micro-sociology of the organisational space where strategy is being crafted. The interest of researchers is not on what organisations have (strategy), but on what human beings do when they produce strategy (strategising) (Jarzabkowski, 2005), and, in some cases, how they use, and how are influenced by the use of technological and other material artefacts in such an endeavour (Orlikowski and Scott, 2008).

In the introductory section, we have argued for the adoption of a practice perspective in the domain of operations/manufacturing strategy in order to complement extant knowledge on the subject. Nevertheless, an obvious question concerns the degree of peculiarity of the operations strategy process, so as to necessitate a distinct treatment from corporate-level strategising, an area which has been extensively researched

(Jarzabkowski and Spee, 2009). Specific attention to operations strategy-as-practice is justified by the fact that it is always reified with respect to its dynamic association with corporate and business strategy. Consequently, managers leading, or participating in, its process have developed unique occupational identity characteristics (Alvesson and Willmott, 2002), are exposed to unique horizontal and vertical intra-organisational influences, challenges and pressures, in addition to those originating from customers, suppliers and competitors. More specifically, they have to deal with:

- The anxiety to overcome their reactive role that stems from objectives focused on efficiency and control, to assume a role of strategist, and participate and influence corporate strategy (Hill, 2000; Papke-Shields and Malhotra, 2001; Brown and Blackmon, 2005).
- The effort required to overcome the symbolic and rhetoric dominance (Bourdieu, 1984; Sillince, 1999) of marketing and sales executives, otherwise manifested as “lack of language to explain the consequences of manufacturing decisions” to corporate-level managers (Hill, 2000).
- The emotional pressure that they feel, as far as their job and their career is concerned. Frequently, this stems from the objectives and targets set by higher level executives and the “can’t say no” attitude of operations managers (Dopson and Stewart, 1990; Hill, 2000).
- The pressure exerted by their subordinates (line workers, technicians, supervisors, etc.) whose collective attitude has direct consequences on the operation of the company and the products it produces. This may be well intentioned (e.g. pressure for better working conditions, safety, job security, etc.), or may be the result of intentional work avoidance, undermining of management programmes, unionism motivated by personal objectives, etc.
- The need to speak different “languages” at the same time (Hill, 2000; Joshi *et al.*, 2003). That is, a different language when discussing the implementation of strategy with production supervising personnel, a different one when discussing with higher level executives trying to embed operations strategy in the body of corporate strategy, a different one when formulating and communicating strategy to other functional managers, etc.
- The pressure that they feel as a result of the dynamic evolution of technology and the symbolic pressure (they “own” the knowledge of technology and associated “language”) exerted by the owners and specialists of technology (Sonntag, 2003), and the technological artefacts per se, as far as their modes of use are concerned (Orlikowski and Scott, 2008).
- The pressure they feel from the interaction with the surrounding environment and the related institutional arrangements (Lazonick, 1991), i.e. politics, engagement of financial institutions, labour legislation, role of employer in the local community, effect of operations operations on the natural environment, etc.
- The pressure they feel for getting results for specific strategies in short time periods, as subconsciously the operations/operations executive position is considered as a temporary tenure towards moving to higher-level positions (Hill, 2000).
- Their association with a reactive to change roles, as they are immediately associated with tangible resources (machinery) and rigidly defined processes.

Clearly, the above list suggests that, effectively, the formation of operations strategy is, directly or indirectly, a participative process embedded in a fluid multi-layer context (the internal context of the operations function, the corporate context, the institutional context where the firm operates, etc.) (Barnes, 2002; Kiridena *et al.*, 2009). This multi-layer context is not homogeneous, neither standardised, as far as objectives, power, knowledge and knowing processes are concerned (Karacapilidis *et al.*, 2006; Paiva *et al.*, 2008). Denis *et al.* (2007) characterised such a context as pluralistic. Operations strategy is the outcome of a participative messy process, where proponents of strategic initiatives (usually operations-related executives) require the support of other individuals and other functions to establish their strategies in the organisational discourse. This context justifies the adoption of a practice perspective for studying and understanding the dynamics of underlying strategy production activities in diverse contextual settings. In addition, as operations strategy has always been considered in relation to the corporate- and business-level competitive strategies, as well as other functional strategies, such as the marketing strategy, a theoretical device to connect practices of strategy in a dynamic consistent way is required. To accomplish this latter task and for including the engagement of artefacts in the analysis, we rely on ANT.

3. Theoretical background

Strategy-as-practice is based on the reconceptualisation of strategy as social activity, not just rational choices (“strategising” Jarzabkowski, 2005), and focuses on the micro-activities and interactions that take place during the formation of strategy. Practices are routinised types of behaviour (routines) which consist of several elements/activities, interconnected to one another: forms of bodily activities, forms of mental activities, “things” and their use, know how, emotions, and background knowledge (Reckwitz, 2002). Consequently, strategy is the result of situated and local practices accomplished by practitioners (actors) using decision tools, models, etc., which are mobilised through tacit and collective knowledge regarding the firm and its environment (Denis *et al.*, 2007). There are different perspectives to social practice and its application in strategic management (Golsorkhi *et al.*, 2010; Nicolini, 2013). Descriptive approaches concentrate on the identification and analysis of practitioners, practices and praxes and their interaction (Whittington, 2006; Angwin *et al.*, 2009; Jarzabkowski and Spee, 2009), whereas more analytic ones concentrate on the underpinning theoretical background trying to explain individual and collective motives and behaviours (Gomez, 2010).

In the study of operations strategy formation, social practice theory can help us to identify, in a particular setting, the actual practitioners of strategy and their actual roles, to understand the acts of strategy production (praxes), all of which are not justified by theory, and the influence that evolving practices inscribed in material artefacts (operating standards, models, control charts, etc.) have on them, as well as how these practices are shaped by specific acts (praxes). Practices as routinised behaviours are adopted by managers and are inscribed by technological and other artefacts (indirectly actively impose their use). But as it was indicated above, in contrast to the other routine-centred approaches to strategic management (e.g. the resource-based view), practices are prone to change and reformation (Hansen and Vogel, 2011). In a view of the strategy process as network-forming act, social practice theory provides the toolset to identify the nodes of the network (the actors) and the practices embedded/inscribed in these nodes.

On the other hand, ANT is a theory that can help in understanding how practices/routines are associated and modified, and how networks of strategists, other

stakeholders, and material things related to strategy, such as computer models, texts, etc., are associated to other strategists, stakeholders and material things, to become (temporarily) a coherent strategy process and content “regime” (each operations strategy corresponds to a particular configuration of a network of actors (or actants in the ANT language)). Strategy is initiated by a particular executive, or group of executives, who must induce change by overcoming the inertia of the existing strategy “regime” (current deployed strategy) (Gupta, 2012). To achieve this, ANT maintains, leaders and managers must understand the context and the networks within which change will take place and must build on the interests of others (potential allies) by developing a common, agreed social reality through translations.

Translation is the ability of actants to keep other actants involved in change processes by translating their interests, needs, values and efforts into their own language, and end up with a common understanding (ANT uses the term actants to signify actors defined in relation to their association with other actors). Translation is influenced by practical rationality and takes place in a four-stage (“moments of translation”) process of problematisation (an actant, e.g. an initiator of change, defines a problem in such a way that can be recognised as problem of the others and proposes a discourse for its solution while it tries to establish himself as an obligatory point of passage, i.e. to persuade the others that she has the solution), interestment (gradual dissolution of existing networks by making their actants interested in the new network), enrolment (coordination of actants by negotiation, threat, persuasion, seduction, etc., so that the network achieves a solid identity) and mobilisation (communication and creation of centres for translation to entice new members-actants in the network). Non-human actants provide the stabilising factors for the network (Grint and Woolgar, 1997).

ANT adheres to an agency-based translational model of power and change (translation is different from diffusion in that in translation the initial idea, meaning, proposal, artefact, etc., around which the network is formed, changes as it travels in time and space through successive translations), in which the competency and power of inducing change (i.e. producing and implementing strategy), in the long run, stems from the network (with whom and what an actor is connected to – the distinct feature of ANT is that it considers material things as active participants of networks, i.e. it is also matters the association to material things), rather than from a leader (or leaders), who is just an aspect of the network and is embedded in it.

Both social practice theory and ANT share an interest in describing social/organisational phenomena that are always in a state of becoming (not stabilised), and recognise the importance of dealing with materiality (tools and technologies) (Whittington, 2004; Orlikowski and Scott, 2008). In addition, both share the view of dealing explicitly with the pluralism inherent in certain organisational contexts and recognise the fact that the actor/supporter enrolment and mobilisation process is an open process, not solely driven by dominant views and dominating actors. Nevertheless, the two approaches are complementary as far as the level of analysis and the assumed distribution of power and tacit knowledge are concerned. Social practice theory deals with individual actors (nodes of the network: humans and their practices, and practices inscribed in artefacts) and the micro-activities that contribute to the reproduction and change of strategic orientation (the outcome of strategising, the content of strategy), whereas ANT, which was recently used for understanding operational change (Papadopoulos *et al.*, 2011), focuses on the way this network-forming process takes place as a coherent, coordinated process of connecting and modifying practices towards a specific direction (Nicolini, 2013).

4. A conceptual framework for representing and studying operations strategy-as-practice

It was already stated that the main argument put forward in this paper is that the link and alignment of operations strategies to/with corporate strategies is facilitated by the institutionalisation of operations strategy practices within the corporate/competitive strategy production discourse. Or, in other words, by introducing operations strategy formation/production routines to the corporate strategy production processes. How this happens can be explained by employing the tenets of social practice and ANT, outlined in the previous section, in the conceptual framework depicted in Figure 1. In this, the concepts of operations strategy process (practices/routines) and content, corporate/competitive strategy process (practices/routines) and content, strategists (actors), artefacts used in strategy formation, and power and influence are operationally interlinked.

In the ANT perspective, strategy routines/practices as sets of interlinked activities are inscribed by networked actors/practitioners (human, such as managers, and non-human, such as documents and software) at both the operations and competitive/corporate strategy formation processes (as well as in other strategy producing activities, such as marketing strategy). At any level, strategy practices/routines are directly associated with the content of strategy (Denis *et al.*, 2007), since, in fact, every strategy is a new practice (Seidl, 2007; Whittington, 2007).

Certain strategising actors from the operations function, inscribing (new) operations strategising routines, try to promote their own or functional (new) strategic initiatives or orientations (Pettigrew, 1973; Burgelman, 1994) to the competitive/corporate strategy (content) by building, or reconfiguring, networks of actors associated with specific practices which are directly linked to their (new) strategic initiatives. After forming functional strategy networks, they engage other actors (preferably from the network of corporate strategy) in their practices in order to receive support for their strategic initiatives by persuading them to do so by appealing (translating) to their interests. Every time a new actor is connected to the network, the practices inscribed are modified as a result of the process of translation. By connecting actors from the corporate strategy production network, the operations strategy actor-network associates new practices with its actors as a result of successive translations. Similarly, the initial operations strategy actor-network is modified as a result of successive translations (thinner line of influence in Figure 1). Of course, afterwards and in the mean time between successive translations, the modified routines are engaged to produce strategy which is influenced by the operations function.

Network (re)formation processes take place within functions for arriving at actor-networks of functional strategies, as well as among different functions and organisational levels for influencing and aligning (achieving accommodation of) strategies. They constitute praxes (strategic episodes) and take place in addition to the standard routine strategising practices in which the network and its content remains unchanged – no new initiatives are put forward (Figure 2).

Translations (“translating praxes”) are effectively acts of negotiation and persuasion that result in changes in the practices/routines that the strategists-actors inscribe and according to which they act (strategise). Two strategies are employed in this endeavour: they either claim that both parts have the same interests in the issue, or that the success of the other(s) depends on their association with the initiator(s) of the network (Callon and Latour, 1981). In this way, different practices can become interconnected after translation-induced mutual modifications. Modifications and influences depend on the relative power of actors/actants involved in the translation. As it was already mentioned, power is not linked to the organisational position, status,

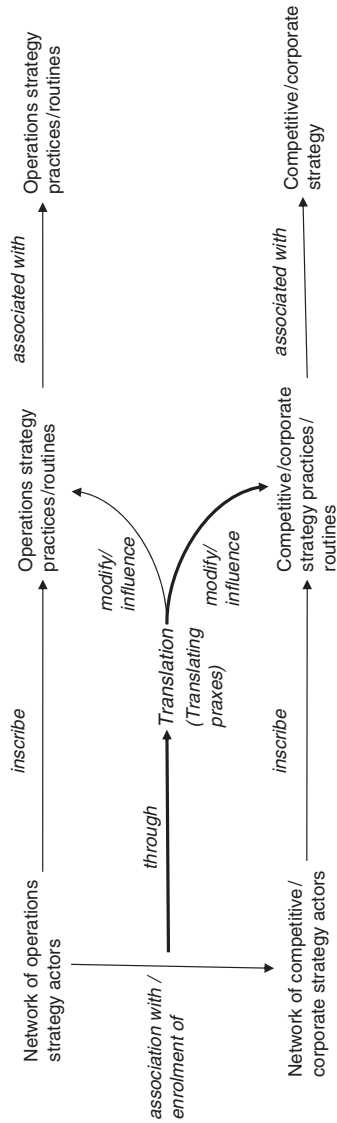


Figure 1. ANT-based conceptual framework for the alignment/influence of operations strategy with/the competitive/corporate strategy

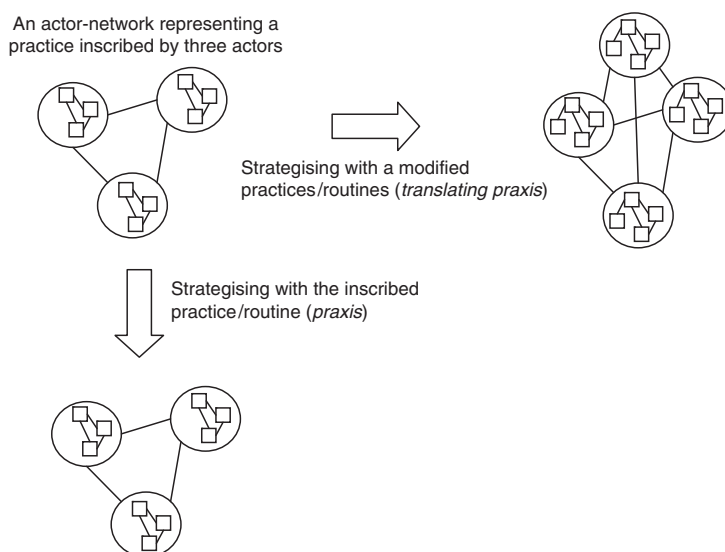


Figure 2.
Strategising with an
inscribed practice
and strategising with
a modified practice

knowledge, etc., of the individual actors only, but is related to the position in the network, i.e. to the power of actors with whom it is associated with. Figure 3 shows the process of the interconnection and eventual integration of a functional (operations) strategy routine/practice with a corporate strategy one. In the bottom left part of the diagram, there is an operations strategy routine (it can also be considered as a set of routines) represented by a network of actors that inscribe the procedural and non-procedural activity sets of the routine(s). A new routine, involving actors from the operations strategy routine and the competitive strategy routine is produced by the modification of the two existing routines (Rerup and Feldman, 2011) as outcome of the process of translation. The actors are engaged in a new set of activities (micro-routines) which are constituted by elements of the initial two routines (Bloodwood, 2012) (the distinction between routines and activities depends on the level of analysis – routines may be considered as being constituted by activities which, at a lower level of analysis, may be considered as routines consisting of finer-level activities, and so on).

For validating the assumptions, for revealing the details, and for deriving the implications of the above mechanisms of strategy formation and linking, an ethnographic-like process was chosen as research method. Ethnographic research methods have been extensively used in both strategy-as-practice and ANT research. In these, patterns of behaviours are observed and interpreted to become a form of dynamic theory, which may then be locally contextualised in specific situations (Pettigrew, 2001). It should be noted, however, that our research method diverted from “pure” ethnography in that it did not commence with *carte blanche*, i.e. without any idea about the nature of the eventual findings, but having in mind a sketch of the above framework after extensive consultation of the related theory.

5. Case study: strategising for the operations/manufacturing function of CONCo-op

At the time the field study was carried out by the author (November 2006-June 2007), CONCo-op was one of the largest (120 million Euros) cooperative-owned food-processing

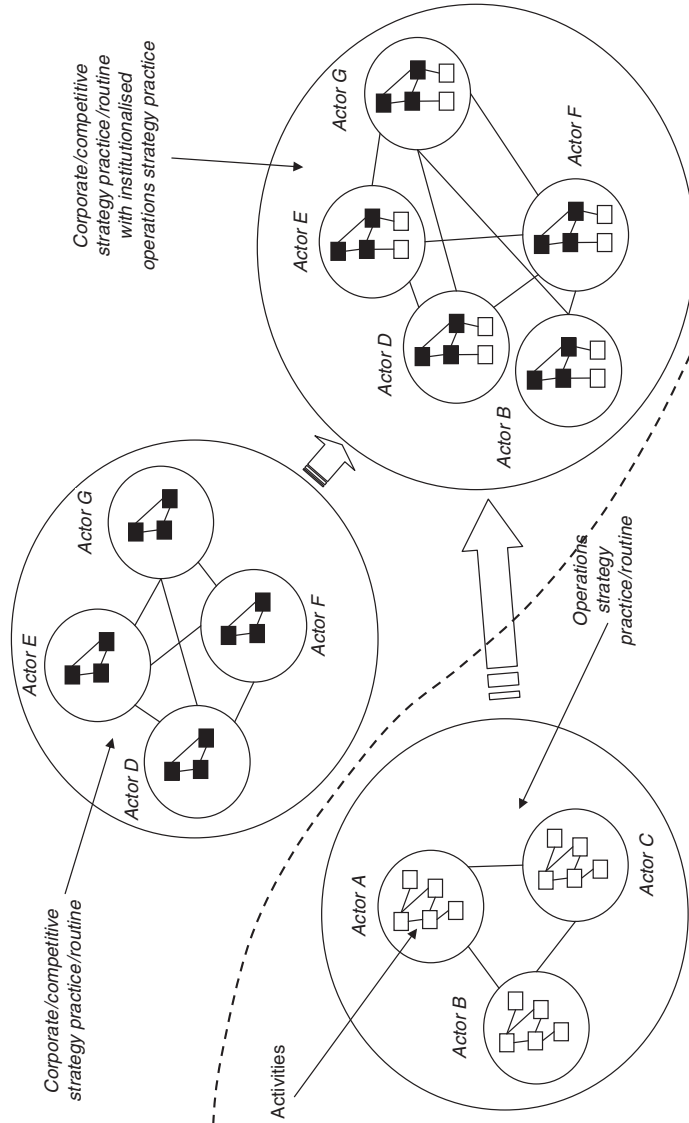


Figure 3.
The association of an operations strategy practice with a corporate-level strategy practice and its institutionalisation in the corporate strategy practice/routine

companies in Greece operating in the sectors of frozen and canned vegetables, addressing mainly industrial markets, and large catering and fast-food chains, domestically and internationally (Europe, USA and Middle East). For obvious confidentiality reasons the name of the company is disguised and some of its characteristics presented have been distorted, however, without affecting the validity of the findings.

CONCo-op was chosen for the study because it was a company with a relatively large manufacturing/operations base compared to its supporting functions, complex ownership structure directly involved in manufacturing operations, and active in a mature industry with a great potential for the operations function to leverage the firm's domestic and international position. These factors contributed to the definition of a pluralistic organisational context, as far as manufacturing strategy was concerned, as its distributed manufacturing facilities, associated tasks, responsibilities and interests did. In addition, the size and structure of the company was convenient for carrying out the ethnographic-like research procedure.

The field research started by identifying the structural elements of a potential operations strategy formation network, i.e. practitioners/actors and practices. This was accomplished by informally discussing the every-day life of the company and taking notes during a tour of the manufacturing facilities and offices for a period of two months. At the end of this period, after observing the existing practices of operations strategy formation, it looked more appropriate to follow – at least initially – the every-day activities and interactions of the company's manufacturing manager (MM) (although formally the position was named “manufacturing” manager, it concerned all aspects of operations strategy and management). The objective was to record static networks of operations strategy formation actors and corporate-level strategy formation actors and their associated routines/practices. Data were recorded in the form of a structured detailed diary (columns for praxes, practitioners, associations, practices), but here observations are presented in a more narrative and aggregated way.

CONCo-op employed almost 1,300 people and operated three production sites situated at a maximum distance of 100 Km from each other. One of the three sites was focused to tomato-based products only. The other two had separate factories for tomato products, frozen vegetables and canned vegetables. The MM was responsible for production efficiency and conformance to production plans for all three factories. The company had three business units (BU): tomato products, frozen vegetables and canned vegetables, respectively, and a corporate technology unit associated with process technology. The manufacturing (MD), marketing (MkD), R&D and NPD (NPD), finance (FD), and Organisation and Information Systems (OIS) departments were related to the BU in a matrix-like structure. The heads of these departments were professional managers. However, the governing board of directors that was active in corporate strategy development was split between professional managers and owner-representatives with law school backgrounds. The range of CONCo-op's products was narrow and fairly constant over time.

Practices of corporate and operations strategising

At the end of 2006, the corporate strategising practices of CONCo-op were dictated by its very nature and the professional and occupational identities of its top management, i.e. practices of companies belonging to the agro-business sector (e.g. decision making related to cycles in accordance with harvesting seasons), practices of coop-owned companies (e.g. participative decision processes) and practices of non-consumer industrial suppliers (e.g. dominant position of industrial marketing). Strategy was being decided annually by top management (the directors and BU managers) and

was communicated in a top-down fashion to the lower-level functions verbally, implicitly and explicitly, in formal and informal meetings. The ideas and opinions of the directors associated with the owners/suppliers were always very influential. The main input and argumentation logic for strategy proposals was influenced by supply (availability, prices and quality) and a tendency to mimic global industry leaders. Occasionally, external consultants were brought in, and participative SWOT analyses and similar activities were performed (Table I, bottom left side).

At the corporate strategy level, there was a salient feeling that the quality of raw materials was by far the principal “order winner” (Hill, 2000). Hence, for the directors, for many years, the operations strategy of CONCo-op had been focused on purchasing and in the management of capacity, in peak and low, large batch, production activity cycles to attain low costs and afford competitive prices. For the MD, however, the strategic management of capacity was just an envelope strategy that included other operations strategy decisions areas, such as quality and operational improvement.

STRATEGIZING AT CONCo-op	
<i>Before (end of 2006)</i>	<i>After (June 2007)</i>
<p>OPERATIONS STRATEGY PRACTICES (ROUTINES)</p> <p>“Translation” of corporate strategies to manufacturing objectives through capacity management Setting targets to lower-level units Development of the MFA report Simulation projections based on improvement projects Benchmarking with domestic competitors</p>	<p>OPERATIONS STRATEGY PRACTICES (ROUTINES)</p> <p>“Translation” of corporate strategies to manufacturing objectives through capacity management Setting targets to lower-level units Development of the MFA report Simulation projections based on improvement projects Benchmarking with domestic competitors</p>
<p>OPERATIONS MANAGERS</p> <p>CORPORATE (COMPETITIVE) STRATEGY PRACTICES (ROUTINES) – BEFORE</p> <p>Decision making associated to harvesting cycles Participative decision making Industrial marketing practices Top-down communication of strategy Supply driven (prices, availability) strategising Tendency to mimic global leaders Involvement of consultants SWOT analysis</p>	<p>OPERATIONS MANAGERS</p> <p>CORPORATE (COMPETITIVE) STRATEGY PRACTICES (ROUTINES) – AFTER</p> <p>Development and use of CONCo-op MS Report along with marketing in strategy meetings Argumentation for future moves based on simulation-based projections Decision making associated to harvesting cycles Participative decision making Industrial marketing practices Top-down communication of strategy Supply-driven (prices, availability) strategising Tendency to mimic global leaders Involvement of consultants SWOT analysis</p>
TOP LEVEL MANAGERS	TOP LEVEL AND FUNCTIONAL MANAGERS

Table I.
Strategising at two different time periods

In the practice of operations strategy deployment, strategic objectives were communicated verbally to the factory managers by the MM. Objectives were then quantified as required operational performance values, and agreed in formal meetings. After communicating targets to lower level managers and supervisors, the MM's task was to monitor their achievement. Frequently, new objectives and strategic priorities were emerging, which were either accomplished, or proposed to the top management and directors for consideration in the Manufacturing Function Annual Report (MFAR). The MFAR was an assessment of the levels of performance achieved, including some dynamic-simulation-based projections of the improvement projects in-progress towards flexible capacity management. There was a significant simulation (spreadsheet, discrete-event and system dynamics) competency and practice in the manufacturing division but it was used only for the projections in the MFAR. The main argumentation logic of the report was centred around what was happening in the domestic industry, especially on what the privately owned competitors do (Table I, top left side).

In monitoring the execution of strategy, i.e. the achievement of assigned objectives, the MM had to balance the interests of, and pressures by, the workers union, the directors seeking efficiency, and the directors that acted as "job providers". Attempts to surface and put forward to the directors the idea of the quality of the overall product, rather than its production cost, ought to be the primary strategic objective for manufacturing was rejected on the grounds that "quality was 80-90 per cent dependent on raw materials", i.e. on the supply, not manufacturing. For the majority of directors, quality was associated with biological agriculture, freshness, minimal processing and no additives. The ISO9000 certification process had been treated as an obligation for keeping certain customers, rather than as an opportunity for improvement. The weak promotion of manufacturing's ideas and the resulting diverting priorities between corporate and operations strategy was mainly due to the inability of the MM to develop over the years an identity as a manager rather as an engineer responsible for the daily operation of the company's factories.

Actor-network formation and translation

In January 2007, a strategic initiative towards operational flexibility, smooth throughout the year small batch production activity, and forward integration, in conjunction with increasing the quality of the overall offering, was put forward by the MM and the frozen vegetables unit manager (FVUM), who had formed the opinion that the existing technology resources, as well as the already agreed investments in technology, could be used differently, and that with the addition of a few more equipment and the use of subcontracting, CONCo-op could move to the consumer markets of pre-cooked and frozen vegetable meals and ready-made sauces. These two executives had had close family relations from the time they both worked in a different company. Hence, they had the opportunity to discuss the flexibility and forward integration ideas in private and to produce some estimates of the changes and the investments required. The basic idea of the "flex-forward" operations strategy had come from changes in the agro-business industry worldwide, and was initiated by a rumour that a major customer (a large domestic fast-food chain becoming lean) was contemplating to drop CONCo-op as a supplier because of its inability to be flexible, as far as product mix, volumes and delivery schedules were concerned.

To support their case, the two managers developed a document with their ideas, indicating the manufacturing resources that they thought would be required for their implementation. In the document, they proposed a new supplier strategy, disconnected

from the exclusive supply of the agricultural cooperatives that were participating in the ownership structure, installation of new flexible equipment, modification of the technology investment programme already running, a new matrix organisational structure at the factory level, and an outsourced distribution policy for more consumer-oriented markets, thus avoiding proprietary warehousing and having to deal with small quantities distribution for which there was neither the capacity, nor the capability. They briefly discussed their ideas with the finance manager, as well as with the Organisation and Information Systems manager (OISM). The former had the opinion that there was no real need for change in the corporate and operations strategy. The latter was in favour of requesting external help from consultants. The two initiators of the new operations strategy raised their points to the marketing manager and to the tomato products unit manager who were, however, both in favour of a more intense industrial marketing strategy, while keeping, more or less, the same cost-oriented operations strategy.

However, the document of the MM and FVUM attracted the interest of both the FM and the OISM, and when they were invited to contribute to the plan, they became active supporters of the initiative by providing a far better financial analysis and projections, as well as a list of the organisational and technological changes required to support the proposed strategy. The document became more formal, was connected to the ongoing investment programme in cutting and packaging equipment, included simulation-based projections and what-if risk analysis, and was forwarded to the international sales director who belonged to corporate strategists and was thinking for quite a long time about a new strategic orientation. Although he could be considered to be the indirect initiator of the strategic initiative since he continuously encouraged departmental managers to see beyond domestic practices, initially, he was not very enthusiastic for the idea, being concerned about its effects on human resources. As a member of the board, however, he strongly supported the modification of the technology investment programme in the direction proposed in the document.

In March 2007, when the HR manager was contacted to provide data on the relationships between shareholders and workers for assessing a possible internal resistance to flexible supply and overcome the international sales director's reservations, he was reluctant to provide it, being afraid that the flexible equipment and short production runs will result in a smaller, more specialised, workforce. He did not want to have any trouble with the union, given the latter's detest for instability in industrial relations, as well as his own involvement in local politics. At the same time, the MM promoted the changes in technology investments arguing that the new capabilities of equipment must be somehow exploited by an appropriate strategy. Surprisingly, a month later, in a formal meeting, the HR manager was persuaded by the union executive committee representatives that supported the plan because it was opposing "scientifically designed and own-implemented industrial marketing" strategy, which was perceived by the union as more threatening (move in a direction towards tighter controls and leaner – aka labour redundancies – practices). Their support for the MD-oriented strategy was also the result of the affinity the union executives had towards the manufacturing executives' culture (closer to workers culture, informal dressing, involvement in the solution of shop-floor problems, etc.) *vis-à-vis* that of marketing and sales executives were considered distant close to the corporate top.

New practices of corporate and operations strategising – alignment of strategies

In June, five months after the initiation of the new operations strategy, given the support of the HR manager and the union, and having the new flexible equipment

under installation, it was easy to gain the support of the managing director. The support of the strategic development director was further intensified from the interest that he developed in the use of simulation in strategy, which afterwards became a standard practice in its department. A document explaining the new manufacturing-based strategy was produced and presented to different cooperatives emphasising the potential benefits they would have as shareholders of CONCo-op, as well as to all company executives and to the board of directors in a formal meeting. It was then decided to hold a corporate strategy meeting in which this operations strategy initiative along with other functional strategies would be considered as constituent parts of a coherent corporate-level strategy. The document was renamed “CONCo-op’s manufacturing strategy” and it was decided to be produced and presented annually and discussed in conjunction with the “CONCo-op’s Marketing Strategy” report. Through this document and presentations, quality has been established as an operations priority and consultants were brought in to help in the use of ISO9000 certification as a lever for continuous improvement. In addition, since then, in all corporate strategic documents and presentations computer simulations were employed as a strong argumentation and justification factor (Table I, right-hand side).

CONCo-op was re-visited by the author for a week in November 2012 to observe and discuss with the company’s executives the relation between operations and corporate strategies and strategy production processes. Although many things had changed in the size, the range of activities and the ownership structure of the company, principally due to the economic crisis that hit the country, the “CONCo-op’s Manufacturing Strategy” report was part of the corporate strategising processes and still acted as the link between manufacturing/operations strategy and corporate strategy. The use of simulation modelling had a different fate because the department of strategic development was dissolved after the retirement of its director. For some time, simulation modelling was outsourced to a university spin-off. Their models, however, were marginally used. Over the last two years, simulation modelling became again a practice of strategy making with the technical support of the OIS and manufacturing departments. In addition, in the five-year period since 2007, other strategising practices originating from the operations function, such as the very early financial assessment of every potential decision introduced after a major investment in production machinery, were introduced into corporate strategy processes.

6. Analysis of CONCo-op’s case: revisiting the ANT-based conceptual framework for operations strategy-as-practice

The first point that emerges from the CONCo-op’s case is that the concept of operations/manufacturing strategy is reified through its association with corporate/business strategy. This is not a novel idea and has been for quite a long time the basis of the conceptual definition of both the context and process of operations strategy. In a social practice perspective, however, we can argue that operations strategy formation takes place at two neighbouring interlinked social spaces (or fields (Whittington, 2006; Gomez, 2010)) separated by different objectives, occupational identities, professional backgrounds, etc. (upper and lower horizontal chains in Figure 1, and dotted line in Figure 3). This does not suggest that operations strategy is disconnected from other functional strategies. Marketing strategy, NPD strategy, etc., are also directly linked to corporate strategy and through it to the operations one (Pero and Lamberti, 2013). A social space is a region of distinct social activity characterised by distinct practices (Bourdieu, 1984). The two spaces which are directly associated

with operations strategising activity are the operations strategy formation space and the corporate strategy formation space. Within each space, strategising actors-practitioners, praxes and practices co-exist, and are associated.

In the case of CONCo-op, the corporate strategy production space was initially constituted by practices, such as participative decision making, practices of copying strategies of industry leaders, emphasis on process technology, etc., the praxes of corporate strategising, which included formal and informal meetings of directors, as well as of directors and departmental managers, consultation sessions, etc., whereas the typical actors/practitioners were the members of the boards of directors and the tools that they employed (e.g. SWOT analysis, chapter of annual report, etc.). The latter were also the “carriers” of (inscribing) strategising practices. Similarly, for operations strategy, the related space had its own practices (e.g. extensive use of simulation modelling, report writing), praxes (informal meetings, including the ones with the directors) and practitioners (those managers involved in the writing up of the MFAR, the MFAR itself and the simulation tools).

In reality, the network of actors includes practitioners from different, neighbouring spaces and the resulting ensembles influence, as they are influenced by, the practices/routines of these spaces. In the case presented, in the course of time, some of the practices of corporate strategising were introduced into the operations strategy formation space (e.g. international practices substituted domestic ones) through new associations as the actors/practitioners of operations strategy introduced allies from the corporate strategy formation space. Moreover, at the end of the period described, a material actor (the simulation software, its use practices and the dynamic perspective to strategy that it assumed) formally belonging to the operations strategy formation space was introduced to the corporate one, as the “CONCo-op manufacturing strategy” document did.

The second important point that the case shows is that operations strategy formation can be viewed as a process of actor-network formation around practices/routines in the corresponding space, which may also include actors that formally belong to the corporate strategy space (or other functional strategy spaces, e.g. marketing, whose strategic interests and activities are represented through the corporate strategy space). The actor-network formation process develops the capacity, (re)defines and connects practices for influencing organisational action, and provides a consistent framework for explicating the possible dynamic patterns of the strategy process (Denis *et al.*, 2007). Clearly, in this context, a particular strategy exists as long as its existence is made real by the network of human and non-human actors that produce and support it (the strategy “regime”).

An actor-network formation can continue to produce strategy routinely without being modified. However, frequently, specific praxes (translating praxes) induce change in the set of practices of a function and consequently in the network that defines them. Revisiting Figure 3, time is assumed to flow from left to right. The process of translation (a series of coordinated praxes) results in a new, relatively stable, practice-defining actor-network at the right-hand side of the figure. This network represents a new practice of corporate strategising inscribed in actors of both the corporate and formal operations functional units, i.e., operations actors participate in the corporate strategy process. Actors (human and non-human) in the network from both formal organisational functions are ontologically the same as they inscribe the same practices/routines.

The four stages of translation that result in the (re)formation of the actor-network and the role of non-human agency in the process can be easily identified in the

description of the case. First, a network of actors that define the operations strategy practice, including actors from different functions, was constructed. At the end of the formation (translation) process (moment of mobilisation), this network contained strategy content too. The initiators of strategy persuaded the FM and the OISM that the well-being and the future of CONCo-op depended on their operations/manufacturing strategy proposal, i.e. to change strategic objectives towards flexibility and to deploy a forward integration (consumer markets) strategy (problematization). To gain their support, however, they had to modify the initial strategy proposal. Then, the existing rigid operations strategy process (procedural strategising) represented by the functionally isolated network had to be dissolved and the “competing” proposal-network of the marketing and tomato products unit managers was weakened (interestment). The competing network was further weakened after the support of the union was guaranteed through exertion of symbolic (cultural proximity) and argumentation power. In both cases, the proposal-document (the non-human actor) played an active role in the development of the related associations. In addition, this document, when finalised, was the medium through which the network was solidified as a single identity (enrolment). The same role was played by the flexible machinery that was being installed. Finally, the network, in addition to the re-definition of the corporate strategy process, acted as a single identity-proposal-and-commitment of operations strategy, as well as part of corporate strategy, to the board of directors and to the owner cooperatives (mobilisation).

The CONCo-op case also demonstrates how operations/manufacturing strategising practices are institutionalised within corporate strategy practices through the association and involvement of human and non-human operations actants in the process(es) of translation(s). The degree of this institutionalisation seems to be a determinant of the alignment between corporate and operations strategies, and a determinant of the strategic role of operations/manufacturing (Hayes and Wheelwright, 1984). Simulation modelling had always been a practice of operations strategy and was used for promoting operations strategies in the corporate strategy discourse making the “language” of operations and its dynamic perspective to strategy more accessible at the corporate level. Through its association with corporate-level actors in the process of operations strategy formation and deployment, it has been institutionalised (i.e. it became relatively independent of software simulation environment and practitioner) as a practice of corporate-level strategising. Similarly, the development and presentation of the “CONCo-op’s manufacturing strategy” annual document was also institutionalised in the practice of operations/manufacturing strategising. As a result, since then, indirectly, the operations function had a more active role in competitive strategy formulation.

7. Conclusions

The consideration of operations strategy formation as practice, and the subsequent development of the ANT-based interpretive framework for the link between operations and corporate strategy, directly responded to Boyer *et al.* (2005) comment, regarding operations strategy research, which states that “Research needs to be done to address how different groups within a company can be better aligned internally, as well as how external alignment with supply chain partners can be achieved”. Given that active alignment is the main objective and the *raison d’être* of operations/operations strategy, the research presented here, although it does not provide prescriptions on how to accomplish this highly context-specific task, through the ANT-based explanatory framework developed, raises some important issues that operations and other

managers should take into consideration when involved in the production and alignment of strategy. These issues include: the very nature of operations strategy as a continuous spatially unrestricted process that takes place mostly in pluralistic contexts, the important role of social relationships among the practitioners/actors of operations and corporate strategy, the role of artefacts as carriers of practices (in addition to their usually assumed role as carriers of strategy content) in the institutionalisation of practices in the corporate strategy discourse, and the observation that the degree of penetration of operations strategy to corporate strategy and the subsequent alignment of the two depends on the capacity of its producers to coordinate and align heterogeneous actors in durable networks. Research-wise, these issues can also be considered as propositions requiring further empirical validation.

In concluding, the actor-network-based model of operations strategy formation suggests that the achievement of the main objective of the operations strategy process, i.e. the alignment of operations and corporate strategies, is a context-specific issue but depends on the degree of the heterogeneity of the operations strategy actor-network. The more corporate, or other functional, actors are engaged in the translations and eventually connected, the more aligned the resulting strategy. And the more non-human actors (artefacts) are actively engaged, the more durable the network and the strategies are.

Clearly, the conceptual framework presented provides an organised description of the mechanisms of operations strategy formation at the micro-level and complements existing knowledge produced by other approaches at different levels. The framework, which is the result of qualitative theoretical and empirical research, may be instantiated accordingly to explain different and/or more context-specific phenomena related to operations strategy formation and to assist in a preliminary analysis before deciding to provide any (information) technology support. On the other hand, the framework is the result of qualitative research and needs further empirical validation since many of the assumptions and realities discussed may not be true for a number of important organisational settings; many questions may have been left unanswered, or many new questions may have been raised requiring further research. This is, however, the purpose and the power of qualitative research, and the main objective of a paper that attempts to introduce a new perspective into a specific domain of inquiry. Despite these methodological limitations, the results of the research presented may certainly lead to improved workplaces, improved strategists' strategising capabilities and improved formulation processes with better outcomes.

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