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CONTINGENCY FACTORS OF PURCHASING – A CONCEPTUAL MODEL TO SUPPORT PROCUREMENT DECISIONS

A BESZERZÉS KONTINGENCIATÉNYEZŐI – KONCEPCIONÁLIS MODELL A BESZERZÉSI DÖNTÉSEK TÁMOGATÁSÁRA

Because of serious changes in environment, it is vital to ensure continuous supply. It is thus necessary to analyse business processes such as procurement in-depth to determine whether any tool exists to help in decision-making. The key objective of this study is to support more conscious management of the purchasing area based on the literature and professional knowledge gathered (by qualitative research methods) at five multinational and large companies over the course of two decades. This paper therefore defines a conceptual model that depicts the complex environment of procurement, synthesising its features and identifying factors as forces and drivers. The developed model identifies four forces – requestors, suppliers, internal and external rules – and four drivers – strategies, IT solutions, cross-functional integration and supplier management. The resulting model could guide scholars and practitioners in how to identify deficiencies, and it can support its audience in analysing, managing and increasing the strengths of procurement.

Keywords: **procurement, purchasing, supplier management, cross-functional integration, strategy, IT platforms**

A mai gyorsan változó környezetben létfontosságú a folyamatos ellátás biztosítása; ezért szükséges az üzleti folyamatok, például a beszerzés alapos elemzése annak megállapítása érdekében, létezik-e olyan eszköz, amely segíti a döntéshozatalt. A tanulmány kiemelt célja, hogy támogassa a beszerzési terület tudatosabb irányítását a két évtized alatt öt nagy- és multinacionális vállalatnál összegyűjtött szakmai ismeretek (kvalitatív kutatási módszerekkel), illetve a szakirodalom alapján. Előbbiek alapján a cikk egy olyan koncepciós modellt határoz meg, amely bemutatja a beszerzés összetett környezetét, szintetizálja annak jellemzőit, és azonosítja a tényezőket, mint erőket és meghajtókat. A kidolgozott modell négy erőt – igénylők, szállítók, belső szabályzatok és külső szabályok –, illetve négy meghajtót – stratégiák, informatikai megoldások, keresztfunkcionális integrációt és szállítói menedzsment – azonosít. A létrehozott modell útmutatást nyújthat a tudósoknak és a gyakorlati szakembereknek a hiányosságok azonosításában, és segítheti az olvasót a beszerzések elemzésében, kezelésében és erősségeinek növelésében.

Kulcsszavak: **beszerzés, szállító menedzsment, kereszt-funkcionális integráció, stratégia, IT-platformok ratégia, IT-platformok**

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In today's rapidly changing environment there is a continuous need to sustain competitiveness, to minimize risks, to ensure the supply. Due to these market conditions "*in organizations of the future, world-class operations will require world-class supply management and suppliers*" (Carter et al., 2000, p. 22). Within the compa-

ny the purchasing area has the role to spend money on required means driven by the principle of saving but in line with the company's strategy. Procurement (used as a synonym for purchasing, also as substitution of the purchasing division – in this case, written by capital letter) has a unique operating environment as the intersection and connection point among actors and solving all communications with suppliers (Carter et al., 2000) in order to grant the continuous supply. The procurement executives try to figure out how to make the proper decisions regarding the purchasing procedures: how to ensure and by which company the day-by-day supply, how to minimize risks, or which factors do influence the procurement processes and decisions.

Procurement operates under the pressure of different forces, in other words, there are factors that can enforce the behaviour of Procurement; more precisely, since the Procurement must conclude that contracts along which the company runs its core activity, there are actors who can enforce which contractual terms and conditions are to be involved in the contracts. Furthermore, the purchasing work is always driven by workflows and lies on platforms; thus, there are influencing factors that create a framework to the purchasing work, link actors to each other, drive their interactions, so trigger how to conduct and operate the purchasing processes.

Since procurement faces a complex environment and its activity cannot be separated from several parts/actors it could be worth understanding how these processes work. A comprehensive conceptual model of procurement work could help most to understand better the purchasing operations within the company; it could explain why the importance of the purchasing job is increasing. So far, it is clear, there are complex requirements towards Procurement and its contribution to company success is crucial; irrespective of its complexity and importance, however, an overall model does not exist, which could give a helicopter view on procurement operations' context.

Therefore, the key objective of the article is to help a better understanding and more conscious examination and management (in terms of decisions) of the purchasing area. This paper defines a conceptual model which depicts the context of procurement, synthesizing its features and identifying factors as forces and drivers. The model could be a compass for scholars and practitioners to identify potential strengths and weaknesses, in other words to analyse or to manage and increase the effectiveness of procurement. The reasons why such a model is needed and how it should work, are discussed in this article.

The structure of the article is as follows: in the first part, we review the literature to identify existing procurement models. Then we will depict the methodology and data collection behind the paper. In the next chapters, we will analyse the cases as well as the four forces and four drivers, and also, we will depict the results of the examinations. After that, we discuss the complex model and show the practical implication (based on the cases) and also the theoretical contribution Finally, we summarize the conclusions and draw attention to the limitation.

Literature review

There is a large body of papers related to procurement; but generally, the articles and researchers are dealing with only some parts of the existing specifics of purchasing work, or contrarily, the papers have a too broad approach. There are several models and papers which discuss phenomena and notions like portfolio management of purchasing (e.g. Gelderman, Semeijn, & Vluggen, 2017; Gelderman & Semeijn, 2006; Gelderman & Van Weele, 2005; Kraljic, 1983), cross-functional integration (e.g. Foerstl, Hartmann, Wynstra, & Moser, 2013), supplier evaluation and selection (e.g. Wittinger, 2019; Osiro, Lima-Junior, & Carpinetti, 2014; Bruno, Esposito, Genovese, & Passaro, 2012), or even some which deal with contractual issues (e.g. Paranikas, Whiteford, Tevelson, & Belz, 2015) and IT and digitalization (i.e. e-procurement) aspects (e.g. Seyedghorban, Samson, & Tahernejad, 2020; Den Butter & Linse, 2008; Johnson & Klassen, 2005); but all of them discuss just some specifics of procurement.

Conceptual models

There are also several articles that defined/introduced models related to various aspects of companies' work and their business processes; we would like to draw attention to the followings:

In one of the most influential article, Kraljic (1983) focused on the supply side but did not deal (in a few words only) with other aspects. Furthermore, there are several studies and articles dealing with more dimensions of a company, for instance developing strategy maps such as the BSC – Balanced Scorecard (Kaplan & Norton, 1992, 1993, 1996), which is a well usable model, indeed, but does not involve and discuss the supply side and suppliers at all.

Porter (2008; 1985) identified factors and synthesized them into one model as five competitive forces which help companies to determine the weaknesses and strengths; the model can be used to identify the business structure and to determine corporate strategy. Porter's model mentions – among others – "Power of suppliers", nevertheless the model approaches the business processes rather from sales than from the purchasing point of view; it can be applied to understand the level of competition of the company within the industry to enhance its long-term profitability.

Den Butter and Linse placed the procurement in a broader strategic context by examination of various types of costs that managers of global companies need to consider in making procurement decisions (Den Butter & Linse, 2008); they distinguished objective "hard" and subjective "soft" factors, where further internal and external factors set up; for instance, "Government rules and regulations" appeared as an external hard factor, so we can consider it to be a factor which enforces some particular behaviour.

De Boer et al. (2002) developed a conceptual model to analyse in detail the impact of electronic procurement on the purchasing process and purchasing costs, on the organisation and IT systems. They made distinctions among several electronic procurement forms (such as

web-based ERP, e-sourcing, e-tendering) and investigated their impact – one by one – unfortunately on the Purchasing department and "*Rest of the organization*" level only; nonetheless, they distinguished – based on IT systems –"*internal and external communication*" (De Boer et al., 2002, p. 29).

Only few papers appear (e.g. Seuring & Müller, 2008; Kleindorfer, Singhal, & Wassenhove, 2005) to analyse the entire (and/or sustainable) operating environment of the supply chain – consequently of procurement as well; these try to depict the actors/authorities of the purchasing procedures, synthesize and/or catalogue its foci and drivers, but considering only at a low level the real company's circumstances.

Kleindorfer et al. (2005) have constructed a model to explain the (extended) Supply Chain from the sustainability point of view nevertheless, between "Suppliers" and "Production" there is no Procurement shown at all; but we can recognize the existence of the key drivers (for instance from "Regulations" root) such as Corporate Imagine, Regulatory Compliance, Liability, etc.

Seuring & Müller (2008) defines a conceptual model of sustainable supply chain management, where triggers are also identified. But this framework on the one hand oversteps the boundaries of procurement (even in line with the supply chain approach) and, on the other hand, depicts superficially only the parts which are involved in relations. The model analyses the relations at the company level, instead of analysing them – as more complex connections – at the organizational levels. They depicted the relations by a direct connection between Focal company and Suppliers and between Focal company and Customers; however between Focal company and Customers the Sales is the organization in charge, while between the Focal company and Suppliers the Procurement; furthermore, "Supplier evaluation" belongs to the Procurement only (as a tool of Supplier Management), In addition, they specify besides Customers – i.e. connected to the Focal company – Government and Stakeholder only, while it is not clear which stakeholders are they referring to; from the other point of view Government and Customers should be already included in the "Stakeholder" group since both of them are stakeholders.

Thus, a clear distinction among business and functional units (BU/FU) of a company must be done, even if there are overlaps and dependencies on each other, as both Mentzer et al. (2008) and Foerstl et al. (2013) mentioned this in their work: *"the purchasing, logistics, production management as well as marketing functions are dependent on each other for effective supply chain management. While each of these functions has its own functional space, they also have some overlap with other functions"* (Foerstl et al., 2013, p. 692).

The role and tasks of an organizational unit should be clearly declared at its own level: to be able to define its own responsibilities to state its specific KPIs (Key Performance Indicator) and to identify (if any) the deficiencies; as Cousins also suggests "*the unit of analysis should be at the product, service or commodity level and not at the firm level*" (Cousins, 2002, p. 71). Therefore, we should concentrate on the functional and business units as independent entities and among them on Procurement as well, as the purchasing service provider entity in the company.

Gelderman et al. (2017) developed a model to depict relations between actors, factors and implementation at the organizational – more or less – level; according to them, "Actors" are the top managers, procurement professionals and budget owners, while "Factors" are the management support, information/communication, organization and external pressure. However, the mentioned actors belong to the internal part of the company only (for instance Suppliers are not represented at all), while the presented "external pressure" among the factors should be part of the external features.

Finally, Nicoletti (2017) depicted in his book the increasing complexity of the business environment, especially of the procurement, which requires a significant intervention in the process- and information-management within companies and through inter-company relations. He developed several models in his work, that describe the business, financial and communication channels and agile solutions, nevertheless there cannot be found a model which consists of internal and external parts, furthermore all the affected stakeholders at the same time.

Even though nowadays it is clear that Procurement has a strategic role and crucial contribution to the company success, and several studies accentuate its importance as well, however, an overall model does not exist, which could give a comprehensive view on procurement operations' context. We did not find in the literature an indeed synthesized model which helps managerial decisions by identifying all the related/affected factors of the purchasing work, therefore we strive to develop a model which describes the acting forces and drivers of such a complex and risky procedure as procurement.

Data and methodology

The data have been gathered by qualitative research methods at multinational and large companies during two decades (between 2000-2020) by the author itself who have possessed several positions as head of procurement at the discussed companies. Hence, the conceptual model was developed step by step with special attention to: i) the personal involvement in several projects and connected workshops (such as BPR – Business Process Reengineering, OD – Organizational Development, establishment of new IT- and planning systems, or in the regulatory processes); ii) concluding lots of contracts and meetings; and iii) dealing with a great deal of data (notes, presentations, company data and so on). The number of meetings measures – in terms of internal and external sense – hundreds of events per year per company, furthermore, the number of contracts also counts tens of thousands in total during the 20 years.

Considering that we strived for the understanding of

business phenomena and processes, our endeavour was to explore, understand and conceptualize, therefore the qualitative research method, more exactly a mixture of case study, participant observation and action research was applied. We consider the application of the given mixture as a justified method because of the reasons as follows:

Case study is a typically step-by-step theoretical research form to study contemporary events which provides an opportunity for a profound exploration and understanding of the context under discussion and inductive theory based on processed cases. The purpose of case study research is to understand real-life phenomena by observation, explore potential problems and draw adequate conclusions from studies (Yin, 1994). During the time spent at the given companies, a need to depict and explain to the stakeholders the nature and contextual environment of the procurement was detected, therefore we also discovered the lack of a comprehensive model.

Action research is the research that is happening with, rather than on practitioners, therefore, in practice, action research outsteps the traditional interpretation and constructed separation between research and application (Bradbury & Reason, 2003); thus, action research was applied, considering that several times the decisions were made by the researcher itself.

Participant observation is the process that enables researchers to learn about the activities of the people under study in their natural setting via observing them and being involved directly in those activities (Kawulich, 2005), since the participant observation was implemented based on personal involvement.

Based on the above things, let us mention that the conceptual model (even in some previous/introductory form) was developed by personal involvement and direct action of the researchers, furthermore, it was presented to the companies' stakeholders to allow direct observation of their reactions to the given situation.

Besides the qualitative research methods and profound basement on professional knowledge and practice (as in case of the most influential models in the literature regarding the business decisions and strategies such as BMC – Business Model Canvas – Osterwalder & Pigneur, 2010, Porter's 5 forces model – Porter, 2008, BSC – Balanced Scorecard – Kaplan & Norton, 1996 or the Kraljic's matrix – Kraljic, 1983), nevertheless, the model got its final content and shape based on the literature review.

Data analysis and results

Prior to revealing our conceptual model, it is worth analysing the actual status of companies as well as all the proposed contingency factors of our construction, so we will let you know the results of these examinations. Therefore, we are going to portray the discussed companies' procurement practices and to name and depict the nature of the contingency factors also to review the literature connected to them; furthermore, we would like to give a short description of how we understand procurement work in this context.

Status of companies' procurement

The studied companies belong to the manufacturer and service provider industry in several areas such as telecommunications and postal services, R&D (medical devices producer), oil and petrochemical industry (Figure 1). All the given companies – apart from one – are large and multinational companies; most of them strongly exceed the shown 2500 FTE (Full-time equivalent) barrier. All the companies are at a high maturity level in terms of business processes, they all apply several internal regulations (among others procurement regulations), taking special attention to the companies' and purchasing strategy, where the need to follow the external rules is a maxim.

Nevertheless, we can find differences regarding their purchasing processes, let us describe them.

Figure 1

Key figures of the target companies

KEY FIGURES OF COMPANIES		A	B	C	D	E
Net sales revenue (million EUR)	More than 12500 M EUR		■			
	Between 250 and 12500 M EUR	■			■	■
	Less than 250 M EUR			■		
No. of employees (FTE)	More than 2500 FTE		■		■	■
	Between 250 and 2500 FTE	■				
	Less than 250 FTE			■		
Average no. of contracts/year (pcs)	More than 1000 pcs/y		■		■	■
	Between 500 and 1000 pcs/y	■				
	Less than 500 pcs/y			■		
Average no. of meetings/company/year with suppliers (pcs)	More than 500 pcs/y		■			■
	Between 100 and 500 pcs/y	■			■	
	Less than 100 pcs/y			■		
Average no. of projects/workshops/OD/year with BU/FU (pcs)	More than 50 pcs/y		■		■	■
	Between 10 and 50 pcs/y	■		■		
	Less than 10 pcs/y					
Average no. of meetings/year with BU/FU (pcs)	More than 100 pcs/y	■	■		■	■
	Between 50 and 100 pcs/y			■		
	Less than 50 pcs/y					
Years spent on data collection at the given company (years)	More than 5 years	■	■			■
	Between 2 and 5 years				■	
	Less than 2 years			■		

Source: Authors' construction

(Note: to ensure mandatory anonymity the companies are coded by letters, and we applied range – instead of concrete numbers – to show data; furthermore, the key figures reflect the year 2019 to eliminate the data-distortion influence of COVID-19 in the years 2020 and 2021.)

- Company A: makes a moderate division regarding the internal units (i.e. companies' departments and colleagues) and external partners; also, the way how to manage the external partners (in terms of selection and evaluation) is at a basic level of evolution. The behaviour of how to cooperate day-by-day with other units and colleagues is quite friendly, while the level of existing IT applications and platforms (which serve for instance the workflows) are not developed enough.

- Company B: makes a broad segmentation regarding the internal and external partners; the way how to manage the external partners (i.e. on relevant systems and by reliable skills) is applied at a high level. Unfortunately, the daily work is often aggravated by conflicts between people, while the platforms for workflows are continuously improved and maintained.
- Company C: makes a moderate division regarding partners, so there is not enough distinction among stakeholders to allow effective category management; also, the management of the external partners is at a rudimentary level of development. The conduct during the daily work inside of the company is hostile; furthermore, the IT applications and platforms are at a low level of development (even the ERP system).Company D: makes a broad segmentation regarding the partners; nevertheless, the management and classification of the external relationships have some deficiencies in terms of comprehensive analysis. There is quite peaceful conduct regarding the daily work, while they continuously apply practices to improve and maintain IT platforms.
- Company E: also makes a broad segmentation regarding the partners; furthermore, the management of the external partners is applied at a high level. The conduct during the daily cooperation is quite friendly, while they continuously improve and maintain the application, platforms and systems.

Mechanisms of the purchasing work

Soon processes will be fully controlled and driven by IT applications, will be linked into one information network, the processes/applications themselves are going to be aggregated into a single intelligent and integrated system. Therefore, new perspectives, optimized systems and processes are born while new types of resources and new schemes of managerial thinking and behaviour are needed. The procurement managers cannot disregard the continuously and rapidly changing environment and the phenomenon that the supply patterns can fall overnight (Kraljic, 1983), therefore, companies must develop practices and processes to secure the sustainability of their purchases and to mitigate the risks arising from supply chains (Hallikas, Lintukangas, & Kähkönen, 2020; Miemczyk & Luzzini, 2019; Gualandris, Golini, & Kalchschmidt, 2014). Due to the new challenges and changed requirements in this sense, the procurement processes are looking for their reshaped place in the company.

As we see, the purchasing organization and its working system can be determined by numerous dimensions (contingency factors); nevertheless, we argue that procurement strategy, the degree of centralization, the maturity level, the department size, work structure and the knowledge level of the organization have the highest impact on procurement; obviously, there can be other important factors, but we assume them to be the sub-conglomerates of the listed ones. Nevertheless, from our point of view the above-listed factors we consider to be "default" dimensions; therefore, to be able to discuss in the upcoming parts a new procurement conceptual model, at this point we presume to have an ideal purchasing organization with a centralized type of procurement activity, being at the highest maturity level, having a developed procurement strategy and an optimal operation level through knowledgeable associates and with ideal organizational size and the best-organized work structure.

Four forces of procurement

According to our conceptual model Procurement operates under the pressure of some forces, in other words, there are factors that can enforce the behaviour of Procurement (Figure 2); more precisely, since the Procurement must conclude that contracts along which the company runs its tasks there are actors who can enforce which contractual terms and conditions are to be involved in the contracts. Based on this viewpoint, we can distinguish four forces:

- *Requestors:* the internal partners, who belong to different BU/FUs (i.e. Business and Functional Units of the company).
- *Suppliers:* the external partners, who grant the supply and embody the market.
- *Internal regulations:* the personification of the Management Board (i.e. of the managing concept) as a regulatory principle of work since these internal rules determine and coordinate the operations and workflows; these regulations embody the will/objective of the management – in other words of the owners – in terms of accounting, finance, treasury/investment, human resources and legal aspects, code of ethics and HSE (health, safety and environment), strategy, etc. These regulations must be in compliance with the external rules on the enforcing legislation basis.
- *External rules:* the personification of the Government in force and its authorities also as a mandatory and regulatory principle of work; these rules embody the legislation tied to the core activity and business relations (e.g. competition rules) or even to special regulations which belong to the local authorities and rules in terms of environment protection, building and operating permits and so on. These rules should be in line with existing international legislation and agreements.

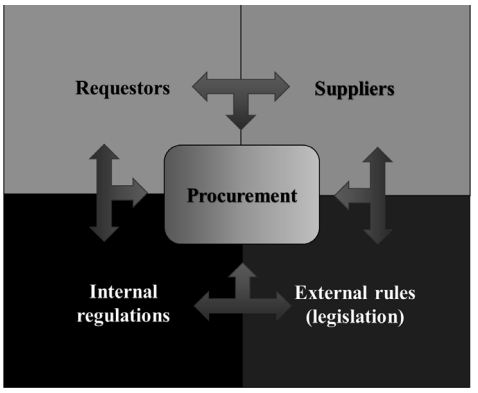
Gelderman et al. (2017) emphasized that stakeholder pressures are often seen as the driving force toward the implementation of standards and codes of conduct. According to their opinion, Procurement can be depicted as an interaction point of a broad set of stakeholders, such as suppliers, contractors or internal employees of the other areas of the company.

Seuring & Müller (2008) have also considered Suppliers and Government as forces (pressure set by groups). Government – in our viewpoint – is substituted/embodied by External rules as we described it above, as a much larger conglomeration, taking into account all the local and global authorities. The importance and determinative power of the Suppliers are unquestionable; a great deal of literature is accentuating their crucial role (Ogunranti,

Ceryan, & Banerjee, 2021; Padgett, Hopkins, & Williams, 2020; Wittinger, 2019).

Figure 2

Four forces of procurement



Source: Authors' constructionLiterature already identified factors (i.e. actors and/or groups) who can force (have the power to influence or change) the behaviour of procurement. For instance, according to Seuring & Müller (2008) "...the starting points are external pressure and incentives set by different groups" (Seuring & Müller, 2008, p. 1703); also, Osipova & Eriksson (2011) mentioned that "...the clients [i.e. Procurement] and contractors [i.e. Supplier] are forced to have a dialogue" (Osipova & Eriksson, 2011, p. 1154).

On the other hand, the presence and force of the Requestors cannot be denied, since they transmit the customer requirements; nevertheless, the internal demands could lead to an increasing number of the games inside of the company, because the outcome of the games depends on the power distribution between those involved in that correlation (Pemer & Skjølsvik, 2016; Bjerregaard & Jonasson, 2014).

According to Servajean-Hilst & Calvi (2018) procurement contributes to the future success of new products when internal organizational areas such as Manufacturing, Marketing, Quality or Research and Development departments work together. When such an internal business or functional unit forms a request towards the purchasing area, we can speak about "Requestor".

There are legal risks in the purchasing procedure which can influence the business conduct (Gelderman et al., 2017). The legal risks can be better mitigated by clearly stated legal requirements which are involved in the processes as Internal regulations and "External rules" (even as legislation). Besides the legal regulations, other departments such as finance and accounting (also part of "Internal regulations"), have the right to influence or make decisions regarding the purchasing contracts; these areas are interrelated and must work together with the Procurement to achieve business success and gain competitive advantage (Servajean-Hilst & Calvi, 2018).

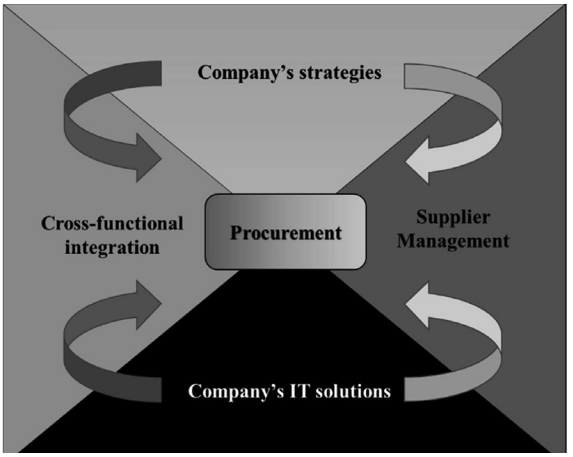
Four drivers of purchasing work

The purchasing work always is driven by workflows and lies on platforms (Figure 3); thus, there are influencing factors that create a framework to the purchasing work, link actors to each other, drive their interactions, so trigger how to conduct and operate the purchasing processes; according to our understanding the drivers can be depicted as follows:

- *Company's strategies:* are the guiding principles, so these are the flagships that ensure the compass to all operations.
- *Company's IT solutions:* are to be the (IT) platforms on and systems where the processes take place and are operated.
- *Cross-functional integration:* as terminus technicus of the internal cooperation it ensures the connections among organizations/units of the company during the common works.
- *Supplier Management (SM):* is the knowledge of how to manage the supplier relationships in terms of evaluation, selection and cooperation during the purchasing work and as a checkpoint of the fulfilment of tasks.

Figure 3

Four drivers of purchasing work



Source: Authors' construction

Strategies, the strategic role and legitimacy of procurement

"*A strategy describes how an organization intends to create value for its stakeholders*" (Kaplan & Norton, 2004, p. 1); also, organizational/functional strategies (as individual policies) will have a cumulative impact on corporate goals. Therefore "*in a well-worked-out strategy, each policy fits into an integrated pattern. It should be judged not only in terms of itself, but also in terms of how it relates to other policies which the company has established and to the goals it is pursuing*" (Tilles, 1963, p. 119).

Thus, the purchasing strategy must be in line with and part of the company's strategies, since the collaborative procurement strategies can enhance the efficiency in projects (Eriksson et al., 2019). This does not automatically mean, however, that the purchasing strategy will be accepted and acknowledged by the top management and by the other organisations. We argue that procurement should play – without any doubt – a strategic role in the com-

pany and must work with unquestionable legitimacy; by legitimacy we mean "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions*" (Suchman, 1995, p. 574).

In other words, legitimation means how accepted and acknowledged a given organization is inside of its interpretation range, in our case in the related company (Acquah, Essel, Baah, Agyabeng-Mensah, & Afum, 2021). The internal legitimacy level of Procurement corresponds to how significant the purchasing organization's contribution is perceived by the other organization managers and by top management. The key factor for the improvement of a purchasing organization's legitimacy is the alignment of its objectives with the objectives set by top management and with the company's strategy (Tchokogué, Paché, Nollet, & Stoleru, 2017).

Cross-functional integration, the internal cooperation of the company

Cross-functional integration means the cooperation among various divisions and functions of a company (Poberschnigg, Pimenta, & Hilletofth, 2020; Foerstl et al., 2013). Nowadays, when we build and value the knowledge-based economies, the cross-functional integration and the involvement of the cross-functional teams in common projects of the company is mandatory (Ferreira, Pimenta, & Wlazlak, 2019). The well-recognized function of cross-functional teams (for instance formed by R&D, technology, production, marketing and procurement knowledge) is to increase the purchasing performance; because due to it – as the cross-functional team members integrate diverse perspectives and competencies during processes (Meschnig & Kaufmann, 2015) – the purchasing processes become much more achievable and the process will be better adjustable to the requirements.

Nevertheless, the joint thinking, knowledge sharing and/or transfer too often result in failed cooperation. One of the major barriers to internal knowledge transfer could be the antagonistic relationship between the source and the recipient (Szulanski, 1996); where – for instance – Procurement could be the source and Requestor the recipient, or vice versa. According to the practice and in line with the opinion of several scholars (e.g. Porter, 1985; Goold, Campbell, & Alexander, 1998), the hostile behaviour of organisations seems to survive the organizations' own evolution in other terms (Ferreira et al., 2019).

Porter have blamed both the source and the recipient; he said that the source "'*will have little incentive to transfer [know-how], particularly if it involves the time of some of their best people or involves proprietary technology that might leak out*", also the recipient can "*rarely be expected to seek out know-how elsewhere in the firm*" (Porter, 1985, p. 368). His general point of view is that "*the mere hope that one business unit might learn something useful from another is frequently a hope not realized*" (Porter, 1985, p. 352).

Similarly to Porter's view, "*unless the motivation system reflects these differences [in perspective], it will be extremely difficult to get business units to agree to pursue an interrelationship and to work together to implement it successfully*" (Goold et al., 1998, p. 176). The cross-functional teams try to synthesize this knowledge, nevertheless, factious organisations could be experienced still too often. The single solution to solve them should be the understanding of the essence of a problem since only mutual aims should exist.

Supplier Management, the management of the external relations

The most complex and maybe the most critical part of the purchasing work is the management of supplier relationships (Hallikas et al., 2020; Wittinger, 2019; Handfield, Petersen, Cousins, & Lawson, 2009), the so-called Supplier Management. "*Without a foundation of effective supply chain organisational relationships, any effort to manage the flow of information or materials across the supply chain is likely to be unsuccessful*" (Croom, Romano, & Giannakis, 2000, p. 73). As a consequence, the role of the purchasing function in the business has significantly increased in importance due to the emphasis on building and maintaining long-term relationships with external partners (Cousins, 2002; Bendixen & Abratt, 2007; Handfield et al., 2009).

The purchased materials generally form a considerable part of the manufactured products (Tate, Ellram, & Dooley, 2012); thus, good cooperation among Procurement and Supplier can contribute significantly to the product value. Procurement should purchase goods and services using the most efficient supply chains of suppliers who can provide them not only at the lowest costs, best quality and highest flexibility, but also in a socially and environmentally responsible manner (Seuring & Müller, 2008; Zimmer, Fröhling, & Schultmann, 2016).

Also, today a great accent is put on the risks; in risk management the proactive planning has replaced conventional reactive planning (Kraljic, 1983; Carter et al., 2000), so Procurement should act in the same way considering the risks in Supplier Management (Ogunranti et al., 2021; Hallikas et al., 2020). In the past, procurement managers focused (mainly) on cost reduction; recently, they should give importance to continuity and flexibility of supply even in case of pandemic circumstances (McEvoy & Ferri, 2020).

However, in the endeavour to become more agile and lean, companies are becoming more dependent on their suppliers and this phenomenon increases the overall risk and company's vulnerability (Faisal, Banwet, & Shankar, 2006); in other cases, Procurement tries to exploit suppliers (Lanier, Wempe, & Swink, 2019). Instead of a distorted dependence we propose to have a well-balanced working scheme in supply chain procedures. In case of barrier-free cooperation, the participants of a collaborative network should act in a fair and committed manner (Jokela & Söderman, 2017), in accordance with the common goals;

also, in case of a strategic cooperation companies can utilize the knowledge existing at the network level, since they can incorporate in their own strategies the aptitudes, capabilities and performance of their partners (Håkansson & Snehota, 2006; Dyer & Singh, 1998; Dyer & Nobeoka, 2009). In this way, the company becomes an integrated part of the network and benefits from the knowledge, which originates from diverse sources.

Although Cousins is on the opinion that "*partnership relationships do not exist*" (Cousins, 2002, p. 71), we should consider the force of close cooperation among companies – such as strategic cooperation or a common/joint product development – because cooperation delivers superior value (Contractor & Lorange, 2002). Cousins also acknowledged that we could experience collaborative relationships (instead of partnership relationships), but these are still competitive, because the parties do not trust each other.

Company's IT solutions: digitized workflows and procedures

Given the globalization of markets and vulnerability of sourcing processes in today's rapidly changing environment (for instance aggravated by a pandemic situation as in the case of COVID-19), the need to focus on core business and to increase the effectiveness is accomplished – among others – by the opportunity and speed of information exchange inside and outside of the companies; such circumstances made IT solutions and e-procurement vital for companies and the entire global economy (Nivetha, 2021; Afolabi, Ibem, Aduwo, Tunji-Olayeni, & Oluwunmi, 2019; Chae, Yen, & Sheu, 2005; Ronchi, Brun, Golini, & Fan, 2010). Thus, information technology becomes one of the key drivers in the formation of cooperation and alliances in supply chains (Contractor & Lorange, 2002). No one, nor the professionals and managers can disregard that the EDP (Electronic Data Processing) is a must for decades in business processes (Kraljic, 1983), especially in such an area as procurement, where everything is data, information consists of figures and databases.

IT platforms as various digitized systems, applications and tools are to provide relevant information to leaders to help and accelerate decisions, including performance evaluation of a given activity (Szukits, 2017), to boost flexibility in working and finally to reduce costs (Garrett, 2017). The opportunity offered by digital technologies to make deep rationalization in the purchase of goods and materials is becoming indispensable in competition, considering the flexibility and the positive effects in reducing costs and process lead-time of the companies which adopted e-procurement solutions (Centobelli, Cerchione, Converso, & Murino, 2014). The companies who still use paper-based and labor-intensive processes for procurement freeze a large scale of inefficiencies in their processes (Puschmann & Alt, 2005).

But if the companies jump into e-procurement processes and solutions without fully understanding the cross-functional collaboration and network effects (internal and external) underlying these technology models, the investment required to move the right information from applications and to integrate these technologies with existing systems (e.g. ERP) can jeopardize the processes (Quesada, González, Mueller, & Mueller, 2010).

Adoption of technological solutions initiates changes both in organizational architecture and processes (Centobelli et al., 2014), by a necessity to partly/totally reorganize them. Then IT investments launch an undeniable positive effect on the purchasing function and processes (Rodríguez-Escobar & González-Benito, 2015), therefore e-procurement allows increased efficiency in the organisational structure (Ronchi et al., 2010) as well.

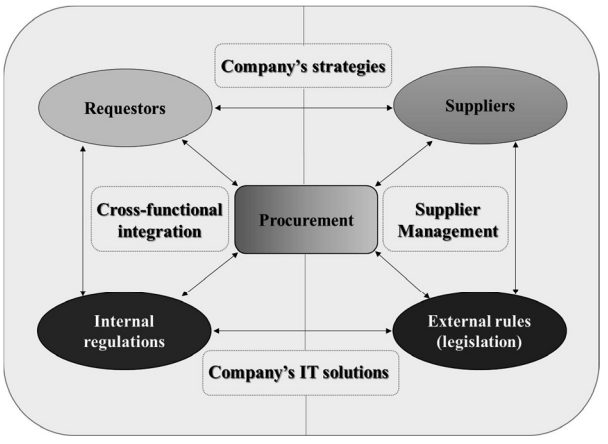
Thus, Procurement should run its activity by digitized workflows (digitized platforms and digitized tools/applications) to operate procedures at an effective level, with secured outputs and in the most acknowledged and transparent way (Wittinger, 2019; Seyedghorban et al., 2020). Without electronic workflows and processes, it is not possible to make the purchasing procedures faster and well-monitored or to have reporting possibilities instantly; several times we need with urgency accurate data such as status of a procedure, lead times, total spending (by year, quarter or related to a particular supplier), purchasing volumes, etc., figures which can be obtained or extracted from the digitized systems and applications only.

Discussion

In this chapter we will discuss the proposed comprehensive model of procurement (developed based on the literature and practice), furthermore, we will give examples of practical implications and theoretical contributions.

Figure 4

Four forces and four drivers' conceptual model



Source: Authors' construction

The complex model of procurement

To describe the features and factors of the procurement work, its mechanism and interactions during the purchasing processes, we propose a comprehensive model (Figure 4) which consists of the above mentioned four forces (Requestors, Suppliers, Internal regulations and External

rules) and four drivers (Company's strategies, Company's IT solutions, Cross-functional integration and Supplier Management).

The model is situated in the frame of the entire company with special attention to its features:

The left ("internal") part of the model is discussed below the notion of cross-functional integration: it means that the procedures should be conducted in a way to apply high level of supporting cooperation to avoid disagreements among divisions.

The right ("external") part of the model is driven by Supplier Management: the knowledge of how to manage the supplier relationship.

The company's strategies and IT solutions will not only influence the purchasing work but will also determine the cross-functional integration (internal cooperation) and the Supplier Management (external relations) due to their workflow and regulatory processes.

In terms of forces, the purchasing area links parties to each other by its various work (Gelderman et al., 2017; Nicoletti, 2017), as follows:

- Requestors are linked both directly (by contract fulfilment) and indirectly (through procurement procedure) to Suppliers,
- Requestors are linked directly to the Internal regulations by the operations and indirectly to the External rules by the contracts concluded by Procurement,
- Suppliers are linked directly to Requestor when fulfilling the tasks laid in the contracts and indirectly when the intermediator is again Procurement,
- Suppliers are linked directly to External rules by the contracts and through their core activity and indirectly to Internal regulations also by the contracts concluded by Procurement,
- Internal regulations must be in compliance with External rules, while they can be much more specific and detailed; they can fine-tune the processes and operations as the theoretical basis of the work and contracts.

We consider all the other factors not mentioned in our conceptual model to be given aptness or already involved in these forces and drivers (or represented by them). Let us explain how we interpret it:

- the core business determines the industry and the market, so these are aptness; on the other hand, the market (i.e. supply sources and types) is already embodied by Suppliers,
- other stakeholders such as Customers belong to the Sales department, therefore another model should deal with them; nevertheless, we can consider them to be already represented by Requestors (since the request is originated from some external Customer demand/requirement to be solved at the end of the process); furthermore, this factor is also represented by the management and through it by Strategies and Internal regulations, since meeting customer needs is the number one goal of the core activity,
- nonetheless, Strategies are not equivalent to Internal regulations. Several times happened that years were spent till Strategies appeared in Internal regulations.

In terms of drivers, the cooperation among business parties cannot take place without workflows and platforms, since an explicit cooperating scheme must be stated to ensure objectivity in terms of bias-free and equal management of internal and external partners (Ferreira et al., 2019; Poberschnigg et al., 2020). Following such principles:

- Company's strategies: are on the top of all actors (forces) and activities (drivers) since these are the principles that make sense to and guide the operations inside and outside of the company.
- Company's IT solutions: the IT platforms, systems and applications are the basement and condition to be able to trace the processes and operations.
- Cross-functional integration: links Procurement and Requestor to each other, as the internal cooperating scheme of the companies.
- Supplier Management: links Procurement and Supplier to each other, as the management method of supplier relationships to grant continuous (external) supply.

Practical implications

Based on the conceptual model and considering the features of the companies, Figure 5 shows the status of the target companies in terms of the discussed factors; the highlighted (coloured) cells depict areas that need development, or where some deficiencies could be detected.

We can state that there are not any deficiencies regarding the Internal regulations and External rules, nor in terms of Strategies. As mentioned above there is a need to put a high accent on internal relations in terms of Cross-functional integration and external in terms of Supplier Management. Furthermore, continuous IT development is a must and a broader classification regarding Requestors and Suppliers (at a high level of category management) can help a better understanding thus a more effective cooperation.

- Company A: needs to make a wider division regarding the Requestors and Suppliers; also, the Supplier Management needs to be improved. Furthermore, there is a need to evolve in sense of existing IT applications and platforms.
- Company B: needs to apply a more effective Cross-functional integration and cooperation to lower personal conflicts.
- Company C: needs to make also a wider division regarding the Requestors and Suppliers, and to develop Supplier Management. There is a strong need to boost IT applications and platforms, while there is a need to discontinue such a hostile atmosphere.
- Company D: Supplier Management needs to be a little bit improved.

Figure 5

Procurement practice in terms of model factors at the given companies

PROCUREMENT PRACTICES	Four Forces				Four Drivers			
	Requestor	Supplier	Internal regulation	External rules	Company's strategies	Cross-functional integration	Supplier Management	IT solutions
Company A	moderately sequenced	moderately sequenced	exists and applied	maxim	efficiently applied	moderate level of conflicting interests	moderately applied	moderate improving
Company B	highly sequenced	highly sequenced	exists and applied	maxim	efficiently applied	high level of conflicting interests	efficiently applied	continuous improving
Company C	moderately sequenced	moderately sequenced	exists and applied	maxim	efficiently applied	high level of conflicting interests	moderately applied	moderate improving
Company D	highly sequenced	highly sequenced	exists and applied	maxim	efficiently applied	moderate level of conflicting interests	moderately applied	continuous improving
Company E	highly sequenced	highly sequenced	exists and applied	maxim	efficiently applied	moderate level of conflicting interests	efficiently applied	continuous improving

Source: Authors' construction

Theoretical contributions

The developed comprehensive conceptual model could help most to understand better the operations within and outside of the company; it could explain the complexity of the purchasing work, its mechanisms and why the importance of the purchasing job is increasing. So far, it is clear, there are complex requirements towards Procurement and its contribution to company success is crucial; irrespective of its complexity and importance, however, an overall model does not exist, which could give a helicopter view on procurement operations' context.

This article was written to draw attention to the lack and importance of a complex purchasing model which identifies the dimensions of the procurement work, synthesizes its factors and build them into a single one and comprehensive new model; it could illuminate the existing deficiencies and improper routines (if any), their roots and can highlight the new challenges connected to the factors/elements of the purchasing work.

Furthermore, this complex model can explain to the procurement managers how they should handle and to the scholars where they can study the purchasing issues; the model strives to be a compass of the procurement features for practitioners and to draw attention to some potential research topics – as further research opportunities – to scholars; so, the paper attempts to help both parties.

Conclusion

The conceptual model of procurement proposed in this paper could be regarded as global in case of centralized purchasing and at a high maturity level; so, it can be applied – if desired – even during the real procurement procedures to help decisions by understanding the elements of procurement processes and their interactions on each other. Even that Procurement has already reached a high development level, but the processes are not effective enough, we could find the reasons around the factors depicted in the previous parts of the article. But, considering that we cannot influence the actors, more precisely their existence, because we cannot replace them at all, we can develop the drivers only.

Strategy and internal cooperation

Shifting from the traditional approach – where the purchasing area is considered as a simple administrative organization – toward a more strategic field, the procurement organization will continue to enhance its position in the company. Also, there is a need to move ahead from the hostile "cooperation" to an indeed collaborative approach among the company's organizations. This approach depends on the organizational culture and leaders' behaviour and will determine the conduct of the parties inside of the company. But probably due to different interests, some discrepancies among divisions will survive, even though it is clear at the end of processes an individual decision not carried out in a prudent manner could become a common disadvantage.

Supplier relationship management

In the endeavour to become more efficient companies sometimes used to exploit their suppliers; in other cases, to become more flexible, they used to apply outsourcing or offshoring schemes; other alternatives are common/joint cooperation or a strategic partnership. Due to these steps

and based on the continuously changing market environment, companies are becoming more dependent on their suppliers which could increase the overall risk and the company's vulnerability. Therefore, Procurement must pay special attention to Supplier Management.

Digitalization

If there are no digitized platforms (systems, solutions and applications) there is no chance to trace the events. If there is no control, also there is no development and recovery opportunity; on this path, there will not be any opportunity for effective work and professional success.

Today the competition is accelerating, so the working scheme must keep pace with it, but it is not possible without digitalization.

Limitation and further opportunities

The article could have limitations (for instance) in the number of dimensions and/or related to their interaction; furthermore, another question is to what extent this model could be used by smaller companies and/or by companies with non-centralized procurement, or this can be resolved at all. All the above aspects can be turned into further research questions and future examination opportunities.

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