

Definition of the Global Procurement Function of a Renewable Energy Producer

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Master's Dissertation

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“Esforça-te ao máximo. Dá o teu melhor. E de depois logo se vê: as contas fazem-se no final.”

Abstract

Companies all over the world work continuously to achieve efficient and effective processes throughout the added-value operations of their business, aiming at producing positive returns and reducing costs. The Procurement function in organisations has a major impact on this objective, with 61% of Procurement professionals still focused on cost reduction (37%) and strategic sourcing (24%) to address the challenging context resultant from the post-COVID-19 pandemic scenario¹. Hence, a well-established Procurement process, with defined guidelines, rules, roles and responsibilities allows the translation of an organisation's business vision and objectives into a sourcing and purchasing strategy.

The company approached in this dissertation had recently redefined the organisation's vision and objectives, following a recent set of acquisitions of several companies in the renewable energy sector. However, given the different backgrounds of the acquired companies, there was no formalised process to standardise the Procurement activities of the group, which could jeopardise the attainment of the defined strategic goals. Hence, it was necessary to avoid the systematisation of inefficiencies across the group and to enable a streamlined operationalisation of Procurement activities, empowering a fulfilment of the company's mission and ambition by capturing synergies across the different geographies.

The proposed solution to address this necessity consisted of the definition of the global Procurement function of the group of companies. This definition entailed the design of the organisational and operational model for the function and implementation of best practices to manage Procurement processes, ensuring efficiency and agility throughout the different business units of the different companies of the group.

During the first phase, a diagnostic of the company's current reality was executed. This analysis entailed a quantitative and qualitative assessment of the organisation's status, in which the maturity of the Procurement process of the different companies was evaluated, through a spend analysis and a BAT analysis. Additionally, the management philosophy was established, to determine the level of control by the corporate structure over the different companies of the group.

Following this assessment, a design of the Target Operating model was performed. Initially, the baseline for the new functional structure was defined, considering the operational control profile desired by the organisation, which resulted in a structure capable of leveraging the centralisation of processes in strategic purchasing categories, and a decentralisation of management activities of less strategic purchasing categories. Additionally, a Procurement policy was defined, composed of the governance mechanism, roles, responsibilities, authorities, and lines of report necessary for the operationalisation of the target operating model. Moreover, requirements for the establishment of a supplier portal were designed, as well as an implementation roadmap to support the rollout of the Target Operating Model.

In conclusion, the organisation is expected to reap the benefits of standardising activities and streamlining processes, ensuring the Procurement model's efficiency and scalability while ensuring a sustainable evolution.

Keywords: Procurement function, Source-to-Pay, Procurement Operating Model, Spend Analysis, BAT

¹ Source: *PwC Global Digital Procurement Survey 2022*

Definição da Função Global de *Procurement* de uma Empresa Produtora de Energia Renovável

Resumo

Empresas em todo o mundo trabalham continuamente para alcançar processos eficientes e eficazes nas operações de valor acrescentado dos seus negócios, com o objetivo de produzir lucros e reduzir custos. A função de *Procurement* nas organizações tem um impacto significativo neste objetivo, com 61% dos profissionais de *Procurement* focados ainda na redução de custos (37%) e no aprovisionamento estratégico (24%) para endereçar o contexto desafiante resultante do cenário pós-pandemia². Como tal, um processo de *Procurement* bem estabelecido, com diretrizes, regras, funções e responsabilidades bem definidas permite a tradução da visão de negócio e dos objetivos da organização para uma estratégia de compra.

A empresa abordada nesta dissertação redefiniu recentemente a sua visão e objetivos, precedido pela aquisição de várias empresas no setor de produção de energias renováveis. Contudo, devido ao panorama diferente de cada uma delas, não existia um processo formalizado para a uniformização das atividades de *Procurement* do grupo, o que poderia por em causa o alcance dos seus objetivos. Assim, era necessário evitar a sistematização de ineficiências no grupo e permitir uma operacionalização agilizada das atividades de *Procurement*, capacitando o cumprimento da missão do grupo através da captura de sinergias pelas diferentes geografias.

A solução proposta para abordar esta necessidade consistiu na definição da função global de *Procurement* do grupo de empresas. Esta definição implicou o desenho do modelo organizacional e operacional para a função e a implementação de melhores práticas para gerir o processo de *Procurement*, assegurando eficiência e agilidade em todas unidades de negócio de todas as empresas do grupo.

Durante a primeira fase, foi realizado um diagnóstico à realidade atual do grupo de empresas. Esta análise envolveu uma avaliação qualitativa e quantitativa do estado da organização, nas quais a maturidade do processo de *Procurement* das diferentes empresas foi analisado através de uma análise de despesas e BAT. Foi feita ainda uma definição da filosofia de gestão, para determinar o nível de controlo da estrutura corporativa sobre as diferentes empresas do grupo.

Após esta análise, foi executado o desenho do modelo operativo futuro. Inicialmente, base da nova estrutura funcional foi definida, considerando o perfil de controlo operacional desejado pela organização, o que resultou numa estrutura capaz de promover a centralização de processos em categorias de compra estratégicas e a descentralização das atividades de gestão de categorias de compras menos estratégicas. Foi elaborada ainda a política de *Procurement*, constituída pelos mecanismos de *governance*, funções, responsabilidades, autoridades e linhas de reporte necessárias para a operacionalização do modelo operativo futuro. Adicionalmente, foram levantados requisitos para o estabelecimento de um portal de fornecedores, assim como elaborado um plano de iniciativas para suportar a implementação do modelo operativo futuro.

Em conclusão, é esperado que a organização colha os benefícios da uniformização de atividades e processos e assim assegure a eficiência e escalabilidade do modelo de *Procurement*, enquanto promove uma evolução sustentável.

Palavras-chave: função de *Procurement*, Source-to-Pay, Modelo Operativo de *Procurement*, Análise de despesas, BAT

² Fonte: PwC Global Digital Procurement Survey 2022

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The education path of any individual is fundamental to the construction of their persona, and their overall positioning in society. We gather examples, throughout our life, that help us steer our journey towards becoming active members of the community, capable of contributing with added value. The last few years have been an important step on this quest.

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Acronyms

BAT- Business Analysis Toolkit

BU- Business Unit

ERP – Enterprise Resource Planning

IT – Information Technology

KPI – Key Performance Indicator

KPMG - Klynveld Peat Marwick Goerdeler

LoS – Line of Service

P2P – Purchase to Pay

PO – Purchase Order

PR – Purchase Requisition

PwC – PricewaterhouseCoopers

RFP – Request for Proposal

RFQ – Request for Quote

S2C – Source to Contract

S2P – Source to Pay

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1 Introduction

This dissertation was developed in the context of the Master's in Industrial Engineering and Management, in the Faculty of Engineering of the University of Porto, and will describe the process of designing the Global Procurement function of a renewable energy producer company.

This first chapter will provide a broad overview of the context of the developed project, firstly presenting the main drivers of this project, followed by a description of both PwC and the Client company. Moreover, the project's objectives are described, and the framework applied throughout the project is presented. Additionally, this presentation of the utilised methodology entails the description of the project's planning.

1.1 Motivation of the project

The challenges that businesses all over the world now face are more complex, in a dynamic environment that keeps on evolving, often unexpectedly. Organisations that work for other businesses or customers, either as product or service providers, now collaborate with more informed, highly demanding clients. The objective of being customer-centric has constituted a shift of focus for organisations (Sparrow and Cooper, 2014), that now need to face elaborate performance drivers such as globalisation of their capabilities, while still pursuing innovation, efficiency, and effectiveness.

Under these conditions, efficient and effective businesses can only be achieved through the adequate management of their respective supportive resources and functions. A thriving organisation must be capable of not only generating positive returns through the production of goods and services, but also doing it while streamlining internal processes and flows with the objective of reducing costs, waste, and impact on the external environment. Monitoring and supervision of such processes are of the utmost importance as well since this is a key action to develop response action plans if the proposed objectives are not achieved. Furthermore, as it has been widely known in the markets, “threats of resource depletion and raw materials scarcity (...) intensified competition, and accelerating technology change have ended the days of no surprises” (Kraljic, 1983). Naturally, the rise in a company's costs has much to do with the purchasing activities conducted by firms. Eatough (2014) mentions a recent study that concludes that “69.9% of corporate revenue is directed toward externalised, supplier-driven costs”, with companies continually increasing this percentage. Hence, Procurement function's performance in companies is tightly linked with purchasing efficiency and effectiveness (Wilson, 2021).

The global business panorama is evolving in the direction of augmented supply chain visibility, as supported by many research topics elaborated in areas such as business-to-business exchanges, e-SCM and e-procurement (Wei and Wang, 2010). This evolution of the industries can be of service in the quest for achieving the desired effectiveness and efficiency profile for organisations, since it allows a constant redesign and adjustment of roles that create value by synergistically recombining resources.

The Procurement function of a business entails the set of activities that allow an organisation to acquire goods and services, delivering value to the company by allowing them to find and cultivate beneficial supplier relationships (Wilson, 2021). The Procurement process ranges from the identification of the necessity to acquire a new good or service and ends with the payment of the respective order to the supplier.

As Eatough (2014) explains in his review, the role of Procurement in companies must be empowered. Allowing suppliers, some of the most important stakeholders of any organisation, to be adequately “incentivized, coached, sanctioned and rewarded” by the company poses a central role in “achieving company objectives”.

The Client company of this project had recently redefined the company’s vision and objectives, incurring a series of acquisitions, in different territories, to further expand its mission. However, given the different backgrounds of the acquired companies, there was no formalised process to standardise the Procurement activities of the group, which could jeopardise the attainment of the defined strategic goals. A disconnected operation of the different companies would pave the way for inefficiencies. Thus, the objective of this dissertation is to define the global Procurement function of the Client company, following its current strategy of growth and internationalisation. Through the development and implementation of this function, it should be feasible to:

1. Define the organisational and operational model that allows the harvesting of synergies.
2. Implement best practices to manage the execution of the Procurement processes.
3. Define a model and platform for supplier management.
4. Ensure efficiency and agility throughout the different companies and business units of the Client company’s group.

1.2 PwC as a consulting company

PricewaterhouseCoopers (henceforth designated by PwC) was founded in 1998, following the fusion of two organisations- PriceWaterhouse and Coopers and Lybrand. Currently, PwC embodies a network constituted by independent firms, and operates in 156 countries with more than 295,000 people who are committed to delivering quality in assurance, tax and advisory services.

Nowadays classified as one of the largest professional services providers in the world, PwC is part of the group of consulting companies known as Big 4, alongside Deloitte, EY and KPMG. In the fiscal year of 2021, PwC’s gross revenues were US\$45 billion, providing services to 84% of Fortune Global 500 businesses.

PwC in Portugal, Angola and Cape Verde together has 1,832 staff, including 48 partners, of which 31 are in Lisbon, 11 in Oporto, and 6 in Luanda. PwC has been operating in Portugal for over 60 years, with over 1400 employees working in the Lisbon and Oporto offices, and relies on 3 different Lines of Service (LoS)- Advisory, Tax and Assurance. Additionally, it is supported by the team of Internal Firm Services.

The project addressed in this dissertation was developed under the scope of the Advisory team.

Advisory

The Advisory team at PwC helps other companies enhance their performance through the efficiency and effectiveness of the key operations of their businesses. PwC helps companies identify and implement cost-saving initiatives, enhancing their management and control

systems, identifying, and managing risk and generating quality. Additionally, the Advisory team supports key necessities of the clients, maximising their business returns.

1.3 The Client company

The Client company is an established producer of energy and has operated in the market since the beginning of the century, presenting significant growth in the last years, based on a strategy resting in three areas: biomass, solar and photovoltaic energy and decentralised generation of energy.

The commitment of the Client company to the production of energy from renewable sources is aligned with the national and European climate change mitigation strategies, contributing to the decarbonisation of the industry. This has a positive impact on the CO₂ emissions, as well as the dependence on fossil fuels.

Moreover, the Client company forms a group of companies (a head company and subsidiary companies) that, collectively, own and operate energy production facilities in Portugal and the United Kingdom, developing solar photovoltaic and wind projects in these and other countries in Europe. In the length of this dissertation, the term “Client company” is used to refer to the collective entity that is PwC’s client. Hence, the term “head company” is reserved for the cases in which the company that controls the group is concerned, and the usage of the term “Company XPTO” refers to each one of the subsidiaries of the group.

Following the recent growth and internalisation strategy of the Client company and its group, there is an overall focus on standardising, streamlining, and strengthening the processes throughout the group. Consequently, there is a need to identify opportunities for the establishment of synergies and enhanced collaboration between every functional structure of the company, which is the main objective of this project.

1.4 Goals and scope of the project

The overall challenges of this project were related to the extent to which the present structure of the company is capable of supporting the strategy and competitive advantage the Client company aims to achieve. Furthermore, it was necessary to evaluate the level of coherence of every process involved in decision making, across the organisation, and if these processes supported the levels of intended activity. Since the Client company is a group of companies, the proposed structure had to be able to articulate every one of those companies, clearly defining the level of independence, responsibilities, powers, authorities, and levels of report inside the structure. More specifically, in what the Procurement function is concerned, there was a need to clearly identify the purchasing categories, as well as the profile and responsibilities of the roles of the Procurement department.

Altogether, the objectives of the definition of the global Procurement function were the following:

1. Definition of a new organisational model, according to the intended strategy of the Client company.
2. Ensure the efficiency and scalability of the purchasing model.
3. Define rules for supplier relationship management.
4. Manage risks in the execution of the purchasing processes.

All in all, the fulfilment of these objectives is expected to result in an organisational model capable of responding to the strategic challenges the Client company faces, by capturing the particular strengths of the organisation. The clarification of roles and responsibilities, as well

as of report lines of each functional area involved in the Procurement process, will enable an effective and efficient operationalisation of the model. Additionally, the definition of the purchasing categories will allow adequate management of processes and associated risks.

The development of the Procurement model presented in this project is then based on five fundamental principles, that were taken into consideration while conceptualising and designing a robust Procurement function:

Organisation - define the organisation of the Procurement function by reinforcing and implementing functional leadership of the corporate structure of the Client company, adjusting it to the organisational structure of every involved business.

Governance/Processes - strengthen the governance of the Procurement function with the definition of robust processes and the implementation of procedures that empower the governance of the function.

Systems - implement standardised purchasing systems throughout the organisation, clearly defining a phased implementation roadmap.

Competencies - reinforce skills and competencies in the Procurement function through the identification of required profiles, considering the existing ones versus gaps.

Follow up and Control - enhance the follow up and control of the function by implementing improvement measures in the collection and generation of function-specific information.

1.5 Methodology followed during the project: *PwC Transform*®

The project presented in this dissertation was developed following the *PwC Transform*® framework. With the objective of reflecting consistent work across the network, PwC developed a methodology capable of conveying the experience that has been on the core working practices of the firm, through a time efficient, quality enhancing set of initiatives. *PwC Transform*’s® main goal is to assess and revise the client’s needs, as well as helping them implement transformational, organisational, operational and technological changes based on holistic overviews in the form of robust recommendations. Moreover, it provides a step-by-step approach to the typical activities in any transformational change project. The graphic representation of the methodology is presented in Figure 1, below.

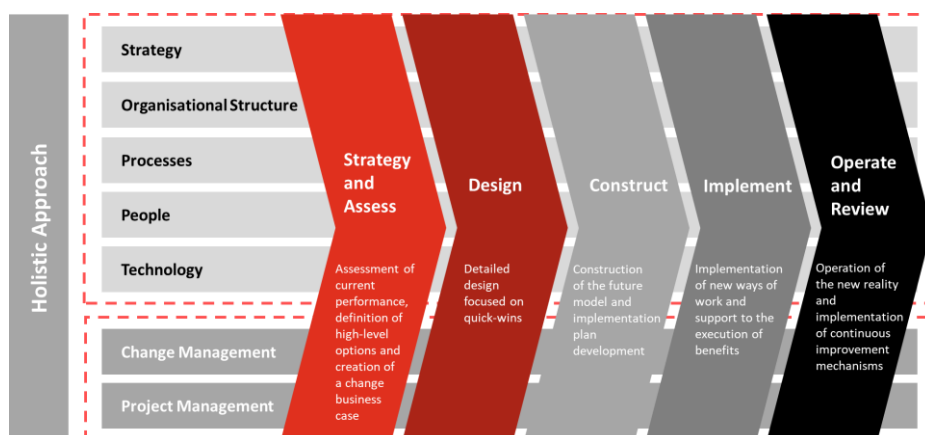


Figure 1- Diagram of the *PwC Transform*® framework

In this project, the focus of work on transformational change was directed towards the Strategy & Assess, Design and Construct phases. Even though the Implementation roadmap of initiatives was developed, the Implement and Operate & Review phases were the responsibility of the Client company. The five stages of the Transform Framework, applied to this project, are described below:

Strategy and Assess

Transversal to any consultancy project, this phase entails the diagnostic of the AS-IS Model of the organisation whose problem the consultant company is trying to solve. In this step of the framework, there was a need to deeply understand the organisational needs of the Client company that would allow a detailed assessment of the current state of the procurement function and its operating model. With the objective of envisioning the future state attainable in the subsequent phases, the assessment stage addressed the assessment of the company's level of maturity as well as the constraints for the establishment of the desired strategy.

Design

The design phase of the framework entails the conceptualization of the changes to be implemented in the organisation with the ultimate objective of achieving the desired operating model, and immediately follows the definition of the AS-IS model. The design phase considers the establishment of benchmarking initiatives and takes into account both the desired state of the company and best practices, by focusing on quick wins.

Construct

This phase is used to build the changes to the organisation's operating model to ensure they deliver the expected benefits. Following the principles considered in the Design phase, it comprehends the establishment of the TO-BE model, which is designated by Target Operating Model, as well as the Procurement Policy. This last document intends to establish the best practices that guide the operationalisation of the future procurement function. Additionally, due to the necessity of establishing a system capable of fostering supplier management, a mapping of a supplier portal requirements was carried out. Finally, with to allow the execution of the following phase, an initiative roadmap was executed.

Implement (out of this project's scope)

The Implement phase is used to successfully implement the operating model changes and plan for subsequent benefits delivery, run the programme management processes and apply the change and communications management activities and evaluation techniques to support the change initiative at this stage.

Operate and Review (out of this project's scope)

Operate and Review - used to hand over the operating model changes to business as usual, realise the expected benefits and set the foundation for continuous improvement; run the programme management processes to support the change initiative at this stage; assess the success of change, finalise the sustainability plan and complete knowledge transfer and hand over.

1.6 Dissertation's structure

This dissertation is structured based on five chapters.

The first chapter encompasses a brief presentation and high-level explanation of the content of the remaining four chapters. In addition to outlining the motivation and objectives of the project, it presents both PwC and the Client company, as well as the applied methodology to solve the problem presented in this dissertation.

The second chapter provides a theoretical overview of the main topics related to this dissertation, exploring the literature in the areas of Procurement, Organisational Design, Category Management and System Functional Requirements. The focus of this chapter was to define best practices in the definition of the Procurement function.

The third chapter, in the first stance, provides an overview of the performed analysis aiming at defining the AS-IS model. This phase entailed the performance of a spend analysis of the group's purchases, covering the methodology and the summary of the identified key findings. Moreover, this chapter explores the maturation assessment process, according to the ten diagnostic dimensions of the BAT (Business Analysis Toolkit) applied to the Procurement function. Finally, the desired parenting style for the future structure is identified, and the improvement opportunities for the Procurement function are presented.

The fourth chapter compiles the second, third, fourth and fifth stages of the project, by defining the operationalisation of the TO-BE model. Initially, it sets the baseline for the Target Operating Model to be implemented in the Client company, followed by the formalisation of a Procurement policy, setting the rules and guidelines with the objective of standardising procedures throughout the group. Moreover, this chapter establishes the functional requirements to be considered in the development/exploration of a platform for communication with suppliers. Finally, it describes the process of gathering the key initiatives to be implemented in the future with the objective of attaining an effective rollout of the desired structure for the Client company. Thus, an implementation roadmap is outlined, describing the key activities to be performed.

Finally, the fifth chapter of this dissertation provides a closure to the developed project, highlighting the main outcomes and conclusions that were established throughout the performed work. Additionally, some considerations on key success factors of implementation and main issues to be addressed by the Client company are presented, after the project's conclusion.

2 Literature review

The revision of Procurement's activities and roles have been a subject of study for several years now. Different companies have different approaches to purchasing activities, and the design of the Procurement function has major implications on the outline of a company's strategic objectives.

Hence, the first part of this chapter addresses the stages in the Procurement process and the role this function plays in crystalizing the production and retention of value for organisations. This is of key importance to underline the responsibilities entailed in the performance of Procurement activities in the Client company, as well as the necessary guidelines, rules and procedures to be established.

Secondly, important considerations regarding organisational design are established, setting the grounds for the definition of structure design capable of empowering the Client company's capabilities.

Finally, with the objective of designing a supplier portal capable of centralising the communication with suppliers in a single platform, research was performed on the conception of systems' functional and non-functional requirements.

2.1 The Procurement process

The procurement process is not carried out homogeneously in every company. For some organisations, this function assumes merely administrative significance (associated with buying goods and services for the lowest price possible); and for others, it has an extended meaning, compiling important steps to help them achieve their businesses' core strategies. (Eatough, 2014).

Moreover, the distinction between purchasing and procurement is not entirely homogeneous throughout organisations. While some assume the procurement function to "encompass a range of activities from sourcing supplier to updating terms" (Wilson, 2021), others restrict its scope to the actual order of purchases to suppliers (previously negotiating proposals from potential suppliers and carrying out the delivery of goods afterwards). Adding to the discussion, some authors such as Ramsay (2001) consider that purchasing encompasses everything related to acquiring resources outside a firm's boundaries, while others such as Eatough (2014) defend that, due to its strategic rather than merely tactical significance to companies, the Procurement function should have a broader scope than purchasing.

With the objective of clarifying these terms and coherently addressing them throughout the dissertation, and following most recent considerations on the matter, the procurement process is considered to include all the sourcing, purchasing and payment stages of an organisation's process of acquiring goods and services. Moreover, the purchasing process is considered to only encompass the negotiation, triggering and handling of purchase orders, and receiving and inspecting the delivered goods.

If duly addressed, the Procurement process can pose major significance to relationships with internal and external stakeholders by aligning the company's overall objectives with the mechanisms that suppliers possess to allow the achievement of those objectives (Monczka, et al. 2016). The continuous improvement of these relationships must be reflected in the Procurement function of an organisation.

According to Rowbotham et. al (2007), the responsibility and overall objectives of a purchasing department may include:

- Assessing the needs for the acquisition of goods and services throughout a company's different areas, ensuring its sourcing, and qualifying potential suppliers to satisfy such needs, according to relevant criteria to the company.
- Engaging, fostering, and maintaining mutually beneficial relationships with suppliers without under looking the opportunities to continuously improve such relationships.
- Performing, either centrally or at a local level, cost reduction initiatives such as spend analysis and planning for medium and especially long term, among others. The identification of these initiatives is only possible through a committed effort to monitor the external and internal environment trends.
- Effectively maintain communication with every internal and external parties involved in Procurement activities.

Just as Rowbotham et al. (2007) mention, there are a number of distinct elements and steps involved in the process of purchasing goods and services for a company which, once correctly identified, allow an organisation to efficiently and effectively carry out the purchase function. According to the same author, some of the steps in the procurement process include:

1. Receiving the request, usually in the form of a Purchase Request (PR), from requesting areas inside the company.
2. Establishing the product or service specification.
3. Classifying items and grouping them, assessing the possibility of being provided by the same supplier.
4. Sending formal requests to potential suppliers.
5. Evaluating the received proposals.
6. Selecting the most beneficial proposal.
7. Placing the order, usually in the form of a Purchase Order (PO), to the supplier.
8. Assessing due-date compliance with the supplier.
9. Monitoring the operation, confirming the receipt and inspection of goods and services, and if the quality of delivery is performed according to requirements.
10. Keeping information on supplier's price, quality, and delivery performance for future evaluation.

As presented in Figure 2, the Procurement process can have an impact on the strategic and tactical levels of the established roles and responsibilities of the function for organisations.



Figure 2- Procurement roles and responsibilities, adapted from (Monczka, et al. 2016)

2.1.1 The importance of Procurement and purchasing for organisations

The way organisations face procurement and the purchasing function inside their structure has been evolving throughout the years, and because of this, the importance attributed to them has been fluctuating as well.

Barney (2012) argues that purchasing and supply chain management have a direct impact on the constitution of competitive advantage. According to the same author, the argument for this reasoning is based on the strategic factor market theory, that argues that when companies have a more accurate perception of the prices practised in the market (which can be obtained by an effective procurement function), they are more prone to acquiring resources in a way that generates profits, thus enhancing competitive advantage.

Furthermore, Kraljic (1983) highlights the strategic significance of the purchasing activities in the context of organisations considering three dimensions:

1. **Effective relations-** the main pillars of the corporate setup must be translated into the Procurement function to exploit the company's full buyer power, considering the trade-off between control (centralised structure) and flexibility (decentralised structure).
2. **Systems Support-** the effective performance of the Procurement function depends on the constant update on business objectives, vision, and plans. This data is necessary to swiftly and beneficially respond to market changes or suppliers' negotiation activities, which is the basis for maintaining a competitive advantage. Without a proper system that allows this exchange of information, the company can incur in increased overall costs, legal penalties, inadequate stock, and other critical issues regarding Procurement activities.
3. **Staff knowledge and skill-** the enhanced strategic thinking, awareness of the overall business and adaptability are skills and capabilities that are valued in the Procurement function of a company, and which should be duly retained and conveyed throughout the organisation.

Moreover, Monczka, et al. (2016) also highlights the importance of the adequate performance of activities related to purchasing in five dimensions:

1. **Increase value and savings-** the capabilities of an organisation's supplier base can positively influence the creation of value on the final product or service.
2. **Building relationships and driving innovation-** engage in conjoined initiatives with suppliers with the objective to globally reduce costs, hence promoting added-value innovative activities.

3. **Improving quality and reputation-** with the growing specialisation and focus of companies in their respective areas of competence, there is a greater need for these organisations to outsource the remaining activities of the value chain. This reliance on suppliers must be accompanied by an assurance that they comply with the quality requirements established by the buying company.
4. **Reducing time to market-** having a close relationship with suppliers by involving them early in the process benefits product development times and quality.
5. **Managing supplier risk-** the involvement of third parties, as is the case in every new relationship with a supplier, entails the augmentation of risks to the organisation, that should be duly analysed and mitigated.

Ramírez et al. (2020) concludes that procurement's central role in strategy is related less to efficiency and more to resilience, arguing that this function is uniquely positioned to produce a long-term value-creating system.

2.1.2 The Source-to-Pay (S2P) process

Source-to-Pay (S2P) is the end-to-end process a business uses to find, contract, buy and pay for goods and services. Within the S2P process, there are two major subprocesses: Source-to-Contract (S2C) and Procure-to-Pay (P2P) focusing on strategic and tactical activities in this process, respectively.

The steps in each one of these subprocesses can vary from organisation to organisation, due to specificities of the purchased goods and services, but nonetheless follow a common line, presented in the following sections. The S2P cycle is considered to be the foundation of the procurement process in this project, and its representation is depicted in Figure 3. Monczka, et al. (2016) are vastly mentioned and referred to in the literature regarding the basic principles of Procurement, hence the recurring reference to these authors throughout this section.

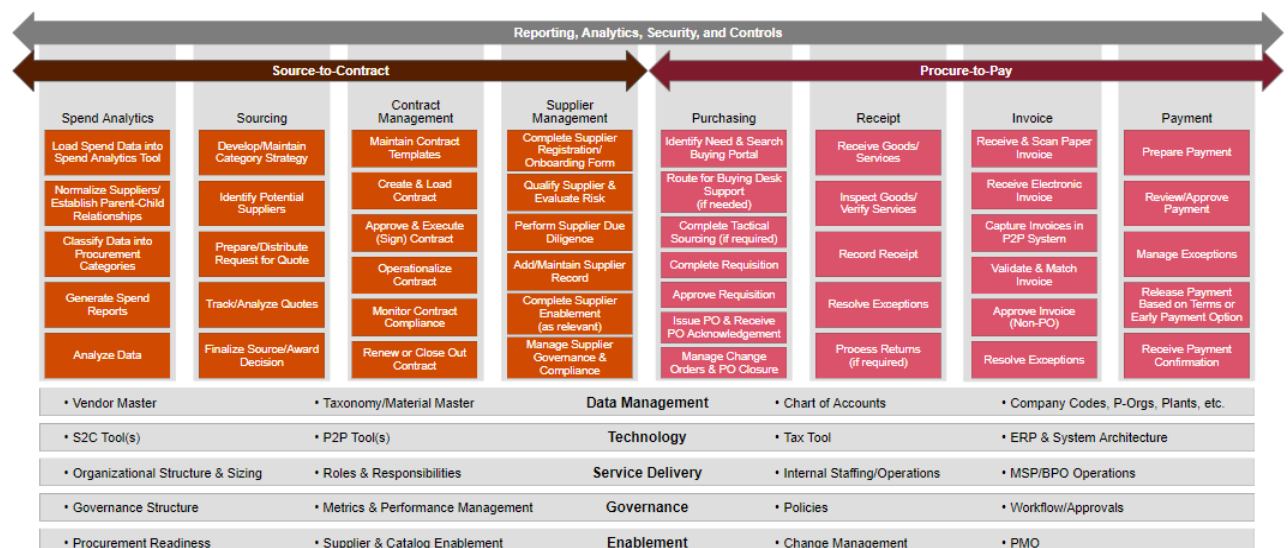


Figure 3- Representation of the Source-to-Pay (S2P) process overview (PwC, 2019)

A. Source-to-Contract (S2C)

Spend Analysis

According to Monczka, et al. (2016), spend analysis refers to the “process of collecting historical data by commodity, relative to demand from the lines of business, with the exception of personnel expenses, occupancy, and corporate spend”. The same authors identify some of the relevant topics to be addressed while conducting a spend analysis:

- Identify what did the company spend its money on, in the last revision period.
- Identify the suppliers awarded with the majority of the company's purchasing volume.
- Identify which areas of the business had greater expenditure.
- Identify opportunities to achieve synergies by integrating spending across different business units.

Currently, there are a wide number of platforms available on the market that perform analysis on organisations' spend. Apart from analysing data through the presentation of graphical elements that convey business insights and reports on spend incurred by companies, these tools help classify data into Procurement categories. In fact, spend analysis is a very important element for improving process efficiency, and is the basis of best practices in spend management such as taking advantage of data to develop relevant insights to the strategic and tactical decisions of the company, making real-time expenditure data available and analysing patterns in the Procurement processes (Handfield and Jeong, 2019).

Sourcing

The sourcing stage of the S2C process is fundamentally related to finding the right supplier for an identified need. The need to find a new supplier to fulfil a certain necessity can be originated from the lack of existing contracts with preferred suppliers, or the case of necessity to acquire new goods or services. Furthermore, in this last case, even though no specific technical information regarding the good or service is available, the requesting department or area should nonetheless provide some preliminary information to the Purchasing department (Monczka, et al. 2016).

For a supplier to become part of a company's supplier base, the organisation must be capable of identifying the main requirements that allow for a certain provider to be deemed as a potential supplier. This assessment should be based on criteria such as quality, delivery performance, cost, and technical criteria, among others. These criteria then constitute the basis for the qualification and selection process, thus allowing the Procurement function to start gathering information to assess these parameters alongside illegible suppliers (Monczka, et al. 2016).

For this matter, a Request for Information (RFQ) or similar document can be sent to the potential suppliers by the buying company, which is succeeded by the awarding of the business contract to the most beneficial offer. At least three quotations should be requested from the market, according to best practices (Monczka, et al. 2016).

Finally, once the preferred supplier is selected, negotiation initiatives can be conducted to establish a beneficial relationship between the two parties involved. This process ends with the adjudication of the chosen proposal.

Contracting

The elaboration of contracts has the objective of establishing a written agreement to govern the supplier relationship, which should establish the roles and responsibilities of both involved parties, as well as corrective measures to be taken if any of them fails to comply (Monczka, et al. 2016). The elements to be included in these documents vary between organisations, however, Monczka, et al. (2016) identifies some of the key elements to be considered:

- Definition of service or product, purchase orders, on-time delivery and prices that are part of the trading relationship.
- Scope of the contractual agreement, including limitations on the validity of the contract.

- Specifications on quality, health, safety, environment, and other relevant dimensions.
- Payment conditions.
- Liability agreements.
- Intellectual property.
- Confidentiality agreement.
- Monitoring indicators.
- Signatures of the involved parties.

Supplier Management

Once a new supplier is added to the supplier base of a given organisation, there is a need to onboard them into the organisation, as well as monitor and manage the governance and compliance mechanisms. Furthermore, the assessment of risk regarding the supplier relationship should be conducted as well.

As referred to by Monczka, et al. (2016), supply management strategies are developed with the aim of aligning both the supplier's and the buying organisation's objectives. According to the same authors, this should include:

- A clearly defined governance mechanism of the relationship.
- Alignment of objectives, targets and metrics for the supplier-buyer relationship.
- Formalisation of a plan regarding mutual Procurement initiatives.

Additionally, there must be an assessment of suppliers' performance and compliance, with the objective of ensuring that the supplier is continuously contributing with effective, efficient, and added-value operations to the relationship. Hence, the Procurement department must design a multi-criteria matrix, which sets the dimensions used for supplier evaluation. This assessment validates the relevance of each provider to the supplier base and should lead to mitigation actions if the evaluation is not satisfactory.

B. Procure-to-Pay (P2P)

Requisitioning

The P2P process starts with the identification of the purchasing needs for goods and/or services, which then constitute the requirement that triggers the P2P process.

These requirements can express the need to acquire a good or service, according to the activities and operations that each requesting area performs Monczka, et al. (2016).

The requesting areas should provide as detailed a description of their needs as possible. As best practices recommend, every organisation should duly conduct the establishment of an annual purchase plan and budget, in which they should integrate the different purchasing necessities of the several requesting areas within their structure. Nonetheless, there are some cases in which the identified requirements have an urgent character, and in that case, the procurement function should be able to satisfy them accordingly. (Monczka, et al. 2016).

Monczka, et al. (2016) explains that "the most common method of informing purchasing of material needs is through a Purchase Requisition" (PR), and even though this document can assume many forms, the authors identify the main elements:

- Identification and necessary informative details of the required good or service.
- Required quantity and required date of delivery.
- Estimated unit cost.

- Operating account to be charged.
- Date of requisition.
- Authorised signature.

In the case of requisitioning services, the requesters should fill in a Statement of Work (SoW) that specifies the requirements of the service to be provided (Monczka, et al. 2016).

Approving

Given the specific context of each organisation, the requisitioning of goods and services must be approved before the placement of an order to the supplier, validating the need to make the requested purchase. The thresholds for each approval process and authorised signatories must be specified in the Procurement Policy of each organisation.

Ordering

This phase of the process relates to communicating the order to the supplier, following the previous identification of the adequate supplier to provide such good or service. This is performed according to one of two situations: the order can be directly performed to the supplier if it is part of the supplier base and there are contracts in place to mediate the relationship; however, if there are no identified preferred suppliers, the Procurement function of the organisation must identify the potential suppliers to fulfil such need, through the S2C process.

The order of goods or services to suppliers is performed, generally, through the emission of a Purchase Order (PO), that besides specifying the details of the order such as quantity, specifications, quality requirements, price, delivery date, method of delivery, ship-to address, PO number, and order due date, can include legal conditions and instructions (Monczka, et al. 2016). In fact, the triggering of a Purchase Order also triggers the emission of additional documents that support the trading activity between the supplier and the organisation. Consequently, and following best practices, every document regarding accounts payable, order status and others deemed necessary for the adequate completion of the process.

As it is a trend across several industries, companies are increasingly adopting the use of systems to perform documentation management, more specifically in the Procurement function, using platforms such as SAP or equivalent ERP systems.

Receiving

After the process of ordering the goods or services is completed, the buying company must confirm the adequate receipt of the goods and services, inspecting or verifying them, and duly recording the process in the system used for this effect.

In the case of non-conformities, the company that requested the goods or services must manage and communicate them to the supplier (Monczka, et al. 2016). Furthermore, and if deemed necessary, there can be a need for processing returns of the acquired goods.

Invoicing

Following the adequate delivery of goods or services to the requesting company, the latter issues an authorization for payment to the supplier (Monczka, et al. 2016). Moreover, and once again highlighting the necessity of duly managing the documentation triggered by the procurement process, in this stage it is necessary to match every register executed by both the supplier and the buying company.

Payment

The final stage of the P2P cycle entails the formalisation of payment to the supplier, following the conditions previously established by the two parties. Any exception must be managed according to both the contract and the Procurement Policy of the organisation.

2.2 Structure Design

The design of the supportive structure of the Procurement process must be duly rooted in best practices of organisational design since the goal of this dissertation is to establish a model capable of adapting to the specific conditions of the Client company. In this sense, the design of such architecture must range from a high-level overview of the main influencing factors of organisational design to the specific means of dealing with each outlined purchasing category.

2.2.1 Category Management

As previously introduced in this dissertation, adequate management of the Procurement process can have an important impact on the competitiveness of a company. Despite this, not all goods and services that are purchased by an organisation should be managed based on the same principles, nor should all supplier relationships be treated the same way. Best practices advise the differentiation and classification of the purchased resources, and similarly classified purchased items should be managed identically (Hesping and Schiele 2016).

According to Monczka, et al. (2016), a category “refers to a specific family of products or services that are used in delivering value to the end customer”, and category management is expected to translate the business vision and strategy into operational and tactical activities that promote the achievement of such objectives. This can be performed through the development of new technologies or products, reduction of the company’s supply base, and reduction of costs, among other measures. Moreover, following the authors’ considerations, the different category strategies should be able to identify the specific business units’ requirements for the purchased goods or services (developing specific BU capabilities accordingly), develop a price/cost strategy, establish the contracting and negotiation strategy, as well as the development of a continuous improvement plan based on the identification of improvement opportunities.

The strategies and scope of focus on managing these categories are, nonetheless, subject to variability of application. The contingencies on which these category management strategies are based vary, centering their focus on more financial, innovation, environmental or other types of performance. Hence, several approaches emerged in the context of requirements variety of category management strategies, shifting between competitive priorities (Ateş, 2014).

In the last years, several methodologies have been developed in the area of Category Management, most of them based on positioning techniques. Some of the most recent are, for example, *The Purchasing Chessboard* and *Criticality Analysis*. The first methodology encompasses four approaches that entail, in total, 64 overall methods centred on the reduction of costs by accounting for two variables- buyer and supplier power. The second one, however, does not focus on the most common practice of evaluating categories for their importance for the purchasing process, but on their criticality and significance for the generation of “value for money”. In this sense, it opposes commercial criticality, classifying activities between “support” and “revenue-generating”, and operational criticality (low to high) (Cox, 2015).

Nonetheless, as Hesping and Schiele (2016) highlight, the most used methodology/framework to develop a category management strategy is the Kraljic Matrix, with some studies reporting usage of this purchasing portfolio model of around 61% in companies located in certain regions of Europe (Bos et. al, 2005). This extended use of the matrixial approach is due to a variety of factors, such as the simplicity of application and interpretation, allowing for a

comprehensive analysis of the different tactics to be carried out in each scenario; a great focus on the implications and tactics in the case of strategic categories, centred on long-term analyses; and a pragmatic approach to the matter (Cox, 2015). Further considerations on the Kraljic Matrix are presented in the subsequent section.

2.2.2 The Kraljic Matrix

The Kraljic Matrix is a two-by-two matrix that distinguishes four types of categories, according to two dimensions: strategic importance of the purchase and the complexity of the supply market (Kraljic, 1983). The main objective of this portfolio model is to advise companies on the interaction with suppliers by identifying the information necessary for category management and the decisions to be made by the organisation regarding purchasing activities, accordingly (Caniëls and Gelderman, 2007).

Kraljic (1983) explains that the first dimension (strategic importance of the purchase) encompasses a set of criteria such as the cost of materials/total cost, value-added profile, profitability profile, and so on; while the second dimension (complexity of the supply market) is related to supply, supplier concentration conditions, technological development panorama, entry barriers, logistic costs and complexity, among others.

Each one of the four portfolio quadrants of the matrix then leads to the identification of the different categories, which are divided into non-critical, leverage, bottleneck and strategic purchasing categories (Hesping and Schiele 2016). A graphical representation of the matrix is presented below in Figure 4.

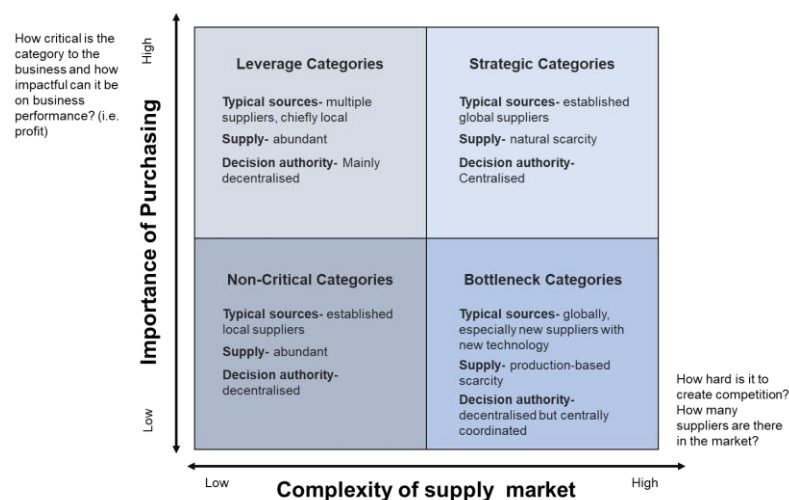


Figure 4- Representation of the Kraljic Matrix, adapted from (Kraljic, 1983)

As identified by Hesping and Schiele (2016), the four different types of categories outlined in the Kraljic matrix build the basis for the strategic recommendations and tactical sourcing levers that maximise purchasing performance in each case. Following Kraljic's work on the establishment of the matrix and the four categories, several authors have further detailed and elaborated recommendations on supply management of the identified purchasing categories (Hadelar and Evans, 1994; Olsen and Ellram, 1997; Nellore and Soderquist, 2000; De Boer et al., 2002; Day et al., 2002; Caniëls and Gelderman, 2005; Cavinato, 2006; Handfield et al., 2009; Hess, 2010; Van Weele, 2010; Monczka et al., 2016; Johnson et al., 2011; Lysons and Farrington, 2012; O'Brien, 2012).

Non-critical (low strategic importance; low supply risk)

- Efficiently performing and processing the acquisition of goods and services.
- Carry out product standardisation.

- Consolidate or leverage volume.
- Inventories optimisation.
- Reduce supply base.
- Decentralisation of the Procurement process.

Leverage (high strategic importance; low supply risk)

- Competitive supplier selection/control.
- Capitalise on buying power.
- Perform spot buying.
- Define a pricing target.
- Establish short term contracts.
- Perform high-volume purchases.

Bottleneck (low strategic importance; high supply risk)

- Expand product specifications.
- Diversify supply sources.
- Ensure necessary volume in each purchase.
- In case of product shortages, draft contingency plans.
- Closely monitoring suppliers' performance.
- Establish medium to long-term contracts.
- Engage in intensification of supplier relationships
- Identify substitute products.

Strategic (high strategic importance; high supply risk)

- Strive for and prioritise long-term relationships with suppliers.
- Develop contingency plans.
- Engage in conjoined innovation initiatives for mutual benefit.
- Perform supplier performance management.

2.2.3 Organisational structures

For decades, several studies have been conducted in the field of theory of organisations, presenting these as complex, collective actors that mattered for the change of the society as a whole (Lounsbury and Ventresca, 2003). However, the approaches taken by academics on the subject are far from being consensual, continuously suffering re-evaluation. Robbins and Coulter (2002), define organisational structure as the “formal framework by which job tasks are divided, grouped and coordinated”. Furthermore, according to Child (1972), organisational structure is defined as the “formal allocation of work roles and the administrative mechanisms to control and integrate work activities including those which cross formal organisational boundaries”.

Following the considerations of the same author, three major arguments explain the settings of the different structures found in organisations:

1. **Environment-** the surroundings each organisation operates in has some degree of influence on the internal governance mechanisms, taking into account the targeted positioning in terms of performance.
2. **Technology-** the technology and set of software systems used by each organisation have an impact on the workflow of their processes, as well as the designed roles and structures.
3. **Size-** larger organisations tend to have more opportunities for specialisation, which often materialises in a larger number of functional structures carrying heterogeneous characteristics. This can result in decentralisation of activities, which requires enhanced resource management capabilities.

Organisational design takes place every time managers develop or change the structure of their specific organisation, and as further emphasised by Robbins and Coulter, the process of organisational design follows six key elements that are presented and duly explained in the following section (Robbins and Coulter 2002).

2.2.4 Elements of organisational design

Work specialisation

The term is used to describe the “degree to which tasks in an organisation are divided into separate jobs”, which leads to different employees performing different stages of a task to achieve a final desired outcome (Robbins and Coulter 2002). In the second half of the 20th century, productivity was often tightly connected with work specialisation, a practice that was taken to a full extent in several industries. But since its damage to workers who were bound to perform the same repetitive task over and over again was noticed (which led to fatigue and poor quality of work, among others), the economic benefits of this practice started to decay (Robbins and Coulter, 2002). This accentuated the limitations of work specialisation when taken to extremes. This concept is further explored by other authors, such as Colson (2019), who mentions that Data Science, an emerging field in the current market, “needs generalists, not specialists”.

Departmentalisation

This concept is used for “grouping together jobs implying common tasks with the objective of allowing its coordination”, and can be performed through a variety of criteria, such as product, functional, geographical, process and customer departmentalisation, often utilised in larger organisations aiming at adapting to different settings and environments (Robbins and Coulter, 2002). Furthermore, the engagement of different departments in organisations business areas leads to the appearance of cross-functional teams. As companies face new and complex challenges, engaging in these types of teams is a “way to gather experts in temporary groups to solve problems they’re encountering for the first and perhaps only time” (Edmondson, 2012).

Chain of Command

The chain of command refers to the “continuous line of command that extends from upper organisational levels to the lowest levels and clarifies who reports to whom” (Robbins and Coulter 2002). This concept is helpful for employees since it offers them direction on who is ultimately accountable for the supervision of their work, hence defining the entity responsible for defining the requirements and providing overall directions on fulfilling a given role.

In this sense, two relevant concepts come into the discussion: responsibility and authority. Authority refers to the “rights inherent in a managerial position to tell people what to do and expect them to do it”, while responsibility is related to “an obligation to perform any assigned roles” (Robbins and Coulter, 2002). The interaction between the two terms and their

implication on the chain of command is further explored in several contexts, such as that of aviation, when addressing the duality of responsibility and authority falling on the hands of the controller or pilot, in the case of a plane crash (Billins, 2018).

Span of Control

The span of control refers to the “number of employees who can, in an effective and efficient manner, be managed by a superior position”, and this concept has relevance in this context because it helps determine the managerial levels an organisation needs (Robbins and Coulter, 2002). As mentioned by Robbins and Coulter (2002), *ceteris paribus*, an organisation isn’t necessarily more efficient with a larger or shorter span of control, since this notion is highly related to the context of each organisation, and is influenced by the level of employee qualification, the extent of standardised procedures, implemented information system, company culture, etc. (Robbins and Coulter, 2002). An illustration of the application of span of control is presented in Figure 5, below.

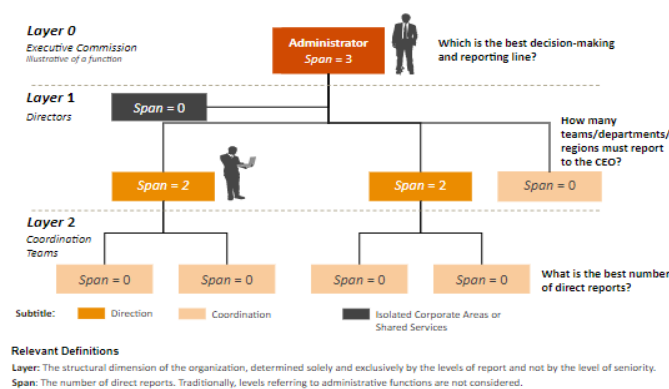


Figure 5- Illustration of a government-model scenario example (hierarchy and support structure)

Centralisation and Decentralisation

The duality between these two concepts, in the context of organisational, is related to the extent to which decisions are taken on either extremes of the managerial chain: either by low management roles, or high-level managers. This decision should reflect the overall strategy of the organisation (Monczka, et al. 2016). Centralisation is present in an organisation whenever decision-making initiatives are concentrated in a single point of the structure, while decentralisation occurs when other layers of management, specifically low levels, are involved and held accountable for making decisions (Robbins and Coulter 2002). For example, if the CPO of an organisation is mainly responsible for the purchasing decisions of the company, the organisational design is based on a centralised structure; However, if the purchasing authority is at a business unit, divisional or site level, that a decentralised structure was the basis for the organisational design (Monczka, et al. 2016). Naturally, the dimension of organisations has an impact on the (de)centralisation of the structure, depending on the agility and decision approval needs and its implications in every involved stakeholder.

Robbins and Coulter (2002) summarise the main factors that influence the amount of centralisation and decentralisation in organisational design, as presented in Figure 6.

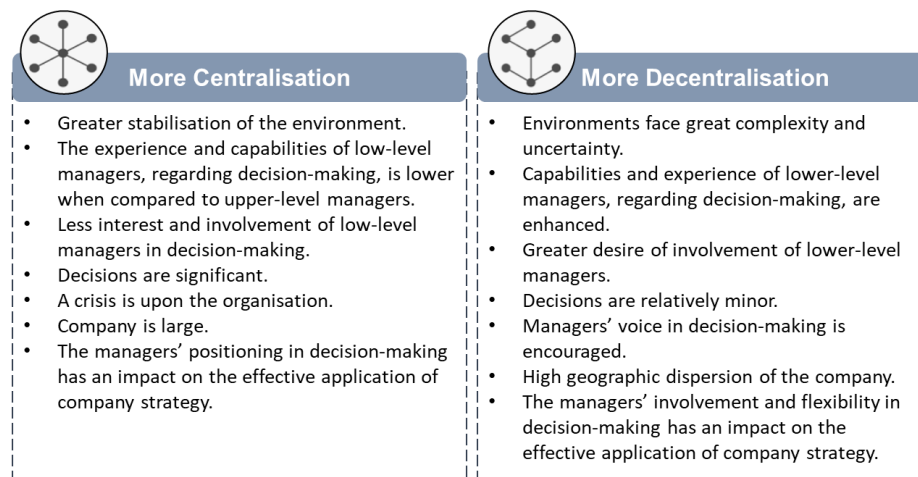


Figure 6- Factors that influence the amount of centralisation and decentralisation, adapted from (Robbins and Coulter, 2002)

Furthermore, there is the possibility of combining the characteristics of both centralised and decentralised structures- items that are common to several business units are purchased at a central level, and the items that are subject to unique requirements are purchased in a decentralised process (Monczka, et al. 2016). This type of organisational design is referred to as centre-led, and according to Monczka, et al. (2016), past studies indicate that it is widely adopted in large firms (54 percent of them), although its usage has suffered a slight decline in more recent years (44 percent estimated using). The same author explains that this migration to a more hybrid structure can be originated from several factors, which include:

1. **Organisational strategy and goals-** efficiency in relation to competition is enhanced by centralising activities, while their decentralisation focuses on the client's responsiveness.
2. **Purchases' similarity-** purchases with similar characteristics can be centralised, which allows the organisation to achieve beneficial economies of scale.
3. **Total purchase expenditure-** purchasing activities tend to be moved to a central-level when the spend is high since this is an opportunity to increase savings.
4. **Overall philosophy of management-** level of desired influence of top management on purchasing related decision-making.

Formalisation

Formalisation refers to the "standardisation level of procedures and rules that are available for employees to execute their roles", and more formalised job entails more available information to execute it properly according to management requirements (Robbins and Coulter, 2002). Several studies have been conducted on this topic, and adding to the dominant conception that 'more formalisation is better', some have even extended the dimensions of study by considering not only the technologies used in each organisation, but the extent to which employees experience formalisation and how it affects their and their teams' frustration and effectiveness levels. These studies seem to follow the same conclusion as the prevailing narrative (Gibson, Dunlop and Cordery, 2019).

2.2.5 Common organisational designs

Organisational design currently presents a high level of variety, due to the different characteristics of companies throughout the world when it comes to their report channels, culture and governance mechanisms. The ongoing evolution of these companies in the context of their specific industries further extends the possibilities in the area of organisational design,

creating a long wide gap between more traditional models and highly innovative contemporary ones. The strengths, weaknesses and key points of some of the main organisational designs are presented and summarised in the following sections.

Functional structure

In this type of organisation, “specialisation favours cost-saving through the achievement of economies of scale and minimal duplication of people and equipment” (Robbins and Coulter, 2002). Moreover, the organisation can attain functional goals, developing specific know-how for the desired function, and are appropriate whenever businesses trade a low number of products or services (Daft, Murphy and Willmott, 2001).

However, functional structures can harm the managers’ visibility of goals on a strategic and tactical level, since it turns their focus to their specific areas, ignoring the larger scope of the organisation (Robbins and Coulter 2002). Adding to this, this type of design shows some difficulties in rapidly adapting to environmental changes due to the incidence of bottlenecks in decision-making (Daft, Murphy and Willmott, 2001), which is a major setback for fast-evolving industries. An illustrative example of this type of structure is presented in Figure 7.

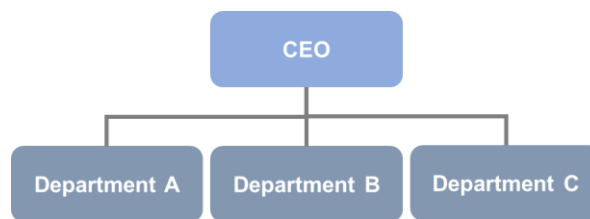


Figure 7- Illustrative example of a functional structure, adapted from (Monczka, et al. 2016)

Divisional structure

The design of organisations considering divisional criteria is results-driven and favours the coordination of a company’s different functions. Additionally, it presents a high level of decentralisation in decision-making by allowing an adaptation of the organisation to the different conditions in which operations take place (considering different regions, clients, etc...) (Daft, Murphy and Willmott, 2001).

Nevertheless, economies of scale are hardly attainable through this design, and integration and standardisation are hampered across the different functions (Daft, Murphy and Willmott, 2001). Consequently, costs, resources and activities can be multiplied across the functions (Robbins and Coulter, 2002). An illustration of this structure is presented in Figure 8.

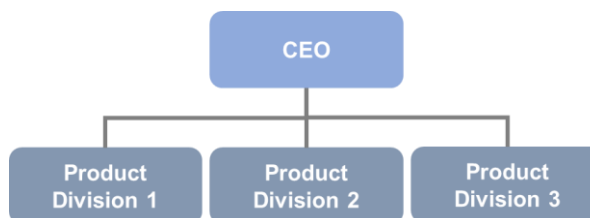


Figure 8- Illustrative example of a divisional structure, adapted from (Monczka, et al. 2016)

Matrix structure

The organisations that follow a matrix design enjoy flexibility in managerial operations, allowing for complex decisions to be made and adapting to quickly changing environments (Daft, Murphy and Willmott, 2001). According to the same source, it is adequately applied to medium-sized organisations that deal with a high volume of products.

The weaknesses of this type of structure are related to the potential lack of clear guidelines and rules, which has an impact on staff training needs. Furthermore, the decision-making

process in this type of organisation can be slow due to the necessity for different levels of approval, which can create conflicts in authority throughout the organisation (Daft, Murphy and Willmott, 2001). This type of structure is illustrated in Figure 9.

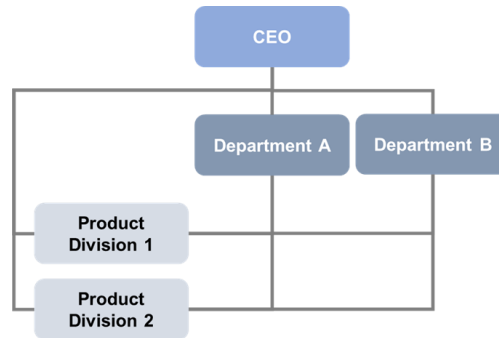


Figure 9- Illustrative example of a matrix structure, adapted from (Monczka, et al. 2016)

Following the evolution of industry trends and considering the cross-functional needs of companies (as mentioned before in this dissertation), several other models were designed for organising companies. These models were designed to promote agility for organisations to quickly adapt to changing environments, as well as allow them to be more responsive to clients and their requirements (Robbins and Coulter 2002). One example of these structures are the team-based ones.

Team-based structures

Team-based structures rely on work groups and teams to perform the company's activities and award the bottom levels of the organisation with greater responsibility and accountability (Robbins and Coulter, 2002). Consequently, this favours independence and empowerment of employees, who are less susceptible to the rigidities of traditional hierarchical establishments.

However, this lack of clear managerial authority can have an impact on the company's productivity. Beers (1996) discusses the empirical implications of the implementation of a team-based structure in a mining industry company, revealing the high susceptibility of these means of organising companies to the fluctuation of employee morale and motivation, building up of tension between co-workers due to lack of hierarchical positioning, and damaged communication inside the company. Nevertheless, as proposed by several authors in response to the presented case, these types of issues in team-based structures can be addressed by promoting and fostering cross-functional collaboration between teams and by clarifying communication channels between them, retaining the knowledge held by every member of the team and disseminating it throughout the group, with the objective of dissuading the feelings of alienation due to lack of role's clarity (Beers, 1996).

2.3 System requirements and architectural decisions

Tofan, et al. (2014) explain how the architecture of a system has an undeniable influence on fulfilment of its functional and quality (non-functional) requirements. The authors build up on these considerations by mentioning that architectural decisions encompass the selection of core elements that will then enable the satisfaction of the stakeholders' needs and concerns, and address tradeoffs between the security of the system and its usability to the end user. Malan and Bredemeyer (2002) extend the insights on this topic by mentioning that these decisions establish the system's fundamental structural elements, their properties, and the connections between them.

According to Khatter and Kalia (2013), "requirements engineering is the process of analysing and documenting the intended functionalities of a software system". The authors also establish a brief description of functional requirements- those that enable the end user to

“perform a function of software or its components”- and non-functional requirements- the general restrictions that should be met by the system and that must be considered in the architectural design. Furthermore, the IEEE defines non-functional requirements as “a software requirement that describes not what the software will do, but how the software will do it” (Institute of Electrical and Electronics Engineers, 1990).

Even though the requirements considered for each system or platform are specific to each case, there are general attributes that should be considered, especially in the case of non-functional requirements. Tofan, et al. (2014) summarise findings on 127 papers, concluding that some of the key elements include security, reliability, usability, scalability, evolvability and safety.

However, in the case of functional requirements, these vary widely across projects (Tofan, et al. 2014). Nonetheless, some authors have proposed frameworks to assess functional requirements needs in certain contexts, such as Axel van Lamsweerde proposing a model for functional requirements based on a temporal logic called KAOS (Knowledge Acquisition in auTOMated Specification) (Khatter and Kalia, 2013).

In a broader scope, other authors have merely underlined common steps in the requirements engineering process. Initially, a high-level definition of the objectives of the platform is a recurring best practice, followed by the elicitation, specification, and modelling of requirements. These activities entail the pinpointing of all stakeholders, an impactful activity in the adequacy of the requirements to the real necessities to which they must respond, collecting every important information encompassed in the established application domain (Aurum and Wohlin, 2005).

These steps are subsequently complemented by the prioritisation of the requirements, based on the overall goal of enhancing a rapid and supported creation of value for the end user and risk reduction (Wnuk et. al, 2011).

2.4 Review summary

The literature review performed in this dissertation harnessed an adequate theoretical framing of the Procurement processes of the Client company. The S2P process entails several stages between strategic sourcing of suppliers and the receipt of goods and services; hence the explored topics built a solid foundation for the provided operationalisation guidelines.

Additionally, the exploration process on Category Management methodologies and strategies allowed further recognition of the importance of duly assessing the specific characteristics of each purchasing category. However, the exercises that enable this categorisation must be simple and straightforward enough to be performed alongside the Client company, since their involvement and active participation are essential to the pertinence of the results.

Moreover, the research on organisational design elements and drivers facilitated the conceptualisation of a Procurement model suitable for the Client company’s necessities, especially the extent of centralisation of Procurement activities. Naturally, this is an intrinsically connected topic with the management of the different categories and the search for synergies between the different companies of the Client company’s group.

Therefore, this dissertation illustrates a practical implementation of Procurement in a reality of internationalisation, geographical dispersion, and lack of standardised guidelines between different cooperating companies, in an industry especially prone to the creation of synergies. Moreover, this project emphasises the importance of maintaining an empowering positioning of the Procurement function in the organisation’s context due to its relevance to the strategic vision of the company. The Client company’s recent expansion led immediately to the necessity of redesigning its Procurement structures to support such objectives.

3 AS-IS Diagnosis

With the objective of defining the Client company's Procurement function, it is necessary to understand the current state across the different companies of the group. Henceforth, apart from analysing the AS-IS organigram of the group, an initial assessment was performed with both qualitative and quantitative analysis, which would further aid the definition of good practises, possible synergies between the companies and establish a path until the desired maturity state.

On the one hand, for the quantitative analysis, and to understand and establish the Procurement function and the purchasing categories, a spend analysis was performed, to enable a comprehensive view of the Client company's current expenditure. On the other hand, for the qualitative analysis of the current maturity of the Procurement function, the BAT (Business Analysis Toolkit) accelerator was the chosen methodology, with the objective of identifying the key gaps between the baseline and the targets for the ten proposed dimensions.

Additionally, an assessment of the desired parenting style to be applied to the Procurement structure was carried out, since the resulting principles had to be expressed in the TO-BE model to be implemented in the function.

Since the Client company is a growing player in the renewable sector, operating along the value chain, the maturity of different companies and context in group integration also bring challenges from the Procurement perspective. The diagnosis allowed the understanding of the existing specificities (e.g., product and service categories management), which helped to develop the future model for the Procurement function. A brief illustration of the value chain context is presented in Figure 10, below.



Figure 10- Representation of the value chain context of the Client company

As a matter of fact, the Client company operates in three main layers of this value chain- Large/Medium/Utility-Scale Wind and Solar project development, referring to energy-producing facilities that feed the grid, bearing different capacities and sizing; Decentralised energy generation, that develops small scale solutions such as solar panels on residential rooftops to produce energy; and Biomass energy production, interfering in the carbon cycle by utilising plant-based materials to generate energy.

3.1 Current organigram

The AS-IS model of the Procurement function of the group was collected alongside the Client company. Due to the different levels of maturity of the different companies, and the need for

the Client company to integrate them all into a common structure as it is, there are several support initiatives established between the different structures of the group.

For instance, due to the high level of maturity of Company G (as further mentioned in the following sections), this company performs most Procurement functions and activities for the head company. On the other hand, the Client company gives support, centrally, to Companies C and D, regarding core solar technical equipment. Apart from the core products, companies manage their Procurement process and procedures without any global guidelines established.

Nevertheless, in the case of the local structure of Company A, purchases are performed by each operational department, with reduced synergies or policies established. Additionally, low communication with the Client company in terms of purchasing needs is performed.

Moreover, in the case of Company F, there is currently no articulation of purchasing needs between this company and corporate level. Policies and procedures are managed independently.

Furthermore, Companies' B and E Procurement reality is still under construction. A graphical representation of the current organigram is expressed below, in Figure 11.

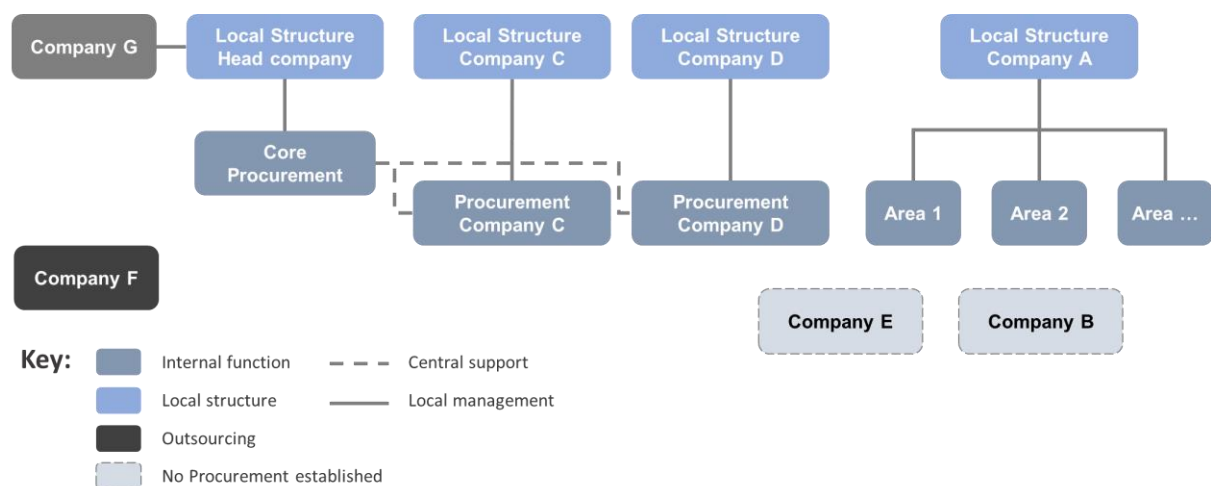


Figure 11- Representation of the current organisational structure of the Client company's group

3.2 Spend Analysis

With the aim of understanding and correctly defining the Procurement function, it is of the utmost importance to realise how much is being spent, according to each purchasing category, and by which company. A spend analysis allows the establishment and validation of a visualisation that is comprehensive enough to outline the current spend of the Client company. The performed analysis was based on three key dimensions: category, supplier and function/department/company.

3.2.1 Methodology, limitations, and assumptions

Initially, a Request for Information (RFI) was sent to the Client company to better understand the context and implications of the market the client is operating in, as well as the key characteristics of the purchased goods and services. Afterwards, the received information was analysed, and the applicability of the data was defined, considering the overall objective of the performed spend analysis. Through the analysis of the executed purchases, the standardised Procurement categories were defined, considering the characteristics of the several companies of the group. Following this, data processing and cleansing were performed, based on the assumptions and categories defined, which finally culminated in the

construction of the spend analysis dashboard. Consequently, the available data processing resulted in the following attributes: Date/year; Existence of PO; Article/Service ID; Article/Service Description; Purchasing Category; Standardised Purchasing Category; Core/Non Core; Supplier; Supplier VAT; Quantity; Value; Currency; Original Currency; Requesting Department; OPEX/CAPEX; Company; Received Invoice. However, considering the different levels of maturity and characteristics of the different companies, there were some limitations to the performed analysis:

1. There were cases of non-defined purchasing categories, for some companies. Additionally, in some cases in which the purchasing categories were defined, the level of granularity varied from company to company.
2. Different companies provided different time-span information, preventing aggregated analysis across all years.
3. In some companies, there was no information provided regarding purchase order number, and the OPEX/CAPEX classification.

According to the discussed limitations, and to perform an aggregate analysis of all companies, several assumptions were defined to harmonise and standardise the provided data. The assumptions were divided into general assumptions and specific companies' assumptions.

General assumptions

1. With the objective of performing analysis at a category level, standardisation of the purchasing categories was performed. This was an iterative process carried out by analysing the existing purchasing categories of each company and the description of the performed purchase. Additionally, operational meetings were conducted with the Client company to analyse the purchasing categories.
2. In the case of non-existing categories, the top-valued transactions were analysed, and subsequently attributed to a standardised category. Nonetheless, some of the transactions did not allow an adequate classification, to which the "Not Classified" label was attributed. Consequently, these transactions were not included in the purchasing categories analysis. Additionally, transactions that do not follow a traditional Procurement process were excluded (e.g.: Taxes, Company Acquisition, Energy Trading Costs).
3. To account for companies where there is no information regarding transaction date, which therefore prevented the application of daily exchange rates, an average annual exchange rate was applied, as smaller fluctuations were observed.
4. Since companies provided different time-span information, the project was focused on the analysis of the year 2021, even though the dashboards include information from 2020 onwards.

Specific companies' assumptions

1. Company A- the transactions presented in this company's data were not classified by purchasing category. Furthermore, since this company operates in a European geography, the short descriptions of the transactions were in a foreign language, hardly understood by the project's team. Hence, to allow the analysis of the purchasing data in an efficient manner, the top transactions (considering a 75.0% of value threshold) were analysed and attributed to a purchasing category.
2. Company C- based on the list of supplier information provided, 90.0% of the purchasing value was categorised. The remaining were listed as "Not Classified" due to a lack of data.

3. Company G- this company presented several transactions classified under “Other materials, acquisitions of other materials, other services, projects”, with a significant weight on the total value (approximately 70.0%). Therefore, it was chosen to classify the top transactions (75.0% of value) under the defined categories, similarly to Company A.

3.2.2 Dashboard analysis

The overview of the current expenditure of the Client company was performed based on three main dimensions, previously presented (category, supplier and function/department/company). These dimensions made up the key principles for the execution of the elaborated dashboards, through the software *Microsoft Power BI*. Due to practical reasons, the developed dashboards have a lateral sidebar that allows the filtering of the information according to four elements: Year (2020, 2021 or 2022); Company; Investment (CAPEX or OPEX); and the purchasing categories. Additionally, the analysis scope is presented through the identification of three main indicators, which are the total number of transactions, the total volume spent in euros and the total number of suppliers. In terms of the graphical representations, the presented elements were made up of pie charts, stacked columns, clustered columns, histograms, and frequency tables. An anonymised illustration of the dashboards is presented below, in Figure 12.

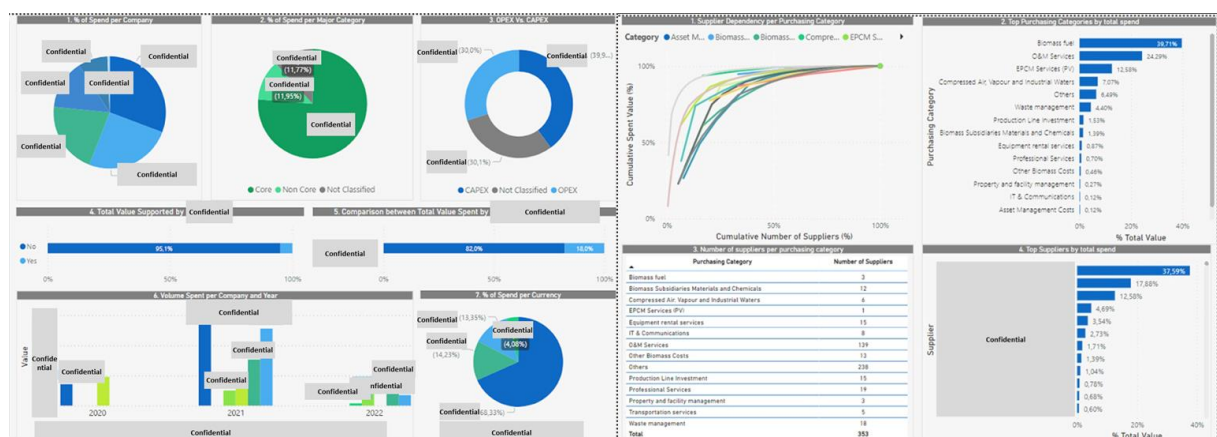


Figure 12- Anonymised representation of the developed dashboards for the spend analysis

Due to anonymity reasons, the conclusions regarding the performed spend analysis are presented in an aggregate manner, considering the Client company's group collectively (11 analyses were conducted in total). The main insights are as follow:

- Core purchases account for at least 76.3% of total value and 25.6% of transactions. This high percentage of total value reinforces the strategic relevance of this type of purchasing categories, nonetheless, the low percentage of transactions allows, in practice, the operational and functional feasibility to handle these purchases with a higher level of attention/customisation.
- Core purchasing categories either present a low number of suppliers (e.g., wind technical equipment) or a high supplier concentration in terms of value (e.g., solar technical equipment). On one side, this can enhance the chances of developing synergies and close relationships with key strategic suppliers, with a high level of cooperation and tailoring of strategic activities between the Client company and external stakeholders. This enables innovation in the value chain, which can result in new technologies, products or services that benefit both the Client company and the upstream partners. However, a high concentration of suppliers can also jeopardise core

business activities in case of misalignment between stakeholders, due to the high potential impact of financial or operational difficulties of partners. An inability to maintain supply, in a high supplier concentration purchasing category, can create a bottleneck, leading to challenges in responding to downstream demand or maintaining stock levels.

- The head company plays a role of support in 32.2% of the value of solar technical equipment purchases, towards the remaining companies of the group. Therefore, there is still room to capture additional synergies through the centralisation of this core purchasing category with the objective of achieving economies of scale and enhanced buyer power.
- Apart from the purchases centrally supported by the head company, very few suppliers were found in common (only three suppliers between Company C and Company G). Consequently, and in case further centralisation/creation of synergies is conducted, there are higher chances of attaining economies of scale and subsequent competitive advantage.
- No standardised purchasing categories throughout the companies of the group, preventing an aggregate and harmonised analysis, which hampered the identification of the different companies' needs and potential for synergies between them.

3.3 Maturity Assessment

With the objective of assessing the status of the group's Procurement function and processes, a high-level diagnosis of the current maturity was performed. For this purpose, 10 interviews were carried out with the focal points defined in each of the group's companies.

As previously mentioned, this part of the diagnosis was performed following the BAT methodology, to identify gaps between the baseline and targets for the analysed dimensions.

3.3.1 BAT Methodology

The Business Analysis Toolkit (BAT) is a catalogue of tools that are aligned across 9 perspectives, or 'lenses', that span the breadth of an organisation. The BAT has a two-tier structure which allows the involvement in initiatives with PwC's clients to discover the real causes behind the challenges they are facing and help deliver real value by addressing them in the scope of the conducted projects. (PwC, 2015)

The first level of the BAT encompasses a set of questions that results in a high-level maturity assessment across several areas. In this case, the Procurement function of the Client company was the area of interest, and the objective was to identify and prioritise the areas that may need more detailed work to deliver the greatest value for the function. A template of the maturity assessment sessions is presented in Appendix A.

For the assessment of the Procurement function, the dimensions were chosen focusing on delivering an end-to-end approach to the Source-to-Pay (S2P) process, defined by the operational team of the project (both PwC and the Client company stakeholders). Regarding the 10 established dimensions, the conclusions can be drawn by self-assessment carried out by the focal points. Additionally, these points reflect the perception and opinion on the current state of the processes, by the different companies of the group. Due to feasibility reasons concerning the project's scope and timings, validity, verification, and auditing work (desktop procedure) of the previously identified constraints were not carried out.

The 10 identified and established BAT dimensions were the following:

- **Government Model-** related to the development of procurement policies, processes and formal procedures, functions, and responsibilities, in addition to the management of purchasing categories.
- **Planning and Budgeting-** related to the procedures and measures concerning the annual procurement plan and the procurement budgeting.
- **Sourcing-** related to the practice of locating, selecting and qualifying suppliers based on a set of criteria.
- **Supplier Management-** related to supplier relationship management and the assessment of their performance.
- **P2P process-** related to the operationalisation and management of the Purchase-to-Pay process. From the identification and formalisation of a requirement to the receiving and management of invoices.
- **Contract Management-** related to the contract formalisation process and the accountability of the involved employees.
- **Stock Management-** related to all activities concerning inventory management and intra-group transactions.
- **Monitoring and Reporting-** related to the establishment of goals and indicators giving visibility over the procurement stages.
- **Process Digitalisation-** related to the assessment of the company regarding its technology maturity level.
- **Master Data Management-** related to all the processes, responsibilities, and data cleansing operations associated with Master Data Management

For the purpose of evaluating the current maturity in each company, in each one of the identified dimensions, a 5-level classification ranking was used:

1. Currently not implemented/used.
2. Rarely implemented/used.
3. Partially implemented/used.
4. Completely implemented/used, but with workarounds in place.
5. Completely implemented/used and in a continuous improvement cycle.

The analysis scope of this assessment involved the different companies of the group, except for Company B and Company E. The analysis was not applicable to these cases because there is no current Procurement reality to be assessed, due to their recent establishment in the market.

3.3.2 Overall analysis

The conducted interviews resulted in some general considerations that carry great relevance to further understanding the state of the Procurement processes throughout the group. These were key constraints identified, and were not applicable to every company individually, but implied the Procurement process of the group, collectively.

Firstly, regarding the Government Model dimension, there were no formalised policies and procedures, as well as no defined reporting lines for the group. Due to this reason, the government model is considered not to be established.

Furthermore, considering Process Digitalisation, it was identified the lack of a data centralisation system, resulting in critical information loss, which prevents more rapid and cross-functional communication.

In terms of Monitoring and Reporting, very few Procurement indicators had been established, which limits the visibility of the function's performance. This lack of visibility extended to stock levels, which was considered in the Stock Management dimension.

Moreover, in terms of the P2P process, either no systems were used, or they did not cover the entire Procurement spectrum, leading to low added-value and time-consuming activities. Additionally, concerning the Supplier Management dimension, most contacts with suppliers were performed outside a proper system, including contracting, ordering and supplier management. On the other hand, Sourcing activities were performed by several departments, without proper guidelines or criteria.

Finally, in what comes to Planning and Budgeting, there was no centralised procurement plan or budget, preventing full visibility of the group's needs. This obstructed the awareness of potential synergies and economies of scale.

3.3.3 Current and target maturity

Based on the data collected from each company, it was possible to quantify an average perceived current maturity for the Procurement function and compare it to the group's target maturity (also collected through interviews). This was accomplished by, after scoring each dimension for each company in a conjoined effort from both sides of the operational team, averaging those scores to get a global characterisation of the Procurement maturity of each company. The outline of the group's target maturity followed a similar process, carried out with the group's head company, only this time the goal was to establish the score envisioned for the global Procurement function. Thus, it was important for the project's success to balance the Client company's perspectives and expectations with a realistic definition of targets. Hence, the objective was to identify the maturity gaps for each of the analysed dimensions, between each company and the defined group target.

As a matter of fact, based on the results of this analysis, it is clear that there is diversity in the maturity of the different companies. Apart from Company G, all other companies of the group have a low/medium maturity level (between 1 and 3, on the considered scale). At this point, to reach the desired maturity, it was important to define a path to address the needs of all the companies. The summary of the main assessment average maturity levels of the procurement function for each of the analysed companies is shown below, in Table 1.

Table 1- Current observed maturity in the different companies of the group

Company	Current Maturity
Head company	1.4
Company C	1.4
Company A	2.2
Company D	2.3
Company F	3.0
Company G	4.3
Average current maturity of the group	2.4

The desired level of maturity that the Client company wanted to achieve for the group, integrating every involved company in streamlined, effective and efficient processes, was a key element to provide further direction regarding the construction of a new Procurement model. Furthermore, this model should not only be tightly linked to the company's strategic and tactical vision, but also provide an achievable and sustainable evolution of the group's

Procurement function. The gap between the current and target maturity, considering the average score of the group, is presented in the figure below (Figure 13).

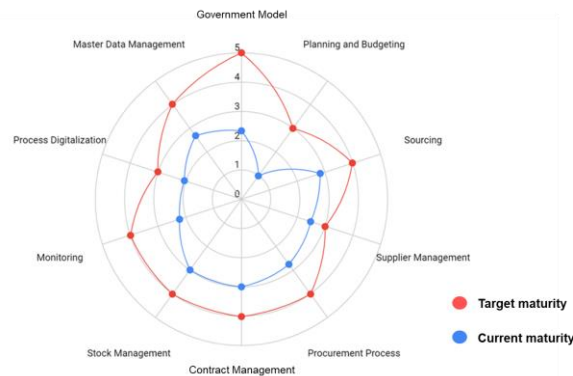


Figure 13- Representation of the gap between the current and target maturity of the group's Procurement function.

Additionally, a table containing the current and target maturity scores of the group can be found in Appendix B.

3.4 Parenting Style

As a means of understanding and establishing the management model to be implemented in the Client company's group, it was key to identify the parenting style to be applied to the Procurement organisational structure. The parenting style refers to the level of control that the head company wants to exert over the remaining companies of the group (choosing between a more centralised and decentralised management of the Procurement function). With the objective of underlining this management philosophy, three main drivers across six dimensions were drafted. Subsequently, according to the type of selected model, the reporting and (de)centralisation levels and must be properly dimensioned.

The six dimensions that allowed the assessment of the company's vision on its Procurement parenting style are as follows:

1. **Role in Management**- the level of involvement of the headquarters with the business units in terms of planning and decision making.
2. **Role in Business**- the level of responsibility and independence of the business units, regarding plans and proposals.
3. **Organisational structure**- level of desired centralisation or decentralisation, considering the desired intention of having shared services departments or not.
4. **Budgeting process**- level of influence of the group's headquarters on budgeting.
5. **Control process**- extent and frequency of monitoring of the different structures, and the level of applied control by the group's board.
6. **Overall processes**- level of standardisation of processes throughout the group, considering the different geographies and companies involved, and their respective specificities.

For each one of these identified dimensions, there was a need to understand which would be the Client company's main driver:

- **Strategic Planning (SP)**- the headquarters/head company/corporate structure defines the BUs strategies and monitors them, with the BUs assuming the responsibility for operational activities.
- **Operational Control (OC)**- the BUs are responsible for proposing their own strategies and activities, but the headquarters/head company/corporate structure validates and approves decisions on both strategic and operational levels.
- **Financial Control (FC)**- the headquarters/head company/corporate structure focuses on financial performance only, with low influence on the BU operations.

Hence, the assessment of the main drivers' weights across the six considered dimensions allowed the outline of a parenting style profile. This assessment was, similarly to the BAT analysis, conducted in a close discussion with the Client company, with a special focus on managing expectations and pinpointing the outcomes of choosing one driver over the other, in each one of the assessed dimensions.

3.4.1 Parenting style profile

Following the assessment carried out through sessions with the Client company, in which they defined the desired driver for each dimension, the parenting style profile was evaluated and designed.

The Client company wants to establish strategic planning (SP) in two dimensions- Organisational structure and Overall process. Furthermore, considering the Operational control (OC) driver, the Client company wishes to apply it to three dimensions, which are Role in Management, Role in Business and Control processes. Finally, in what Financial control (FC) is concerned, this was the main identified driver for the Budgeting process dimension only. The overview of the parenting style profile is illustrated in Figure 14 below, with the centre of the figure corresponding to 0 dimensions having each one of the drivers selected as the main driver, and the outer region corresponding to 3 dimensions chosen to have each driver as the main one.

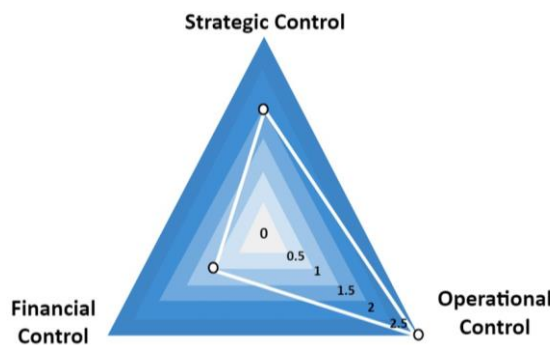


Figure 14- Representation of the parenting style profile of the Client company

As the illustration expresses, the most frequently chosen driver, Operational control (OC), reflects the desire for a decentralisation of responsibilities and activities at a company level, with monitoring and guidelines at a corporate level. The key insights of the desired parenting style profile are mentioned below, and the exhaustive explanation of each main driver across the different dimensions can be found in Appendix B:

- Control and guidelines definition at a corporate level.
- Headquarters is responsible for managing synergies of strategic categories that will be addressed in a centralised way.
- Companies are responsible for everyday decisions, independently from headquarters.

- Processes can be adapted depending on the needs of each geography and business.
- Typically, an operational control requires an increasing span of control and hierarchical levels.

Considering the last consideration that resulted from the outline of the parenting style profile, this will be a key aspect to be taken into account in the definition of the Target Operating Model, which will be further detailed in chapter 4.

3.5 Improvement Opportunities

Considering the executed diagnosis, and according to the finalisation of the “Strategy and Assess” phase and consequent transition to the “Design” stage of the used methodology (*PwC Transform®*), some improvement opportunities were identified:

- Implement a suppliers’ portal, defining a single point of contact with suppliers across the entire procurement process.
- Define guidelines and criteria regarding sourcing activities and the qualification of new suppliers.
- Define a Procurement policy and establish the roles and the relationship model.
- Define a supplier evaluation model and the respective performance criteria.
- Define standardised procurement categories across the group.

Hence, these constituted the basis on which the subsequent phases were constructed and allowed the tangibility of the identified constraints and desired changes to attain the TO-BE model. Additionally, some opportunities were identified to be addressed in the implementation roadmap:

- Define and implement Master Data Management procedures and responsibilities.
- Establish an annual Procurement plan and budget enabling the collection of needs across the company and the optimisation of synergies.
- Implement a standardised Purchase-to-Pay (P2P) process (e.g., creation of a purchase order).
- Define key procurement indicators to be analysed and acted upon, based on a predefined frequency.

4 TO-BE Model

The model to be implemented at the Client company must be capable of leveraging the development of the identified improvement opportunities, adjusting the organisation of the Procurement function with the reinforcement, implementation, and appropriateness of the structure. Additionally, the future model should strengthen the governance of Procurement with robust processes, definition, and implementation of guidelines and support systems for the function. Hence, the capabilities of the Procurement function stakeholders are expected to be properly revitalised through the definition of the necessary profiles and identification of gaps vs. the existing ones, supported by the monitoring and control of the function. Consequently, an improvement in gathering and generation of function-specific information is foreseen, to ensure an adequate follow-up of Procurement's redesign at the Client company.

This chapter is initiated with the definition of the Target Operating Model, starting from its baseline to the description of the future structures of the Procurement function at the Client company. Furthermore, the main considerations regarding the established Procurement policy are presented, framing it as a fundamental document to support the performance of Procurement activities. Moreover, the methodology and key points of the definition of the supplier platform requirements are explored. Finally, with the objective of designing a base plan for the Client company to achieve the last two stages in the *PwC Transform®* framework (Implement and Operate & Review), the next steps for operationalisation of the Procurement function's model are exhibited.

However, it is important to note that this chapter focuses on the key takeaways of the performed work, and several complementary information is included in the appendixes, as referred throughout.

4.1 Definition of the Target Operating Model

To properly define the Target Operating Model for the Procurement function, several activities were carried out with project stakeholders. This set of activities went from the initial sessions addressing the considerations of the performed diagnosis' results, including the defined parenting style profile and desired maturity, to more operational meetings for category analysis and Procurement policy review.

Primarily, the Target Operating Model baseline was defined, determining the management model to implement, as well as defining the main guidelines for the Procurement future model. Hence, the conclusions that were the outcome of the diagnosis phase were taken into consideration.

Regarding the Procurement organisational structure, the operational model was designed based on the structure levels defined and validated by the different companies of the group. A definition of functions and responsibilities complements this work in the subsequent sections.

Furthermore, there was a focus on the definition of the standardised purchasing categories and the consequent performance of the Kraljic Matrix exercise to define the categories' management style.

Finally, this model was operationalised in the Procurement policy, further explained in the following sections. The document details the Procurement process/stages applied to the Client company, the methods for approving guidelines and forums, and the level of decentralisation of activities according to the value of the purchase being performed.

4.1.1 Target Operating Model baseline

Following the definition of the Parenting style and derived implications, as well as the maturity assessment and the purchases spend analysis, some procurement models were considered for implementation at the Client company. This exercise of outlining the best organisational design was complemented by initiatives of benchmarking structures in related sectors or markets. Overall, the considered models were distinguished by the level of centralisation of functions, the degree of flexibility, and the ability to generate synergies through the defined purchasing categories. However, before selecting and attributing a given organisational design to the Procurement function, organisational structure benchmark was performed. For this effect, three benchmark axes were defined:

- **Geographic dispersion-** since the group of companies of the Client company operated in several geographies, subject to different local specificities. In this case, corporate is responsible for setting the policies and guidelines for the Procurement process, but each macro region provides shared services to its hub for the operationalisation of the function, with each region working independently from one another.
- **Purchasing categories-** due to the different levels of strategic importance of the different categories managed by the group's structures. Apart from the corporate structure, this example presented a purchasing strategy department, responsible for defining strategy; a negotiation and contracting department, which defines the rules for negotiation and contract management; and a warehousing and provisioning department, responsible for warehouse activities and inventory management. However, administrative purchasing activities are the responsibility of the Procurement team in each BU.
- **Energy sector-** analysing the current practices in the sector which the Client company operates in. In this benchmark example, specific categories are managed at the business unit level, with the existence of purchasing centre for low value purchases and an area designed for supplier management, Procurement indicators and analytics.

These benchmarks were essential to materialise some of the Client company's needs and constraints into existing models in the market, and to give a more palpable overview of how the model would be constituted once applied to the business' reality. Naturally, one of the main concerns of the Client company and the project's team was to design a model capable of adapting to their real business characteristics and providing a competitive advantage by neatly fitting their needs into the industry. Graphical illustrations of the benchmark organisational structures are compiled in Appendix C, as well as the key points of the considered examples.

Moreover, additional generic types of Procurement models were analysed. In fact, the main element of organisational design to be considered was the level of centralisation, following the conclusions of the parenting style profile, presented previously. Consequently, decentralised, centralised and hybrid models were considered, to represent both the necessities of managing purchasing categories centrally to attain scale benefits and those of maintaining a certain level of independence and autonomy for the group's geographies.

An illustration of the considered models is included in Appendix D. As a result, the most relevant models to this project were two hybrid models, the *Global Service Model* and the *Global Platform Model*. While both provide advantages, the first one focuses on the leading role of the Group's Procurement on synergetic categories, providing more agility in decentralised categories; the second one allows the group to maintain a unified vision across all categories, based on an operating model aligned by category. However, both these models present some disadvantages. On the one hand, *Global Service Model* may cause the Procurement execution to have two different speeds, and on the other, *Global Platform Model* may present a possible mismatch between operation in different categories.

However, considering the current level of maturity (management model per category) and the operational control vision for the Procurement function (need for agility on a daily basis), the *Global Service Model* is the most fitting for the Client company and the group. Further details and considerations regarding the application of this model in the Client company's group are presented in the subsequent sections.

4.1.2 Procurement Organisational Structure

Following the definition of the Target Operating Model baseline for the Client company, there was a need to materialise the theoretical model to the reality and context of the group. Hence, the chosen model for the Client company consisted of two main organisation levels: the centralised level, where purchases are managed by the corporate structure of the group; and the decentralised level, which consists of local structures, referent to the regions in which the companies of the group operate. This differentiation of organisational levels is justified by the need to capture group synergies in strategic categories, as mentioned before, that enable aggregating demand and better negotiation with suppliers (centralised in the corporate structure). Also, they allow the group to capture synergies between different companies of the same region that have similar purchasing needs (e.g. Company C and Company D).

However, in some cases, outsourcing structures are still needed, and they must be included in the organisational design. In this case, the Procurement structures are defined as follows:

- **Corporate structure-** defines the policies, rules, guidelines, and key controls and ensures Procurement execution for the different companies in the Client company's group portfolio. Additionally, it performs Procurement and category management centrally, at the group level.
- **Local structures-** define the local policies and rules, aligned with the corporate guidelines provided by the corporate structure. They also perform the function locally, in a given country, for a specific company or set of companies.
- **Outsourcing-** the external parties that perform the function and report functionally to the corporate structure.

However, and with the objective of duly defining the interaction mechanisms between the different structures, two different types of report are expected. On one side, hierarchical report, that refers to reporting according to the organisational chart, performed to the directly above position. On the other, functional report, referent to the reporting that can be performed in several departments and/or companies, that is executed on the mandatory communication about the practice, methodology and activity to the entity responsible for such competence in the organisation.

An illustrative example of interaction between the different structures of the group is presented in Figure 15, below.

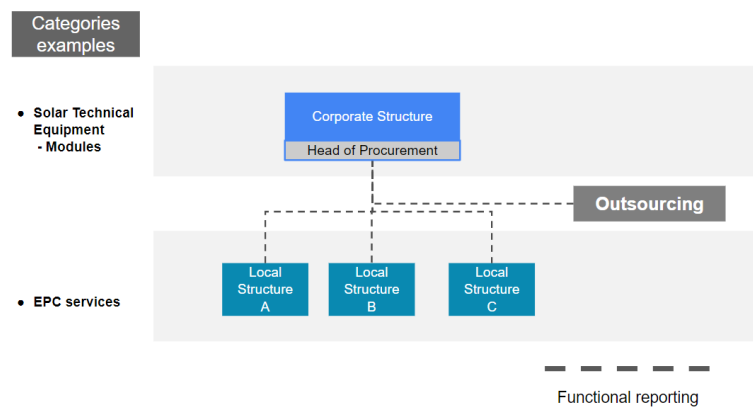


Figure 15- Illustrative example of the interaction between the defined structures

4.1.3 Evolution of the model

The definition of the global Procurement function of the group is intended to be adequately suited to the Client company's objectives, allowing the established organisational design to support not only the targeted model, but also the transition from current practices to the optimised operating model. Furthermore, there must be a sustainable evolution of the model to accommodate any changes resulting from its initial implementation. On the contrary, if the implementation of a new model dismisses the current maturity and available resources, focusing only on the desired state, the effectiveness of implementation can be compromised.

With these restrictions and determinants in mind, for the implementation of the new Procurement function, two models were defined, to be progressively implemented. The first model is designated as Target model, which pretends to be an intermediate step towards the establishment of the Envisioned model, which entails the average desired maturity for the Procurement function of the group, as discussed in the diagnosis phase.

However, the envisioned model will not be established based on a defined time horizon, but based on a set of factors:

1. Business scalability.
2. Dedicated human resources to Procurement function.
3. Implemented systems to support Procurement.
4. Standardised and seemingly executed processes.

Hence, the Envisioned model establishment entails a further reinforcement of the organisational structure's robustness. In the long run, the implemented model is defined in a way that includes an aggregating structure, responsible for managing purchasing categories with few local specificities. This will allow the Client company to gain dimension and take advantage of economies of scale.

Following these considerations, in the subsequent period, and to smooth the new Procurement model, the group should focus on defining and stabilising the operationalisation of local and corporate structures, with the current FTEs (Full Time Equivalent) and competencies available. As the company grows and the systems and procedures are stabilised, the aggregating structure can be created:

- **Aggregating structure-** structure at a regional level for non-core categories, promoting synergies and an efficient P2P process. It coordinates a set of geographies, reporting functionally to the corporate structure.

An illustrative example of interaction between the different structures of the group, once the Envisioned model is established, is presented in Figure 16.

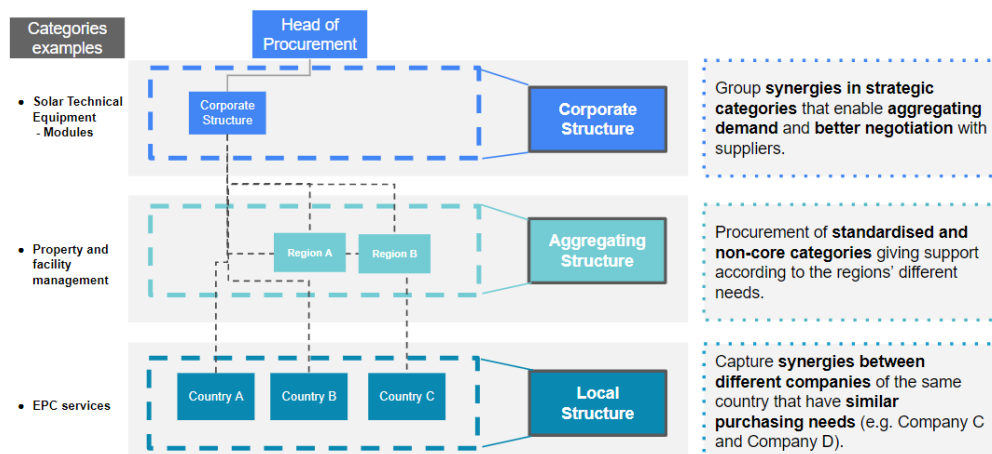


Figure 16- Illustrative example of the interaction between the defined structures in the Envisioned model

4.1.4 Procurement functional structure- Target model

To establish the designed Target model in the subsequent period, following the conclusion of this project, seven different structures were created: one corporate structure, three local structures that differentiate themselves on the geography and business activities, as well as three additional distinct outsourcing structures.

Firstly, the corporate structure manages the strategic categories for all the Group's companies, independently of the geography and business activity.

Additionally, the first local structure is applied to Country A. This structure manages the bottleneck and non-critical categories for the companies in Country A that belong to both the distributed generation and utility scale businesses. The second local structure embraces Country B and manages the bottleneck and non-critical categories for the companies operating in Country B, that belong to the distributed generation businesses. Finally, the local structure of Country C manages the bottleneck and non-critical categories for the companies of Country C, at the utility scale level. Moreover, this structure is responsible for all utility scale projects outside this region under the direct management of Company A.

Lastly, the three outsourcing structures are related to Companies B, F and G, and each one of these manages the Procurement process through outsourcing in accordance with the Client company's standard and established guidelines.

Following the definition of the organisational model and the Procurement functions, the correspondent functional structure is illustrated below, in Figure 17. This illustration comprises the two types of structures to be applied in the Target model and specifies the functions and respective report lines for each.

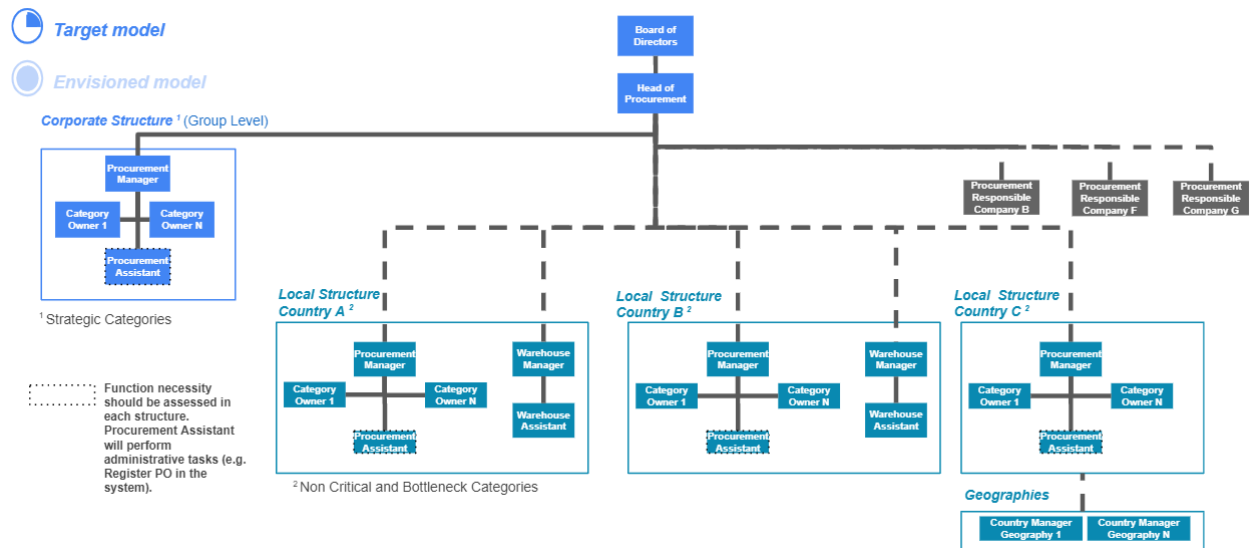


Figure 17- Representation of the organisational structure defined in the Target model

4.2 Definition of the Procurement policy

The Procurement function must ensure the best strategic and operational alignment between the group's companies, their business partners and suppliers, through an integrated Procurement cycle approach. Hence, the Procurement policy applies to every company of the Client company's group and its objective is to establish the guidelines and principles that govern the relationship between the Procurement function and business partners and suppliers, in the context of goods and services acquisition. The Procurement policy will then enable:

1. The implementation of best practices and standardisation of procedures regarding purchasing activities throughout the group, maximising gains that contribute to the good performance of all companies.
2. Effective communication between different roles involved in the Procurement process, due to the definition of adequate approval flows and report channels.
3. End-to-end management of each purchasing category, with duly defined criteria for its management and revision.

The principles set in the Policy are the basis on which relationships with all involved in the procurement processes are built. The adoption of values, attitudes, and patterns of behaviour, at every level of the structure, are fundamental to establishing solid, reliable, and trust-based relationships with internal and external stakeholders.

However, even if the project discussed in this dissertation defines the Procurement policy for the Client company, this should be reviewed at least every two years, except in cases where there is a strategic, business, or organisational change that has an impact on how this policy is structured.

4.2.1 Scope of action of the Procurement policy

The Procurement policy applies to all companies that are part of the Client company's group and those that could integrate the group in the future. The Procurement function scope comprises the organisation's sourcing, purchasing, and warehousing processes, as well as its administrative management and all directly related activities. Hence, the Procurement policy comprises the main responsibilities that make up the value chain:

- Manage the strategy and respective objectives for its fulfilment.
- Manage existing purchasing categories and subcategories at the Client company.
- Define the annual procurement plan guidelines and ensure compliance.
- Define procurement performance indicators guidelines, and respective monitoring.
- Manage the needs for the acquisition of goods and services by the various areas of the organisation to analyse the needs in an integrated manner and create potential synergies.
- Carry out the Procurement and purchase of goods and services.
- Manage suppliers, including their selection, qualification, and periodic evaluation.
- Manage the introduction, revision, and cleansing processes of all master data regarding goods and services, as well as suppliers.
- Manage existing Procurement contracts and associated needs.
- Efficiently and integrally manage the stock, ensuring the minimum levels that guarantee a proper satisfaction of needs.
- Manage the warehousing activities of the Client company's group, storage, and internal movement of products.

In parallel to the previous phases of the project, the defined Procurement policy focuses on the Target model to be implemented for the Procurement function, considering the group's maturity and resources available. With the objective of pinpointing the additional changes to be implemented once the group possesses higher maturity, necessary resources, and business scalability, regarding the Envisioned model, there are important notes identified throughout the document. Similarly, short-term constraints are expressed, related to the establishment of new systems (ERP and supplier portal), since the automation of the processes identified in the policy is subject to an effective rollout of the respective supportive systems. These constraints are justified by the fact that this is an ongoing implementation at the Client company (ERP), that must be concluded before the full establishment of a fully automated and digitalised process.

In fact, the policy focused on, primarily, establishing the Procurement process and related functions to be applied to the Client company, considering the Source-to-Pay (S2P) process and Procurement best practices. Additionally, the purchasing categories were defined and classified, with the objective of attributing their management to the corresponding defined structure. This content is explored in the following sections.

4.2.2 Procurement process and functions

The desired processes and necessities for different roles within the scope of the Procurement structure were traced, with the goal of supporting the operationalisation of the target operating model for the group, and ultimately establishing it. For this reason and based on the Source-to-Pay (S2P) process, the stages of the Procurement process at the Client company were defined. A summary of this process is illustrated in Figure 18, below.

Stages of the Procurement Process

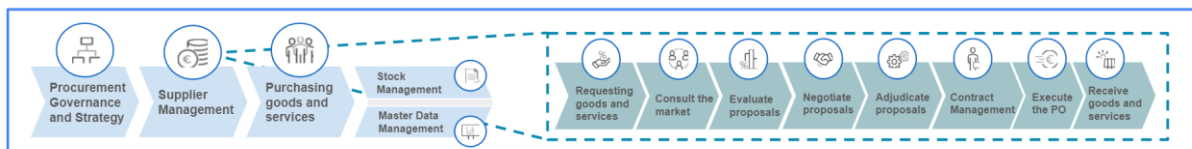


Figure 18- Representation of the stages compiled in the defined Procurement process of the Client company

Additionally, the functions and responsibilities of the different procurement roles were established. On a high-level basis, each function is responsible for:

Head of Procurement- Lead, manage and guarantee the success of the entire Procurement cycle. Define guidelines, policies and rules as far as Procurement is concerned (e.g., Strategy, Annual Procurement Plan, Procurement Corporate Policies), and monitor the application of such elements.

Procurement Manager- Support Category Owners, supervise and ensure compliance of the Procurement process, from an end-to-end perspective. Additionally, responsible for establishing a connecting link between the structure and the Head of Procurement.

Category Owner- Perform category management and manage contractual and commercial relationships, as well as guarantee the acquisition of products and services.

Procurement Assistants- Support the Category Owners in the execution of the local Procurement processes, namely performing administrative tasks.

Warehouse Manager- Ensure the definition and planning of warehouse activities, as well as the definition of the necessary guidelines to ensure efficient inventory management.

Warehouse Assistants- Execute operational warehouse activities, ensuring an efficient flow of inbound and outbound stock.

The complete list of responsibilities, powers, authority, and lines of report can be found in Appendix E. Additionally, other business functions are defined in the Procurement policy, due to their relevant role in specific components of the procurement process.

4.2.3 Categories classification and analysis- Target model

The process of developing standardised purchasing categories started with the spend analysis in the diagnosis phase, as previously explained. Nevertheless, the categories were continuously refined in operational meetings with all the companies of the group to achieve the final version of the categories' list. This was accomplished by conducting 13 validation sessions with the different departments involved in Procurement activities, throughout the group's companies.

The correct characterisation of the purchasing categories is essential to address the different natures and strategies that should be defined for purchasing goods and services. There are two distinct dimensions that were defined to characterize purchasing categories. The first dimension regards the impact on the business operations, focusing on the extent to which each category is directly or indirectly connected with business activities. In this sense, the purchase categories can be classified as:

- **Core categories-** these categories represent the essential business activities of the Group.
- **Non-core categories-** these categories are outside of business activities or operations that are the main revenue source of the business. They act as supporting categories to the main business activities.

The second dimension is directly related to the operation's segment for which the purchase was conducted. From this, two levels of characterisation can be identified, each with distinct degrees of granularity:

- **Level 1-** purchases are aggregated according to the broader segment of the operation.
- **Level 2-** purchases are segmented with a higher level of detail, focusing on the specific operation area.

The final purchasing categories' list resulted in 14 Level 1 categories regarding Core purchasing categories, and 10 Level 1 categories referring to Non-core categories. Additionally, Core categories compile 56 Level 2 categories, and Non-Core categories comprise 31 Level 2 categories. An exhaustive presentation of the final purchasing categories is included in Appendix F.

Moreover, following the definition of the final purchasing categories list, it was key to determine the best management strategy for each one of them. For this, the Kraljic Matrix was used as the foundation for classifying these categories across four quadrants, combined with several company sessions that provided fundamental insights for its classification.

The positioning of the different categories in the Kraljic Matrix, in relation to the two considered dimensions (Profit Impact and Supply Risk/Market Complexity), were evaluated through the computation of three variables: for the vertical axis, Value; for the horizontal axis- Supplier Concentration and Supply Market Complexity.

Value

This variable was calculated based on the total value distribution of the performed Spend Analysis. Moreover, possible outliers that had a very high purchasing value (Wind technical equipment and Biomass fuel) were identified, since these would hamper the analyses when the values were standardised. Afterwards, a value between 0 and 5 was attributed to each category, depending on the value.

Supplier Concentration

This variable was calculated based on the distribution of suppliers' spend for each category. A value was attributed between 0 and 5, according to the top 3 suppliers accounting for:

- Level 5- more than 90% of the total spend.
- Level 4- more than 75% of the total spend.
- Level 3- more than 50% of the total spend.
- Level 2- more than 30% of the total spend.
- Level 1- more than 20% of the total spend.
- Level 0- less than 20% of the total spend.

Supply Market Complexity

Related to the complexity of the market from which the Client company purchases, in each category. This includes criteria such as product availability, logistics proximity, and market specificities.

- Level 5- high market complexity, with few substitute products, low logistics proximity and increased market specificities.
- Level 3- market presents some specifications and some substitute products.
- Level 1- standard products/services with a high degree of substitute products and low market specificities.

Both Supplier Concentration and Supply Market Complexity variables contributed with a weight of 0.5 to the horizontal axis.

Adding to this analysis, and based on the inputs from the company sessions, the purchasing categories were positioned in the quadrants of the Kraljic Matrix. As a result, the majority of non-core categories are classified as non-critical, while the majority of core categories were classified as bottleneck. Both bottleneck and non-critical categories were considered to be managed at a decentralised level. Furthermore, 9 categories (7 core categories and 2 non-core categories) were identified as strategic, and thus more likely to benefit from a centralised management strategy.

However, once the Envisioned model is implemented, which implies the establishment of the aggregating structures previously discussed, all non-critical categories will be managed under the scope of the new aggregating structure.

This process resulted in only 7 categories being adjusted manually, which corresponds to approximately 8% of the total purchasing categories. This adjustment was performed based on empirical insights, provided by the Client company. The non-exhaustive and anonymised list of the purchasing categories according to the level of management (centralised vs. decentralised) and the quadrant of the Kraljic Matrix can be found in Appendix G, and the overall positioning of the categories is illustrated below, in Figure 19.

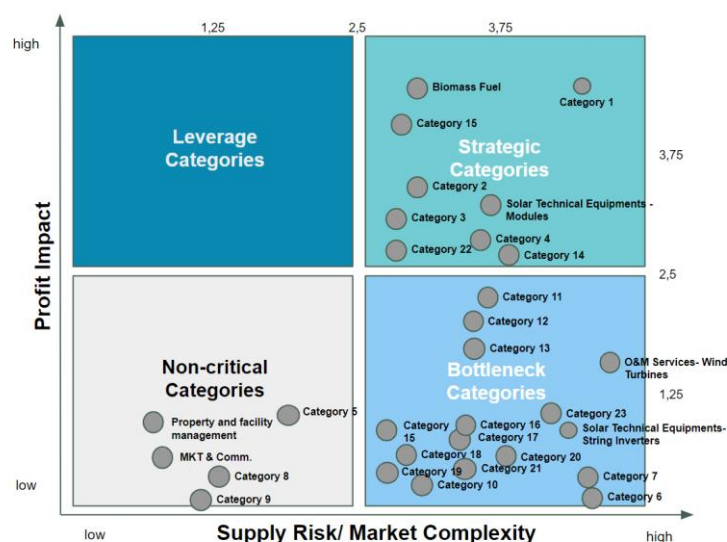


Figure 19- Representation of the positioning of categories resulting from the Kraljic matrix exercise

Following the definition of the purchasing categories classification, processes, functions and responsibilities of the Procurement function, several guidelines and rules are thoroughly explored and defined, in a meticulous and detailed manner, in the Procurement policy. However, given confidentiality constraints, and the focus of this dissertation, their presentation, overall, would not contribute with added value to this document. However, due to their special context, relevance, and importance to the Client company's environment, as well as interesting considerations regarding the process used for their conception, there are two topics that should be subject to further explanation: Supplier Qualification criteria and the definition of the Procurement model by purchase model. These topics are discussed in the following sections.

4.2.4 Supplier Qualification criteria

As previously discussed in this dissertation, the sending of proposal requests to suppliers, in the scope of market consultation, supposes its previous assessment. All the suppliers of the

Client company must follow the qualification process according to the defined criteria, outlined in the Procurement policy.

However, according to the risk appetite shared by the Client company's group, it was concluded that two distinct qualification strategies were required: a simplified qualification and a full qualification, according to a defined threshold value: (i) Until €15.000; (ii) Above €15.000, respectively.

The simplified qualification (until €15.000) is based on simplified documentation, that can vary, for example, from geography to geography. However, the full qualification (Above €15.000) entails the analysis of general processes, policies, legal and financial information, as well as traded goods/services portfolio, allowing the contracting company to better assess how much risk the supplier poses for the organisation. For this effect, several areas should be addressed, such as Labour, Ethics & Compliance, Environment, Social Responsibility, Data Security, Finance, General Safety, Quality, Resilience, Regulatory, and Integrity and Reputation.

The threshold value that outlines the limits of the two qualification processes was defined based on the supplier distribution, considering values regarding the year 2021, according to information resulting from the performed Spend Analysis. On the one hand, if we consider suppliers with an annual spend below €15.000, this entails the simplified qualification of 1171 suppliers, which corresponds to 81% of the total; on the other hand, regarding the full qualification of the suppliers whose annual spend surpasses €15.000, this represents 272 suppliers, 19% of the total. The definition of this threshold limit followed an iterative process materialised in discussion sessions, with the Client company evaluating the threshold value proposed by the project's team and assessing the necessary resources (both FTEs and time) to carry out the necessary qualification processes. Hence, this was defined having the Client company's empirical considerations into account- an adequate assessment of the potential suppliers is key to ensuring a mutually beneficial relationship; however, this assessment must be performed efficiently, considering the restrictions of the limited resources of the company. If too many potential suppliers had to undergo the full qualification process, this would significantly increase the company's efforts applied to this portion of the Procurement process.

4.2.5 Procurement model by purchase value

The responsibilities of Procurement processes will differ according to a defined threshold value. For low-value purchases, most of Procurement activities will be performed and managed by the business areas, unless they require assistance from the procurement department. The threshold value depends on the estimated acquisition values: (i) Until €10.000; (ii) Above €10.000. The representation of the purchase processes and the roles responsible for carrying them out in the two scenarios is depicted in Appendix H.

Once again, an iterative process (with discussion meetings with the Client company to assess the possible allocation of resources) gave origin to the threshold value, considering that the model should privilege an agile rollout of the procurement process, streamlining activities whenever possible. The definition of the threshold value was based on the value/transaction distribution, a process subject to the same restrictions as those identified in the previous section. In fact, 85% of transactions represent a value below €10.000 (20% corresponding to core purchases), which corresponds to 3% of the purchase value (25% of the value is of core purchases); and purchases above €10.000 represent 15% of transactions and 97% of the value of purchases.

4.2.6 Responsibility assignment

The designed Procurement policy also intends to assign the different responsibilities throughout the procurement process, detailing and clarifying the various roles' participation. The identification of stakeholders' responsibilities on the responsibility matrix is defined according to the RACI Framework, that is used to identify and assign responsibilities to its owners under the scope of the Procurement policy: Responsible (takes action), Accountable (takes the final decision on a specific action), Consulted (enquired to recommend, suggest or present alternatives to the performance of an action), and Informed (informed about the action and/or its result). The complete RACI matrix designed for the Procurement function of the Client company is presented in Appendix I.

4.3 Identification of requirements for a supplier platform

One of the objectives of the project was to identify and specify the requirements for the implementation of a future supplier relationship platform. This should be a flexible portal, capable of not only facilitating integration between other existing systems but also providing efficiency gains. These gains are referent to factors such as diminishing the number of information exchanges between the Client company and the suppliers, centralising the information in one system; reducing time spent on administrative work through automation of tasks and emission of alerts and notifications for necessary action; and streamlining supplier management activities by allowing filtering of supplier information and documentation (facilitating audit and evaluation of performance). Moreover, it must ensure transparency and mobility, allowing for collaborative participation of the different stakeholders in the supplier management process.

4.3.1 Scope of the supplier portal

This platform was intended to focus on two main elements: Supplier Management and the P2P process. The Supplier Management aspect included the process of sourcing and qualification, supplier performance assessment, and day-to-day communication. On the other hand, the second element covers the full P2P process, apart from purchase orders and the receiving of goods and services.

Moreover, activities related to supplier contract management, stock management and master data management are addressed by the implementation of an ERP system, thus falling out of the scope of this project, except in cases related to the integration between both systems.

4.3.2 Requirement classification and identification

With the objective of identifying the relevant functional requirements of the supplier portal, five dimensions were considered, related to the stage of the procurement process to which they were referent: Supplier Management, Purchasing goods and services; Master Data Management; Monitoring and Reporting; and System Functionalities.

Moreover, in each one of the identified dimensions, sub-dimensions were designed:

1. **Supplier Management-** Suppliers selection and qualification; communication with suppliers; and supplier performance.
2. **Purchasing goods and services-** Requesting goods and services; consulting the market; evaluating proposals; supplier contract management; and executing the purchase order
3. **Master Data Management-** Master Data Management.

4. Monitoring and Reporting- Procurement indicators.

5. Systems Functionalities- Access, profiles and permissions; notifications and alerts; and overall settings.

Finally, the respective dimensions and sub-dimensions of each requirement were reflected in the requirement ID, according to the following schema, illustrated in Figure 20:

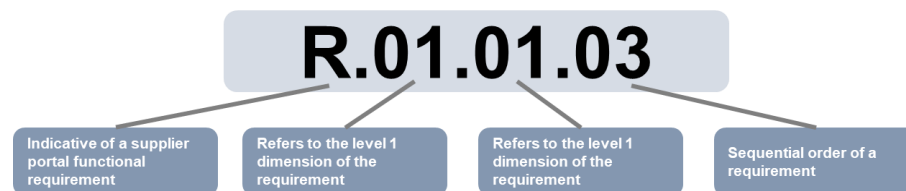


Figure 20- Representation of the composition of the established supplier portal requirements

Each requirement was classified according to one of the two levels of relevance: a “must have”, regarding the requirements that were fundamental to be included in the platform; and the “nice to have”, considering requirements that were not mandatory to be incorporated, but whose inclusion was an extra beneficial feature.

The complete list of requirements is included in Appendix J.

4.4 Elaboration of an initiative roadmap

Following the definition of the Target Operating Model to be implemented, the execution of the Procurement policy and the identification of the requirements to be considered in the conception of a supplier portal, several other key aspects regarding the effective implementation of a new procurement model remain. These key aspects involve the consideration of several initiatives to be carried out concerning the new purchasing governance model, that should be duly characterised, classified and prioritized. Hence, a detailed exposition of further activities to be implemented in the future is necessary, with the aim of attaining the desired state of the Procurement function. Additionally, these should be condensed into an initiative roadmap, indicating when each initiative should take place and the subsequent sequence of events.

4.4.1 Methodology

The development of the implementation roadmap was performed through a top-down approach, initially defining the main axes of implementation. These axes covered the key procurement areas that should be addressed in the implementation phase.

Afterwards, a definition of the initiatives that should be incorporated into each axis took place, presenting their scope and set of specific activities. Finally, detailed fact sheets were developed for each initiative, covering several aspects such as their description, duration, and owner.

In parallel, the criticality and complexity of each initiative were defined.

4.4.2 Axes of Implementation

With the objective of ensuring the correct implementation of the TO-BE model and addressing the improvement opportunities identified in the diagnosis phase, four axes of implementation were identified:

- A. Initiation of implementation of the Target Operating Model-** planning and rollout of the Target model, defining every necessary action to effectively communicate and operationalise the newly defined Procurement function.
- B. Systems implementation-** carrying out the already ongoing ERP implementation, while also defining the initiative to conduct IT sourcing activities to select the supplier portal, prioritising requirements and establishing evaluation criteria, aligned with the Client company's requirements.
- C. Standardising Procurement procedures-** formalising procedures to support the Procurement function operationalisation, considering the newly defined model. This axis intends to clearly identify the set of guidelines to duly and effectively conduct the Procurement function throughout the Client company's group.
- D. Development of a Procurement performance management model-** defining the guidelines for planning and budgeting the activities for the Procurement function, as well as the different objectives and report necessities of every structure of the organisation, detailing the KPIs to be monitored in Procurement activity.

4.4.3 Classification of initiatives

The roadmap initiatives were classified to provide further insights on their context, outlined through the definition of the level of criticality and complexity of implementation of each initiative.

Criticality- contribution to the Procurement function

This dimension measures the way every initiative contributes to the efficiency and efficacy of the Procurement function (e.g., reduction of errors, enhanced internal agility regarding automation and execution of processes, etc...).

A qualitative analysis was performed for criticality assessment. Hence, the impact on the increased efficiency and efficacy of the Procurement function was considered, regarding resources allocated to the performance of the process, as well as the time for its execution:

1. Very low impact.
2. Low impact.
3. Average impact.
4. High impact.
5. Very high impact.

Complexity of implementation- necessary time and resources

This dimension measures the effort associated with the implementation of the initiative, considering time and involved resources, from the Procurement function and other areas.

A quantitative analysis was performed for the complexity of implementation, in which two indicators were considered. Firstly, the number of participants required for the planning, execution and monitoring of each initiative was classified on a scale between 1 and 5 (i.e.: a score of 1 corresponding to a single participant, and 5 to five participants). In this first indicator, it is important to refer that the level of intervention of the participants varies by initiative, therefore the classification was adapted in each specific case if deemed necessary. Secondly, the duration of the initiative was classified according to the following intervals:

1. Less than two weeks.
2. Between two weeks and one month.

3. Between one month and two months.
4. Between two months and three months.
5. More than three months.

These intervals were calculated based on the average duration of similar initiatives, and therefore are only indicative to the Client company and non-binding.

Finally, the complexity of implementation for each initiative was calculated by averaging the levels of duration and number of participants.

4.4.4 Initiatives to be implemented

Axis A- initiation of the implementation of the Target Operating Model

A1. Hiring/Appointing to roles- define the recruitment process to fulfil the roles of Procurement that are not yet assigned to employees of the Client company.

A2. Communication Plan- convey specific information about the Target Operating Model to every stakeholder of the Procurement function, focusing on explaining the implementation if the implementation plan and respective timings.

A3. Operationalisation- Ensure the proper and updated training and qualification of all the involved stakeholders throughout the operationalisation of the Procurement function, focusing on process guidelines and responsibilities.

Axis B- Systems implementation

B1. Ongoing SAP implementation³- implementation of ERP system throughout the group's companies.

B2. IT sourcing⁴- prepare and manage IT sourcing process to efficiently select, assess and contract a supplier portal solution for the Client company's group.

Axis C- Standardising Procurement procedures

C1. Formalise the PR and PO approval matrices- define approval limits of the different roles involved in PR and PO processes.

C2. Formalise the procedures for purchasing goods and services- formalise the flow of activities and responsibilities, sequence of events and rules for the execution of the end-to-end purchase process, ranging from the request of goods and services to its receipt.

C3. Definition of Supplier Management procedures- define the criteria used for Supplier Qualification and Evaluation, including the analysis of risk and sustainability.

C4. Definition of Procurement Committee's regulation- define the scope of action and intervention of the Procurement Committee, defining its operational processes, responsibilities, and activities.

C5. Definition of Contract Management procedures- streamline contracting procedures, considering adequate documentation of the process.

Axis D- Develop a Procurement performance management model

³ ERP implementation is currently being addressed in a specific project taking place at the Client company. For this reason, no activities were established for this initiative.

⁴ IT supplier portal sourcing activities are expected to begin two to three months prior to the beginning of its implementation. This activity was developed based on PwC IT Sourcing Framework, included in Appendix L.

D1. Develop a Procurement plan and budget- define standard guidelines for the Procurement plan, as well as the general guidelines for an annual budget.

D2. Preparation of the Management information model- define the management information model structure, tools, and monitoring indicators.

The descriptions of the activities entailed in each initiative are included in Appendix K.

As mentioned in the previous section, the initiatives were classified according to the level of criticality and complexity of implementation, and the results of this classification are presented in Figure 21, below.

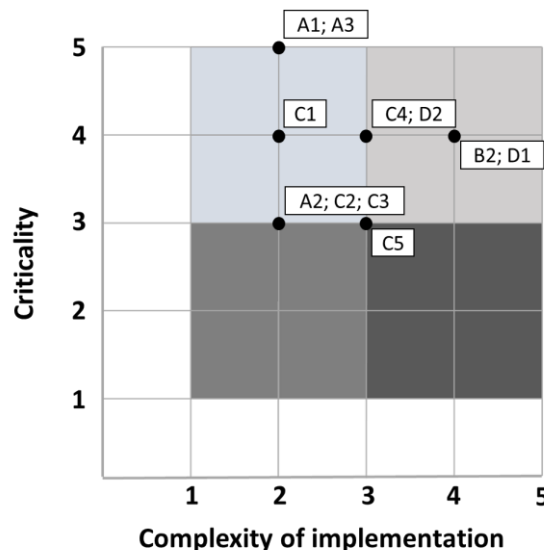


Figure 21- Graphical representation of the classification of initiatives

The different quadrants of the illustration in Figure 21 have the goal of identifying initiatives that present a low level of complexity of implementation (above or equal to level 1 and below level 3) and high level of criticality (above level 3 and below or equal to level 5). These results have an impact of the definition of the next steps for the Client company, as presented in the next section.

4.4.5 Implementation roadmap and immediate next steps

The initiatives that make up the implementation of the Target model will be implemented following a step-by-step approach. It is important to note that the initiatives from September onwards are to be secured by the Head of Procurement and the Procurement Managers, assuming their previous hiring/appointment, foreseen in initiative A1. If the hiring/appointment to the roles occurs earlier, activities can be anticipated.

Moreover, it is relevant to mention that the potential delay in the implementation due to the hiring process may represent risks for the operationalisation as it can compromise the model and the specific details defined due to time lag and changes in companies' and group's realities. However, the hiring/appointment needs were identified and expressed by the Client company, hence its inclusion in the project.

A graphical representation of the implementation roadmap is presented in Figure 22, below.

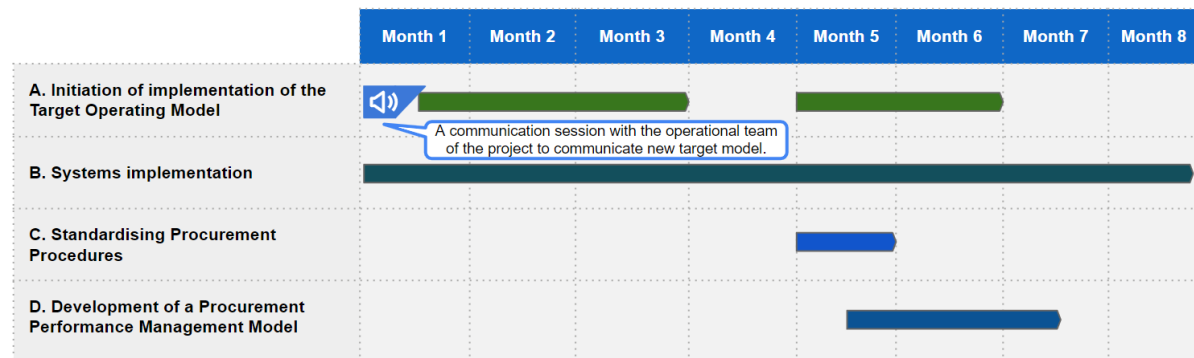


Figure 22- Implementation roadmap Gantt chart

The presented timelines consider estimated dedication effort and do not represent calendar schedules, that may be subject to changes according to resource availability. The expected time considers the longer duration of each axis of implementation. Furthermore, an exhaustive explanation of the timelines in each axis of implementation is provided in Appendix M.

However, considering the classification of the established initiatives, some of them constitute potential immediate next steps, included in Axis A and C (initiatives A1, A3, and C1). Nevertheless, the results of this analysis were discussed with the Client company, to align needs and objectives for the implementation of the model. Hence, considering the inputs of the Client company, the final immediate next steps were defined, that should be implemented as soon as the initial implementation activities start:

1. Sharing the complete version of the model with operational teams and providing clarifications, whenever needed (referent to initiative A2 since it is closely located to the next steps quadrant).
2. Hiring/appointing the Head of Procurement and the Procurement Managers (referent to initiative A1).
3. Operationalisation of the Procurement processes regarding strategic categories (managed at corporate level), as defined in the proposed model and the Procurement policy, by the identified category owners. Companies where Procurement Managers are established should already start with the operationalisation of the model (referent to initiative A3, partially).
4. Regarding systems implementation, the rollout of ERP, currently ongoing, must be adequately followed-up (given the context of the current state of the Client company and their expressed need to perform this implementation).

As a matter of fact, initiative C1 was not considered for immediate implementation since the Client company revealed the need to firstly stabilise the operationalisation of the processes before fully formalising the PR and PO matrices (opting for a phased implementation, given the necessary context for the definition of this matrices).

5 Conclusion and future work

The project presented in this dissertation established the global Procurement function of a group of companies, following a recent set of acquisitions by the head company of the group. The performed work allowed the standardisation of the Client company's different geographies' operations, which revealed different maturities regarding the Procurement process, with very few synergies between them. The client company revealed low standardisation of processes, guidelines, and ways of working throughout the group, which posed a threat to efficiency due to the potential rise of cost-inducing issues regarding the organisation of Procurement structures. Hence, the client company had some of the pains of start-up companies and needed to create the backbone of the Procurement structure to sustain the newly acquired dimension and efficiency of future operations.

The overall differences between the Procurement functions of the different geographies were characterized by a lack of established strategy for category management. Transactions were not homogeneously defined throughout the different companies of the group, and in some cases in which they were, they presented different levels of granularity. This project established a common classification of purchasing categories, which empowers visibility for the definition of clear category strategy guidelines, integrated between geographies.

Furthermore, the Client company lacked a homogeneous definition of roles and responsibilities throughout the different geographies, which extended from low levels of management to the highest level of hierarchy such as the Head of Procurement. Hence, this contributed to further paving the way for misalignments between geographies. The presented work clearly defined the boundaries of authority and responsibility of the different roles, and the elaboration of the Client company's corporate structure management philosophy will empower the efficiency of the group's operation in the future.

The newly designed Target Operating Model is now capable of supporting the group's recent growth and empowering the capture of synergies between the different geographies, such as shared resources and attainment of economies of scale.

Regarding some considerations on the performed work, considering the diagnosis to the current situation of the Client company, it is important to note that it was based on both a qualitative and a quantitative approach, which allowed an exhaustive outline of the group's reality. Thus, the qualitative analysis revealed itself as a key gauge of the project's direction, since it allowed a materialisation of the Client company's objective regarding the desired state of the Procurement function, setting a tangible target to where the client wanted to head to. This was of the utmost importance for the process of iteratively discussing outputs with the Client company in the search for delivering an adequate solution, a key process in consulting projects. One of the AS-IS diagnosis main conclusions was the significant differences in the maturity levels of the companies of the group, which were considered with great relevance in the design of the operating model since it affected the establishment of shared resources between the different geographies. Moreover, these shared resources were a key enabler of standardisation of processes and guidelines across the group.

Additionally, one of the main outcomes of this phase of the project was the necessity to implement a platform designed for communicating with suppliers throughout the supply relationship. Even though the Client company had no plans of internally developing this tool, it was important to draft the necessary requirements for the solution and thus support the consultation of the market once the Client company initiates this process. Moreover, for this process of implementing a new tool, it is important to carry out change management initiatives to promote the necessary adaptation, focusing on organisation alignment and preparation (maximum and efficient use of resources), proactively manage the stakeholders' vision and expectations (stakeholder management) and establish a group of early adopters that facilitate and encourage the process (sustainable adoption).

As far as the design of the Target Operating Model is concerned, the developed model that allows the centralisation of strategic categories' management will now enhance the possibilities of augmenting the Client company's buying power in the market. Additionally, one of the future work opportunities in this area is to further exploit the strategic segmentation of the purchasing categories by translating strategy into actionable category management tactics. Thus, this will allow the Client company to establish objective actions to harvest benefits upstream by developing conjoined innovation and technology development efforts with strategic partners. Hence, this will result in shared cost-reduction opportunities that ultimately contribute with added value to the entire chain.

One additional key factor for the success of the Target Operating Model's implementation early steps is the solid stabilisation of the operational aspects of the model, fundamental to the model's sustainable evolution. The draft of a phased implementation of the functional structure, firstly carrying out the rollout of the target model to later solidify the structure based on the envisioned model, implies that the Client company continuously applies efforts into analysing the external environment and industry trends, adapting the internal environment accordingly.

Moreover, as far as the implementation roadmap is concerned, there are key challenges to address in the implementation of the several initiatives. Firstly, it is essential to ensure ownership of the initiatives until there is a Head of Procurement and Procurement Managers, thus the project team should assume this responsibility in the meantime. Moreover, it is of the utmost importance to prevent delays in the implementation of the initiatives' plan, which could hamper the effective implementation of the defined Target model, due to the continuously evolving profile of the supply market's settings. If the Client company fails to do so, the target model may fail the objective of serving as the initial grounds to obtain the envisioned maturity and structure. Additionally, the Client company must ensure the implementation of systems to support Procurement processes and enable process efficiencies. Finally, the Client company must ensure an efficient integration in the Procurement model of new companies acquired since the Target model was designed to be flexible when scaling the business.

In terms of future work in the scope of the Client company's Procurement function, there is still significant improvements to be made in processes' digitalisation. The organisation should seek to incorporate process efficiency enhancing initiatives such as e-Procurement and forecasting modules for demand planning (consequently benefiting the execution of the annual Procurement plan and budget). Inherent to every project that entails the implementation of a new functional structure or process, it would be interesting to evaluate the effectiveness and efficiency of this restructuration following a stabilisation of the model's rollout. This can be achieved and supported by different elements, such as the computing of the Procurement ROI (comparing the profitability and reduction of costs obtained by the restructuring of the function with the cost of implementation), the reduction of Procurement cycle and decision-making times, the satisfaction of the Procurement department staff regarding their new roles and responsibilities, among others.

Bibliography

- Ateş, Melek. (2014). "Purchasing and Supply Management at the Purchase Category Level: Strategy, Structure and Performance". *ERIM Ph.d. Series Research in Management*. Erasmus Research Institute of Management.
- Aurum, A., & Wohlin, C. 2005. "Engineering and managing software requirements". In *Engineering and Managing Software Requirements*.
- Barney, J.B. 2012. "Purchasing, Supply Chain Management and Sustained Competitive Advantage: The Relevance of Resource-based Theory." *Journal of Supply Chain Management*, 48 (2): 3-6.
- Beers, Michael C. 1996. "The Strategy That Wouldn't Travel How can Jiménez guide the project to success?" *Harvard Business Review*.
- Billins, Charles E. 2018. *Human and machine roles: Responsibility and authority*.
- Bos, R. L., Van der Heijden, G., Goedhart, E. I., & Notermans, R. M. M. 2005 . "World-class purchasing: Grip op Inkoop". Berenschot Inkoop-que^te 2004/2005. Utrecht' Berenschot Group B.V.
- Caniëls, M. C. J., & Gelderman, C. J. 2007. "Power and interdependence in buyer supplier relationships: A purchasing portfolio approach". *Industrial Marketing Management*, 36 (2): 219–229.
- Carter, C.R., and M. Dresner. 2001. "Purchasing's Role in Environmental Management: Cross-Functional Development of Grounded Theory." *Journal of Supply Chain Management*, 37 (2): 12-27.
- Child, J. 1972. "Organizational Structure, Environment and Performance: The Role of Strategic Choice." *Sociology* ,6 (1): 1-22.
- Colson, Eric. 2019. "Managing organizations." *Harvard Business Review*.
- Cox, A. (2015), "Sourcing portfolio analysis and power positioning: towards a "paradigm shift" in category management and strategic sourcing", *Supply Chain Management*, 20 (6): 717-736.
- Daft, Richard L., Jonathan Murphy, e Hugh Willmott. 2001. *Organization Theory and Design*. 4th Edition. Edited by CENGAGE learning EMEA.
- Eatough, Matthew. 2014. "Leaders Can No Longer Afford to Downplay Procurement." *Harvard Business Review*.
- Edmondson, Amy C. 2012. "Teamwork On the Fly: how to master the new art of teaming." *Harvard Business Review*.
- Gibson, C.B., P.D. Dunlop, and J.L. Cordery. 2019. "Managing formalization to increase global team effectiveness and meaningfulness of work in multinational organizations." *Journal of International Business Studies*, 50 (6): 1021-1052.

- Handfield, R, and S, Choi, T Jeong. 2019. "Emerging procurement technology: data analytics and cognitive analytics." *International Journal of Physical Distribution and Logistics Management*, 49 (10): 972-1002.
- Harland, Christine M, Richard C Lamming, e Paul D Cousins. 1999. Developing the concept of supply strategy. MCB University Press, 144-3577.
- Helgesson, Y.Y.L., M Höst, and K Weyns. 2012. "A review of methods for evaluation of maturity models for process improvement." *Journal of software: Evolution and Process*, 24 (4): 436-454.
- Hesping, F.H., and H. Schiele. 2016. "Matching tactical sourcing levers with the Kraljič matrix: Empirical evidence on purchasing portfolios." *International Journal of Production Economics*, 101-117.
- Institute of Eletrical and Eletrocincs Engineers. 1990. 610.12-1990 - IEEE Standard Glossary of Software Engineering Terminology, 1-84
- Kakwezi, Patrick, and Sonny Nyeko. 2019. "Procurement processes and performance: efficiency and effectiveness of the procurement function." *Journal of Social Sciences Management and Entrepreneurship*, 3 (1): 172-182.
- Khatte, K., Kalia, A. 2013. "Impact of non-functional requirements on requirements evolution." *International Conference on Emerging Trends in Engineering and Technology, ICETET*.
- Knight, A.K., P. Blessner, B.A. Olson, and T.D. Blackburn. 2017. "Strategic sourcing and corporate social responsibility: Aligning a healthcare organization's strategic objectives." *Journal of Purchasing and Supply Management*, 23 (2): 94-104.
- Kraljic, Peter. 1983. "Purchasing Must Become Supply Management." *Harvard Business Review*.
- Lounsbury, M., and M. Ventresca. 2003. "The new structuralism in organizational theory." *Organization*, 10 (3): 457-480.
- Malan, Ruth, and Dana Bredemeyer. 2002. "Less is More with Minimalist Architecture."
- Mol, M.J. 2003. "Purchasing's strategic relevance." *Journal of Purchasing and Supply Management*, 9 (1): 43-50.
- Monczka, Robert M., Robert B. Handfield, Larry C. Giunipero, e James L. Patterson. 2016. *Purchasing and Supply Chain Management*. 7th. Boston: Cengage Learning.
- Ramírez, Rafael, Ciaran Mcginey, and Steve Churchhouse. 2020. "Why Investing in Procurement Makes Organizations More Resilient." *Harvard Business Review*.
- Ramsay, J. 2001. "The Resource-based Perspective, Rents, and Purchasing's Contribution to Sustainable Competitive Advantage." *Journal of Supply Chain Management*, 37 (3): 38-47.
- Robbins, Stephen P, e Mary Coulter. 2002. *Management and Organizations*. 7th Edition. New Jersey.
- Rowbotham, Frank., Galloway, L., and Azhasemi, M. 2007. Operations Management in Context. *Purchasing and supply chain management*, 307-330 . Elsevier.
- PwC. 2015. *Business Analysis Toolkit (BAT) Level 1 interactive guide*, v8.2.
- PwC. 2019. *S2P 301 Training*.

- Sparrow, Paul, and Cary Cooper. 2014. "Organizational effectiveness, people and performance: new challenges, new research agendas." *Journal of Organizational Effectiveness*, 1 (1): 2-13.
- Tofan, D, M Galster, P Avgeriou, and W Schuitema. 2014. "Past and future of software architectural decisions - A systematic mapping study." *Information and Software Technology*, 56 (8): 850-872.
- Wei, H, and E Wang. 2010. "The strategic value of supply chain visibility: Increasing the ability to reconfigure." *European Journal of Information Systems*, 19 (2): 238-249.
- Wilson, Georgia. 2021. *A guide to understanding the procurement function*. Accessed May 4, 2022. <https://procurementmag.com/procurement-strategy/guide-understanding-procurement-function>.
- Wnuk, K., Regnell, B., & Berenbach, B. 2011. "Scaling up requirements engineering - Exploring the challenges of increasing size and complexity in market-driven software development". *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*: Vol. 6606 LNCS.

APPENDIX A: Procurement maturity assessment session template

	Client company	
	Definition Of Global Procurement Function	
	Date: XX/XX/2022	
Procurement maturity assessment session – Company XPTO		

Time and Location:		
Start	End	Location

Participants	Company/Area	Participants time

Meeting agenda

This meeting aims at evaluating through the PwC accelerator (BAT) the Procurement processes:

- 1. Government Model**
 - 1.1. Developing Procurement Policies
 - 1.2. Processes and Formal Procedures
 - 1.3. Functions and Responsibilities
 - 1.4. Purchasing Category Management
- 2. Planning & Budgeting**
 - 2.1. Annual Procurement Plan
 - 2.2. Procurement Budgeting
- 3. Sourcing**
 - 3.1. Suppliers Selection and Qualification
- 4. Supplier Management**
 - 4.1. Supplier Performance
- 5. Purchase-to-pay process**
 - 5.1. Internal Requisition - PR
 - 5.2. Proposal Evaluation
 - 5.3. Purchase Order - PO
 - 5.4. Goods and Services Reception
 - 5.5. Receive and management of invoices
 - 5.6. Payment to Suppliers
- 6. Contract Management**
 - 6.1. Process Formalization
 - 6.2. Accountability
- 7. Stock Management**
 - 7.1. Inventory Management

- 7.2. Intra-Group Transactions
- 8. Monitoring and Report**
 - 8.1. Indicators
 - 8.2. Converting BI into Useful Information
 - 8.3. Spend Analysis
- 9. Process Digitalization**
 - 9.1. Supplier Portal
 - 9.2. Automation Tools
- 10. Master Data Management**
 - 10.1. Responsibilities
 - 10.2. Master Data Process
 - 10.3. Data Cleansing

Meeting agenda

1. Government Model

1.1. Developing Procurement Policies

- 1.1.1. There is a procurement strategy with goals that are tracked in accordance with the overall business strategy.
- 1.1.2. All relevant areas contribute to the procurement strategy.
- 1.1.3. Procurement policy gives a description of the guiding principles and critical rules to be adopted.
- 1.1.4. There is a periodic review of the procurement policies to address current/future needs and alterations.

1.2. Processes and Formal Procedures

- 1.2.1. There are adequate written procedures and systems in place to follow when they come into contact with specific areas of activity.
- 1.2.2. There are clear rules for delegation of authority in order to increase the consistency and compliance of administrative policies and processes.
- 1.2.3. There is a periodic review of current processes and procedures to align them with changing needs.

1.3. Functions and Responsibilities

- 1.3.1. There is a clear definition of roles, levels of authority, lines of report and responsibilities for the procurement area.
- 1.3.2. The capacities, competencies, and performance levels expected by employees are clearly defined.
- 1.3.3. The procurement team operates as a separate area and is not integrated into the overall operation.

1.4. Purchasing Category Management

- 1.4.1. The primary purchasing categories are defined, and are further subdivided into detail levels.
- 1.4.2. Each purchasing category has an associated owner and approver, both clearly identified.

2. Planning & Budgeting

- 2.1. Annual Procurement Plan
 - 2.1.1. There is a clear and well-defined annual procurement plan for the organization.
 - 2.1.2. The business areas are contacted to collect their annual needs.
 - 2.1.3. There is a periodic control of the annual procurement plan execution.
- 2.2. Procurement Budgeting
 - 2.2.1. There is an established and implemented budgeting process that makes managers responsible for its execution (bottom-up logic)
 - 2.2.2. There is an analysis and optimization of the potential for synergies arising from the various individual budgets
 - 2.2.3. The budgeting phase features an approval cycle that is followed by rigorous monitoring.
- 3. **Sourcing**
 - 3.1. Suppliers Selection and Qualification
 - 3.1.1. E-sourcing is used to find and select suppliers.
 - 3.1.2. A minimum criterion for supplier approval is established and it is consistently applied.
 - 3.1.3. The financial strength and integrity of the suppliers' businesses is analyzed.
 - 3.1.4. A hierarchy of suppliers is defined to promote procurement process' efficiency.
 - 3.1.5. It is required of suppliers to present a commercial proposal distinct from the technical proposal. The requesting department only has access to the technical proposal.
 - 3.1.6. Quality assurance audits are required to all suppliers (ISO 9000)
 - 3.1.7. There is clear communication about product and service performance, and specifications requirements are delivered to suppliers.
 - 3.1.8. The compliance risks of suppliers are assessed.
- 4. **Supplier Management**
 - 4.1. Supplier Performance
 - 4.1.1. Evaluate suppliers on a regular basis using key evaluation metrics (% of deliveries made on the scheduled date that meet quality requirements).
 - 4.1.2. Make supplier performance comparisons so that suppliers can see where their performance is better/worse in comparison to their competitors.
 - 4.1.3. Partnerships with suppliers are established in order to train suppliers in quality management.
 - 4.1.4. Suppliers are visited on a regular basis in order to obtain information about the security measures implemented, sales, and primary customer preferences.
- 5. **Purchase-to-pay process**
 - 5.1. Internal Requisition - PR

- 5.1.1. There is an internal requirement figure (PR) that describes the requester's need.
- 5.1.2. The PR has a unique identification number and is approved (through a defined approval matrix) before being transmitted to the procurement area.
- 5.1.3. Following approval of the PR, it can be transformed (via system) into the figure of PO, never losing its identification number.
- 5.2. Proposal Evaluation
 - 5.2.1. Multicriteria matrices are elaborated in order to evaluate suppliers' proposals. Furthermore, a cut-off point can be established for the elimination of unqualified suppliers.
 - 5.2.2. There are clearly defined company rules and procedures on how negotiations with suppliers should proceed.
- 5.3. Purchase Order - PO
 - 5.3.1. The PO is approved based on an approval matrix and then automatically sent to the supplier.
 - 5.3.2. The PO is always associated with the invoice, making it easier to track the approval and process flows.
- 5.4. Goods and Services Reception
 - 5.4.1. There is a formalized procedure for conferring goods and deviating values in order to accept the good/service.
 - 5.4.2. The goods/services receipt registration is completed in a timely and accurate manner.
 - 5.4.3. The return process is properly defined and implemented.
- 5.5. Receive and management of invoices
 - 5.5.1. Registration of supplier documents through a VIM system and, subsequently, automatically verify if the mandatory fields have the correct information.
 - 5.5.2. Ensure the correspondence between the Purchase Order (PO), the goods/services receipt and supplier invoices (when received in the system) in order to allow automatic accounting of invoices when 3-way-matching is verified. Through predefined tolerance levels, in case differences are encountered invoices are marked in the system preventing from being validated.
 - 5.5.3. There is a workflow approval in place regarding invoices and other documents from supplier. Possibility to redirect the workflow to other users when applicable.
 - 5.5.4. Ability to extract reports on pending invoices to be approved, as well as to send notifications/alerts to users by email to inform of invoices that need to be approved.
- 5.6. Payment to Suppliers
 - 5.6.1. An open line of communication with suppliers regarding payment issues is maintained. Confidence in the provider is established through the definition of realistic payment terms and a commitment to making timely payments.

6. Contract Management

6.1. Process Formalization

- 6.1.1. There is a well-defined contract management process in which current contracts are reviewed on a regular basis for possible renewal/termination/update.

6.2. Accountability

- 6.2.1. The people in charge of the contracts are properly identified and contacted when they need to be renewed.

7. Stock Management

7.1. Inventory Management

- 7.1.1. Stock management is carried out in an integrated manner in order to gain advantages in acquisitions, such as economies of scale.
- 7.1.2. Stocks are counted on a regular basis, and their allocation is also verified. A justification is required in the case of deviations, such as lost or incorrect allocation.
- 7.1.3. Security stock levels are defined for each category of purchases, whenever applicable, in accordance with the needs of each area.
- 7.1.4. Order Trigger Points are defined based on Lead Times, which include order revision time, order processing time, supplier delivery time, transportation time, and order receipt time.

7.2. Intra-Group Transactions

- 7.2.1. Intra-group transactions are supported on transference prices and have operational control associated to physical transferences.

8. Monitoring and Report

8.1. Indicators

- 8.1.1. Procurement indicators are established and goals are set. These indicators are monitored on a regular basis.
- 8.1.2. Information is analyzed from multiple perspectives in order to obtain information in different ways.

8.2. Converting BI into Useful Information

- 8.2.1. Information is only presented if it adds values to the decision making process.
- 8.2.2. The company adjusts its policies and strategies in response to the BI's findings.

8.3. Spend Analysis

- 8.3.1. Periodically, a spend analysis is carried out in relation to the expenditures that have an impact on the planning and execution of the purchasing function.

9. Process Digitalization

9.1. Supplier Portal

- 9.1.1. Self-service portals are used to initiate and locate quote requests.
- 9.1.2. Suppliers create a unique profile that collects all orders and/or requests and securely stores information.

9.1.3. Quote requests are linked to a unique reference for the purpose of localization across all channels.

9.1.4. Online quote forms are interactive to ensure greater efficiency. Before submitting a request, the supplier may review his or her quote multiple times.

9.2. Automation Tools

9.2.1. A document management tool is used to facilitate the management of procurement related documents.

9.2.2. The information system used is flexible enough to allow for the integration of necessary activities and workflows.

10. Master Data Management

10.1. Responsibilities

10.1.1. The functions and responsibilities of master data management are clear in terms of who has a role in the information life cycle.

10.2. Master Data Process

10.2.1. There is a clear and cross-sectional definition of what master data is, so that all data representations are consistent in value and context, both internally and externally.

10.2.2. There is only one moment of data capture and storage, eliminating the possibility of duplicates and the need for regular data cleaning.

10.2.3. The authenticity of the data is ensured by access restrictions.

10.2.4. The ability to refer to information is maintained regardless of the location of the business need or service provision.

10.2.5. There is a segregation of duties between the creation and or validation of master data.

10.3. Data Cleansing

10.3.1. Data cleansing operations are performed on a regular basis to ensure that data in the system are always correctly parameterized.

Questions for other areas:	
Question	Area

Documents requested:		
Name	Date	Responsible

APPENDIX B: Maturity gap (current vs. target) and Parenting Style profile

Table B. 1- Summary of the current and target maturity for the group's companies

BAT Dimension*	Head Company	Company A	Company C	Company D	Company F	Company G	Current Maturity (Group)**	Target Maturity (Group)
Government model	1	2	1	2	4	4	2.3	5
Planning and Budgeting	1	2	1	2	1	1	1.3	3
Sourcing	2	3	1	2	4	5	2.8	4
Supplier Management	2	2	1	2	3	5	2.5	3
P2P Process	2	3	2	3	3	4	2.8	4
Contract Management	2	3	1	N/A	4	4	2.8	4
Stock Management	1	N/A	1	3	N/A	5	2.5	4
Monitoring and Reporting	1	2	1	2	3	5	2.3	4
Process Digitalisation	1	2	2	2	1	5	2.1	3
Master Data Management	1	1	3	3	4	5	2.8	3
Average Maturity	1.4	2.2	1.4	2.3	3.0	4.3	2.4	4

*Scores of N/A reflect that the referent dimension is not applicable to the context of the company.

**Average of the group's companies, for each dimension

Parenting Style drivers across dimensions

1. Role in Management

Strategic Control: High involvement of head office with BUs Procurement planning and decisions. Headquarters provide a clear sense of direction and leadership.

Operational Control*:** The procurement planning, and everyday decisions are decentralised in each business unit. The corporate structure is responsible for evaluating and validating whenever necessary.

Financial Control: All decisions regarding Procurement are the responsibility of the business units themselves, with no intervention or validation from headquarters.

2. Role in Business

Strategic Control: Headquarters focuses essentially on managing strategic purchasing categories aiming at creating synergies and cost efficiency.

Operational Control*:** Companies work in a decentralised manner and independently from headquarters. However, some purchasing categories are strategically and centrally managed by the headquarters.

Financial Control: Purchasing categories are managed centrally. Independent companies sometimes work together to achieve mutual benefits.

3. Organisational structure

Strategic Control*:** Headquarters is responsible for setting guidelines and acting as a strategic controller. The structures are decentralised throughout the various companies and geographies, with few shared services.

Operational Control: Large teams and/or with high responsibility roles at the centre (e.g., shared services).

Financial Control: Minimum possible number of employees at headquarters. Focus on financial control and support from headquarters.

4. Budgeting Process

Operational Control: Headquarters defines Procurement budget based on overall corporate objectives and allocates them through the different companies (top-down approach).

Strategic Control: Headquarters defines guidelines and objectives. Companies locally construct their budget and negotiate with headquarters. Final approval performed by headquarters (top-down-top approach).

Financial Control*:** Each company proposes its purchasing objectives/budget based on local objectives (for example sales). The procurement objectives/budget are then reviewed by the company's administration. The headquarters only request for reporting and monitor the achievement of objectives.

5. Control Process

Strategic Control: Regular monitoring of the current Procurement status against the planned one, both on financial and non-financial targets. Control by headquarters is purely strategic.

Operational Control*:** Through the definition of a CPO (Chief Procurement Officer), processes will be controlled and monitored both operationally and strategically.

Financial Control: Control over goals and financial results. Control by headquarters is strictly financial

6. Overall Process

Strategic Control*:** Procurement support processes are standardised throughout the group and there are general guidelines for the remaining processes, so that the different business units are allowed to adapt them depending on the needs of their geographies and business specifics.

Operational Control: Process (both support and core) are standardised throughout the entire group.

Financial Control: Processes are highly decentralised throughout the group, with low standardisations between the different companies and geographies on both core and support processes.

***Selected driver for each dimension

APPENDIX C: Benchmark of organisational structures

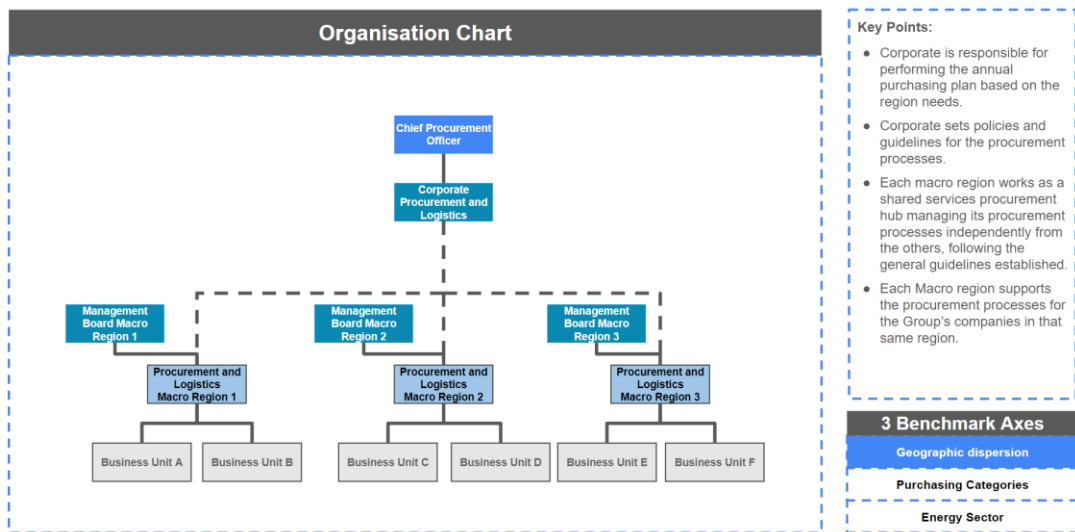


Figure C. 1- Benchmark of an organisation characterised by geographic dispersion

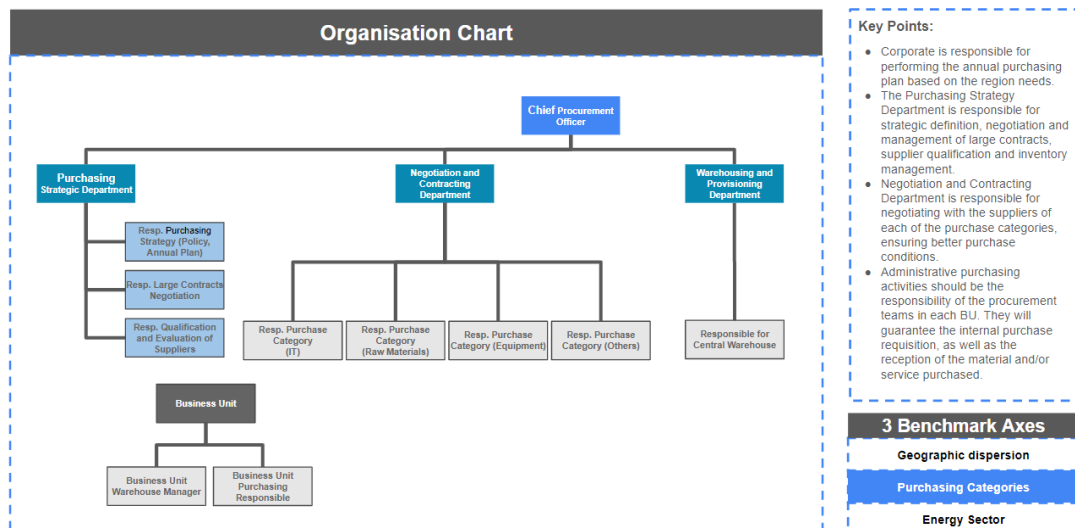


Figure C. 2- Benchmark of an organisation characterised by purchasing categories division

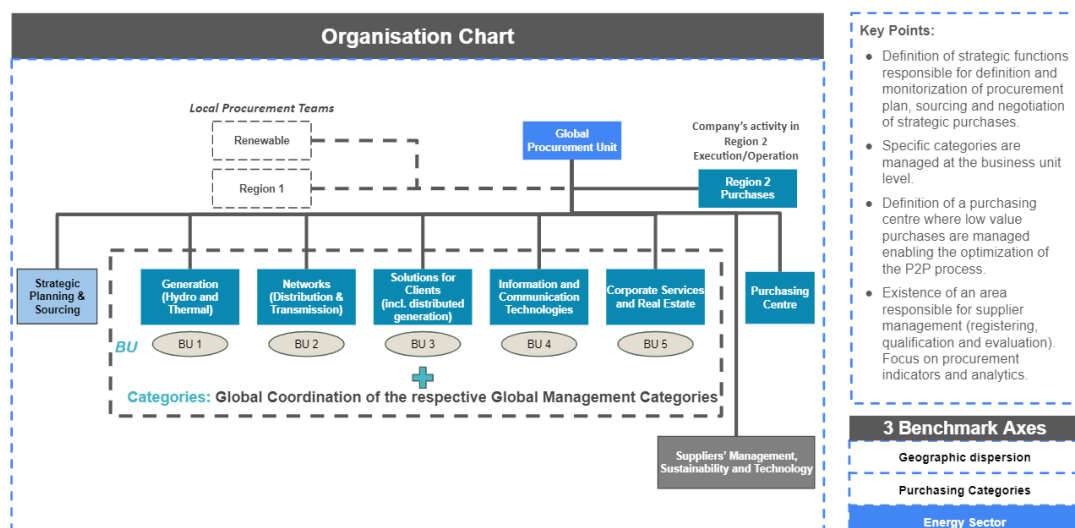


Figure C. 3- Benchmark of an organisation in the energy sector

APPENDIX D: Considered Hybrid Models

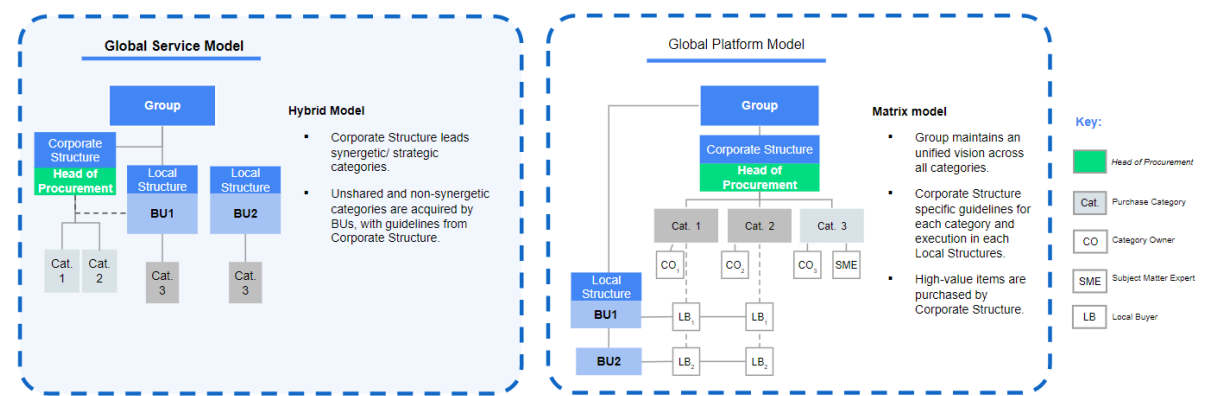


Figure D. 1- Considered hybrid models for implementation (Target Operating Model)

APPENDIX E: Responsibilities, Powers, Authority and Lines of Report - Target Operating Model



Head of Procurement

Function's Objectives

- Ensure the effective and efficient execution of purchasing activities in the Group, including the definition of strategy, supplier's assessment criteria and negotiation and contract management;
- Define guidelines, policies and procedures of transversal application as far as Procurement is concerned (e.g. Strategy, Annual Procurement Plan, Procurement Corporate Policies), and monitor the application of such elements, ensuring the uniformization of processes and procedures.

Organisational Chart



Responsibilities

- Manage and support teams under their responsibility in the fulfilment of their activities;
- Establish guidelines and work recommendations regarding strategic topics concerning purchasing functions, namely strategy, policies and purchasing plan;
- Monitor the preparation and execution of planning and budgeting activities for the Group under its responsibility;
- Analyse and validate the Annual Purchasing Plan as well as purchasing policies;
- Define, together with the Procurement Manager, the respective guidelines, ensuring the standardization and optimization of processes and procedures, safeguarding the specifics of each company;
- Supervise, guide and direct the strategic activities in the area, playing an active role in its motivation, in order to comply with the proposed objectives;
- Creating action plans, corrective actions and improvement measures;
- Monitor and ensure that the conditions negotiated in major contracts with suppliers and/or service providers, as well as their respective management, are in line with the Group's strategy.

Report Lines

- Reports both functionally and hierarchically to the Board of Directors.

Powers & Authority

- Power to handle queries, make agreements and improve the purchasing process;
- Power to revise and alter group's direction and strategic alignment on Procurement;
- Request information from the various entities and departments of the Group, for the definition of the purchasing plan or other activities.

Figure E. 1- Role description of the Head of Procurement

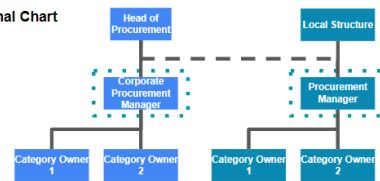


Procurement Manager

Function's Objectives

- Ensure the forwarding of rules, guidelines and policies that are established for the Group by the Head of Procurement, as far as Procurement processes is concerned;
- Ensure that procurement guidelines are correctly applied by the Category owners, as well as collecting their necessities in order to convey them to the Head of Procurement;
- Ensure the follow-up of operationalization of procurement processes;
- Support teams under their responsibility in the fulfilment of their activities;

Organisational Chart



Responsibilities

- Ensure the reporting of indicators of its processes and the respective gaps identified, as well as create action plans, in case of corrective actions;
- Forwarding of guidelines and work recommendations concerning purchasing functions, namely strategy, policies and purchasing plan, from the Head of Procurement to the Category Owners;
- Communicate the Annual Purchasing Plan, as well as purchasing policies, from the Head of Procurement to the Category Owners;
- Centralizing the needs and relevant information to support in the definition, performed by the Head of Procurement, of the Purchasing guidelines, ensuring the standardization and optimization of processes and procedures, safeguarding the specifics of each category;
- Gather information for reporting of key metrics of processes, from the Category Level to the Corporate Level;
- Manage and support teams in the fulfilment of their activities;
- Ensure process compliance with the established guidelines through the responsibility of performing proposal sign off (target model);
- Ensure the transition of functions regarding the negotiation and commercial evaluation of suppliers to the established Category Owner (envisioned model).

Report Lines

- Corporate Procurement Manager reports both functionally and hierarchically to the Head of Procurement;
- Local procurement managers report functionally to the Head of Procurement and hierarchically to the local structure.

Powers & Authority

- Request the revision of guidelines to the Head of Procurement given that the categories' necessities are altered;
- It does not have the power or authority to alter the guidelines and procedures on its own, serving only as advisor to the Head of Procurement in doing so.

Figure E. 2- Role description of the Procurement Manager

Category Owner

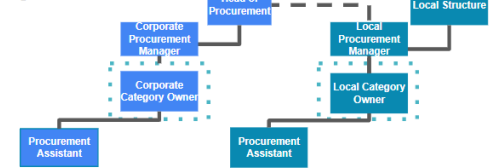
Function's Objectives

- Ensure the market consultation, commercial proposal evaluation and negotiation of suppliers and/or service providers in each of the purchase categories, in order to optimize the efficiency of purchases made, guaranteeing the acquisition of products and/or services as well as cost reduction.
- Ensure the management of contracts with suppliers and/or service providers that are in place.
- In the case of companies without a defined procurement department or technical expertise, ensure the definition of technical requirement and perform technical evaluation.

Responsibilities

- Define guidelines and recommendations for market consultation, commercial proposal evaluation and negotiation with suppliers and/or service providers;
- Carry out the planning of market consultation, commercial proposal evaluation and negotiation activities for suppliers and/or service providers in each of the purchase categories, ensuring compliance with the rules and regulations established;
- Ensure the market consultation, commercial proposal evaluation, and negotiation of contracts with suppliers of the corresponding purchase category in order to guarantee the most advantageous to the Group;
- Aggregate needs for the category it is responsible for, identifying synergies and developing a plan;
- Ensure the reporting of indicators of its processes and the respective gaps identified, as well as create action plans, in case of corrective actions;
- Find and identify new opportunities with the supplier and/or service providers;
- Ensure the sharing and communication of contracts negotiated to the Groups' companies to streamline communication between them and suppliers and/or service providers;
- Ensure monitoring of the qualification and assessment of suppliers;
- Ensure the contracting activities, combined with the monitoring of contracts in force, to ensure that they are in accordance with the contractual terms.

Organisational Chart



Report Lines

- **In the target model**, reports functionally to the Procurement Manager and hierarchically to the Local Structure.
- **In the envisioned model**, reports both functionally and hierarchically to the Procurement Manager.

Powers & Authority

- Power and autonomy to select and hire external products/ services under the established purchasing process;
- Request information from the various entities and departments of the Organization in order to be able to carry out their activity analyses;
- Suggest synergies at the purchasing level between the different companies/geographies.

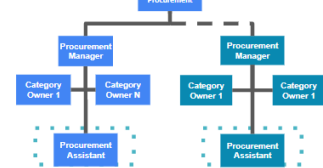
Figure E. 3- Role description of the Category Owner

Procurement Assistant

Function's Objectives

- Ensure the operationalization of all support and complementary activities connected to the negotiation and contracting of suppliers and/or service providers in each of the purchase categories;
- Ensure the operational communication with suppliers regarding the performance of POs, RFQs and RFPs and its subsequent follow-up.

Organisational Chart



Responsibilities

- Receive and analyse purchasing requisitions from requesters;
- Perform Request for Quotes with previously established suppliers;
- Perform Request for Proposals to new suppliers;
- Analyse, negotiate and request contracts for equipment, articles, material and/or services based on the evaluation criteria defined;
- Elaborate new Purchase Orders (POs);
- List and organise suppliers according to assessment criteria;
- Perform products/services' receipt when it is not warehousing activities related;
- Assessing suppliers according to the defined performance criteria defined;
- Provide assistance in activities as directed by the Category Owner.;
- Elaborate reports asked by superior functions;
- Receive and analyze complaints from suppliers;

Report Lines

- **In the target model**, reports both functionally and hierarchically to the Procurement Manager.
- **In the envisioned model**, reports both functionally and hierarchically to the Category Owner

Powers & Authority

- Autonomy to select and hire external services to support, following the established purchasing process;
- It does not have the power to negotiate directly with entities (public or private), suppliers or partners to unless authorized by the category owner in charge;
- Must respect the approval cycles defined for the different moments of the purchase process.

Figure E. 4- Role description of the Procurement Assistant

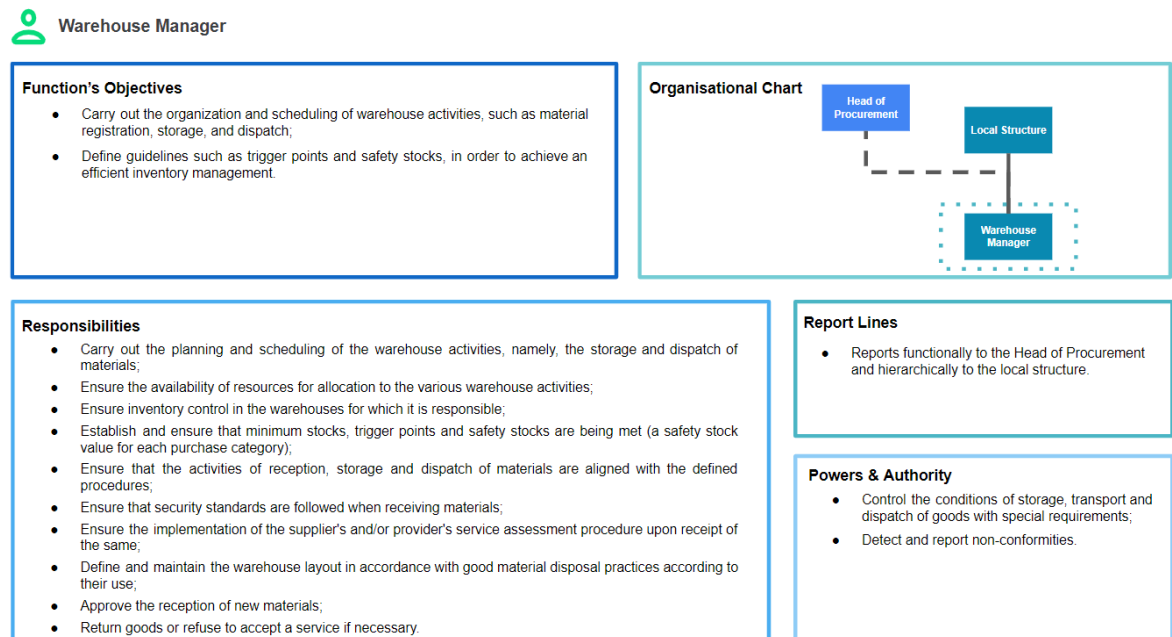


Figure E. 5- Role description of the Warehouse Manager

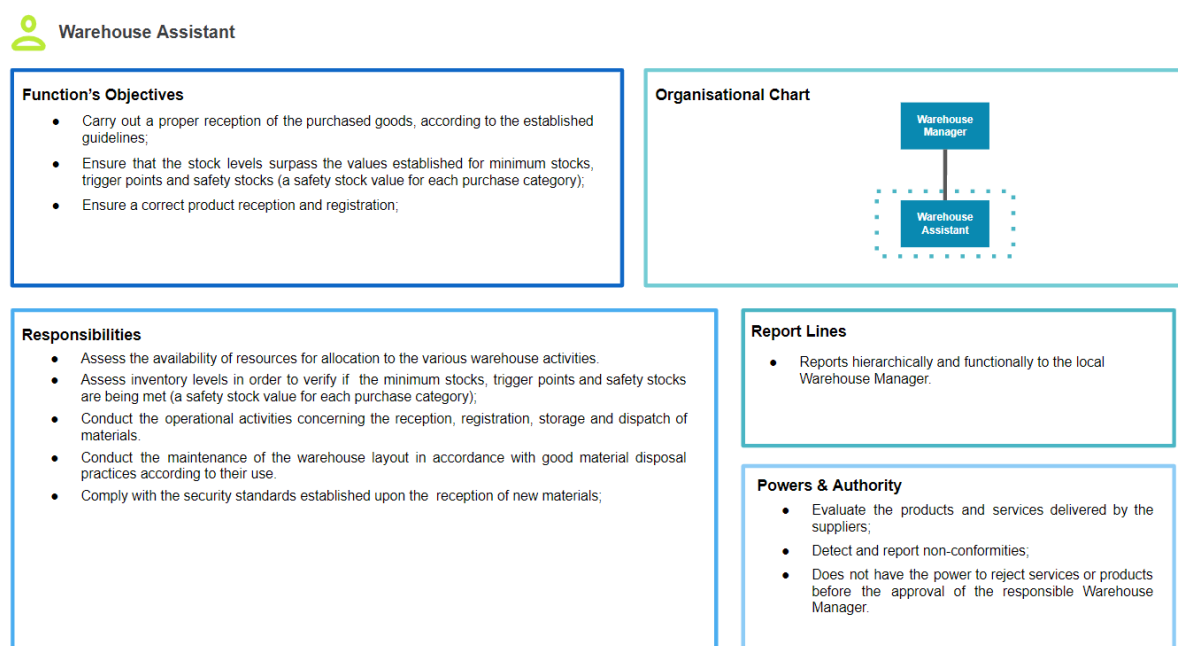


Figure E. 6- Role description of the Warehouse Assistant

APPENDIX F: Full purchasing categories list

Table F. 1- Exhaustive list of the Client company's purchasing categories

Core/Non Core	Level 1	Level 2	Structure Level of Category Management
Core	Development Services	Land Rights	Local
Core	Development Services	Development Environmental Studies	Local
Core	Development Services	Zoning	Local
Core	Development Services	Building Design and Permitting	Local
Core	Development Services	Grid Payments	Local
Core	Development Services	Project Rights Acquisition	Local
Core	Wind Technical Equipment	Turbines	Corporate
Core	Wind Technical Equipment	Grid Acquisition & Control	Local
Core	Wind Technical Equipment	Converter	Local
Core	Wind Technical Equipment	Transformer Station	Local
Core	Wind Technical Equipment	MT Substation	Local
Core	Wind Technical Equipment	HV Substation	Local
Core	Wind Technical Equipment	MV Line	Local
Core	Wind Technical Equipment	HV O/H Line	Local
Core	Wind Technical Equipment	Substation	Local
Core	Wind Technical Equipment	SCADA	Local
Core	Wind Technical Equipment	Other Wind Equipments	Local
Core	Solar Technical Equipment	Modules	Corporate
Core	Solar Technical Equipment	Power Inverter	Corporate
Core	Solar Technical Equipment	Structures	Local
Core	Solar Technical Equipment	Cables & Connectors	Corporate
Core	Solar Technical Equipment	Batteries	Local
Core	Solar Technical Equipment	Power Transformer	Local
Core	Solar Technical Equipment	PV Station	Local
Core	Solar Technical Equipment	MT Substation	Local
Core	Solar Technical Equipment	HV Substation	Local
Core	Solar Technical Equipment	MV Line	Local
Core	Solar Technical Equipment	HV O/H Line	Local
Core	Solar Technical Equipment	SCADA	Local
Core	Solar Technical Equipment	Solar Electronic Material	Local
Core	Solar Technical Equipment	Other Solar Equipments	Local
Core	Ev Chargers	Ev Chargers	Corporate
Core	LED Technical Equipment	LED Technical Equipment	Local
Core	Construction Equipment	Construction Equipment	Local
Core	EPC Services	EPC full scope	Local
Core	EPC Services	EPC - BoS	Local
Core	EPC Services	BoP or Civil Works BoP	Local
Core	EPC Services	Electrical Works BoP	Local
Core	EPC Services	Owner Engineer services (Contract Engineer)	Local
Core	EPC Services	Installation	Local
Core	EPC Services	Other Construction Services	Local
Core	O&M Services	O&M services Wind	Local
Core	O&M Services	O&M services Solar	Local
Core	O&M Services	O&M services eBOP	Local
Core	O&M Services	O&M services cBOP	Local
Core	O&M Services	O&M Civil Infrastructure Maintenance	Local
Core	O&M Services	Biomass O&M Services	Corporate
Core	Biomass Fuel	Biomass Waste Wood	Corporate
Core	Waste management	Waste Collection, Treatment and Recovery Service	Local
Core	Biomass Subsidiaries Materials and Chemicals	Auxiliary Fuels	Local
Core	Biomass Subsidiaries Materials and Chemicals	Abatement Chemicals	Local
Core	Biomass Spare Parts	Biomass Spare Parts	Local
Core	Compressed Air, Vapour and Industrial Waters	Industrial Water	Local
Core	Compressed Air, Vapour and Industrial Waters	Compressed air	Local
Core	Compressed Air, Vapour and Industrial Waters	Low Pressure Steam	Local
Core	Production Line Investment	Production Line Investment	Local
Non Core	Transportation services	Transporters	Local
Non Core	Transportation services	Freight Forwarders	Local
Non Core	Transportation services	Custom Brokers	Local
Non Core	Equipment rental services	Equipment rental services	Local

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Non Core	Property and facility management	Security	Aggregating
Non Core	Property and facility management	Cleaning	Aggregating
Non Core	Property and facility management	Utilities	Aggregating
Non Core	Property and facility management	Lease / Rent	Aggregating
Non Core	Property and facility management	Office Supplies	Aggregating
Non Core	Property and facility management	Office Maintenance and Repairs	Aggregating
Non Core	Health and Safety	Safety Material	Local
Non Core	Health and Safety	Fire Hazard Equipment	Local
Non Core	Health and Safety	Health and Safety Services	Local
Non Core	Environmental Services and Laboratory Works	Environmental Services	Local
Non Core	Environmental Services and Laboratory Works	Laboratory Works	Local
Non Core	Fleet Management Costs	Fleet Management Costs	Aggregating
Non Core	Travel Costs	Ground Transport	Aggregating
Non Core	Travel Costs	Air Transport	Aggregating
Non Core	Travel Costs	Meals & Incidentals	Aggregating
Non Core	Travel Costs	Travel agency fees	Aggregating
Non Core	Travel Costs	Lodging	Aggregating
Non Core	Marketing & Communications	Advertising	Aggregating
Non Core	Marketing & Communications	Entertainment & events	Aggregating
Non Core	Marketing & Communications	Digital Marketing	Aggregating
Non Core	Insurance	CAPEX/ Construction Insurance	Local
Non Core	Insurance	Operational Insurance	Local
Non Core	Insurance	General Insurance	Corporate
Non Core	IT & Communications	Hardware	Aggregating
Non Core	IT & Communications	Support Services	Aggregating
Non Core	IT & Communications	Telecom	Aggregating
Non Core	IT & Communications	Software	Corporate

***Observation:** Aggregating categories are to be managed at the Local structure in the Target model

APPENDIX G: Purchasing categories list positioned according to the level of management (centralised vs. decentralised)

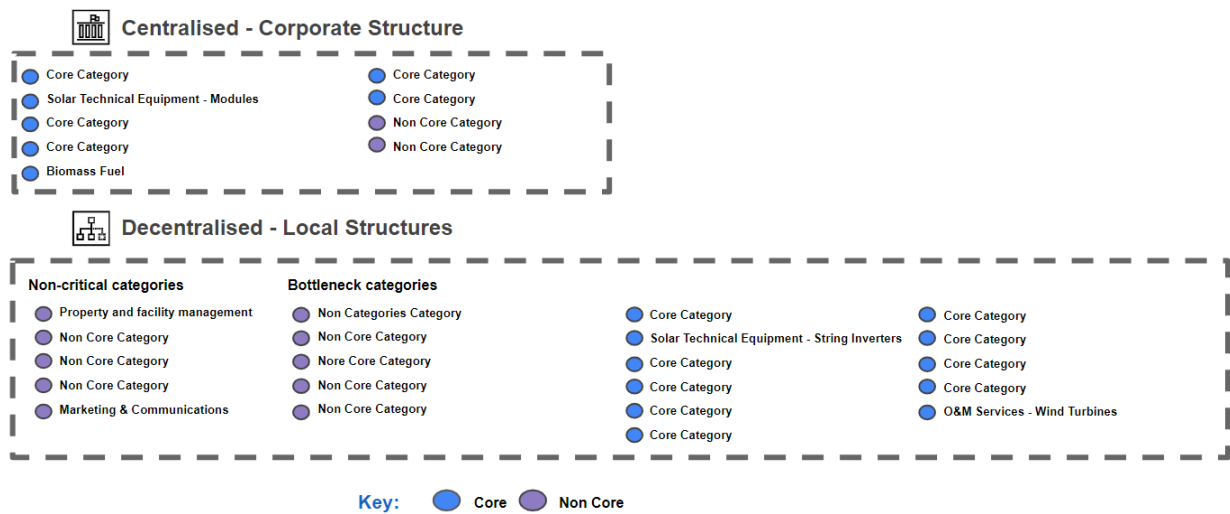


Figure G. 1- Anonymised list of purchasing categories according to the level of management (centralised vs. decentralised)

APPENDIX H: Procurement model by purchasing value

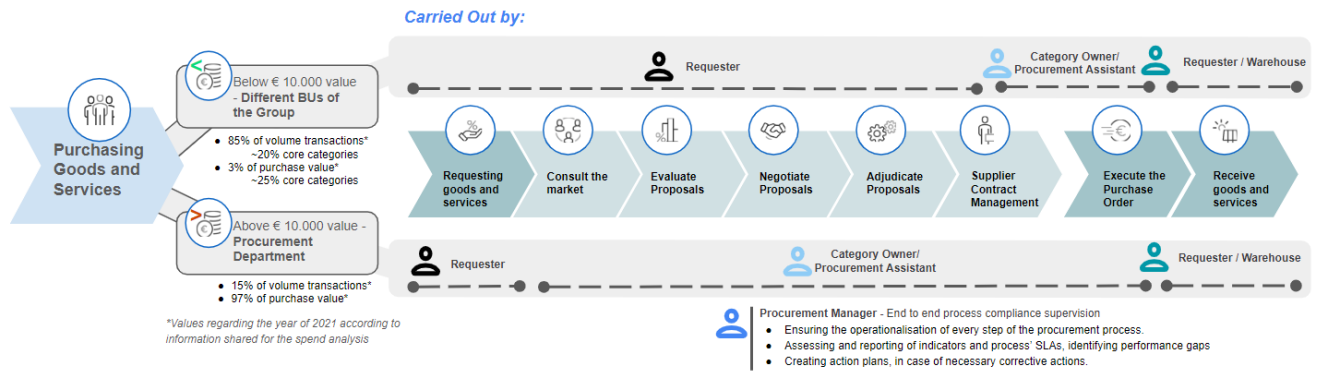


Figure H. 1- Procurement model according to purchase value

APPENDIX I: RACI Matrix

ID	Topic/ Subtopic	Timings	Procurement Committee	Head of Procurement	Procurement Manager	Category Owner	Procurement Assistant	Warehouse Manager	Warehouse Assistant	Requester	Head User	Others
1.	General Responsibilities regarding the Procurement policy											
	Definition/Revision of the guidelines for the Procurement policy	Every two years	-	R	C	I	I	I	I	-	-	Group's Board of Directors - A
	Communicating and disseminating the policy guidelines and updates throughout the organisation	Whenever necessary	-	A	R	I	I	I	I	I	I	I
	Definition of Purchasing exceptions from the policy scope of application	Whenever necessary	-	R/A	C	I	I	I	I	-	-	-
	Management of any omissions not covered by the Procurement policy	Whenever necessary	-	R/A	I	I	I	I	I	-	-	-
	Elaboration of a presentation highlighting the most important procurement results	Annually	-	A	R	-	-	-	-	-	-	-

Figure I. 1- Illustrative representation of the RACI Matrix (1/5)

ID	Topic/ Subtopic	Timings	Procurement Committee	Head of Procurement	Procurement Manager	Category Owner	Procurement Assistant	Warehouse Manager	Warehouse Assistant	Requester	Head User	Others
A	Procurement Governance and Strategy											
A1.	Definition of Procurement Strategic Objectives	Every three years	-	R	C	-	-	-	-	-	-	Group's Board of Directors - A
A2.	Definition/Revision of approval process and authorised signatories	Annually	-	C	I	I	I	-	-	-	-	Client company CEO - R/A
A3.	Preparation of the Annual Purchasing Plan	Annually	-	R	C	-	-	-	-	-	-	Group's and Company's Board of Directors- A
A4.	Definition of the Purchasing Categories	Whenever necessary	-	R/A	C	C	-	-	-	-	-	-
A5.	Indicators' Definition and Monitoring	Annually	-	R/A	C	C	C	-	-	-	-	-

Figure I. 2- Illustrative representation of the RACI Matrix (2/5)

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ID	Topic/ Subtopic	Timings	Procurement Committee	Head of Procurement	Procurement Manager	Category Owner	Procurement Assistant	Warehouse Manager	Warehouse Assistant	Requester	Head User	Others
B	Supplier Management											
B1.1	Define/Review Supplier Qualification Criteria	Annual	-	A	R	C	C	C	C	-	C	Head of Risk Management and Head of Sustainability - C
B1.2	Perform Supplier Qualification	Whenever necessary	-	-	-	R/A	C	C	C	-	C	Head of Risk Management and Head of Sustainability - C
B2.	Supplier Evaluation	Whenever necessary	-	-	A	R	-	-	-	C	-	Head of Risk Management and Head of Sustainability - C
B3.	Document Management	Whenever necessary	-	-	-	R/A	-	-	-	-	-	-
B4.	Supplier Obligations	Whenever necessary	-	I	I	R/A	-	-	-	-	-	-
C	Buying Goods and Services											
C1.	Requesting Goods and Services	Whenever necessary	-	-	-	-	-	-	-	R	-	PR Approver - A

Figure I. 3- Illustrative representation of the RACI Matrix (3/5)

ID	Topic/ Subtopic	Timings	Procurement Committee	Head of Procurement	Procurement Manager	Category Owner	Procurement Assistant	Warehouse Manager	Warehouse Assistant	Requester	Head User	Others
C2.	Consult the Market (<10.000€)	Whenever necessary	-	-	-	-	-	-	-	R/A	-	-
C2.	Consult the Market (>10.000€)	Whenever necessary	-	-	-	R/A	C	-	-	I	C	-
C2.	Definition/Revision of Multi-Criteria Matrix	Annually	-	A	C	R	I	-	-	-	C	-
C3.	Evaluate Proposals (<10.000€)	Whenever necessary	-	-	-	-	-	-	-	R/A	-	-
C3.	Evaluate Proposals (>10.000€)	Whenever necessary	-	-	C	R/A (Commercial proposal)	C	-	-	-	R/A (Technical proposal)	Risk Management Department
C4.	Negotiate Proposals (< 10.000€)	Whenever necessary	-	-	C	C	-	-	-	R/A	C	-
C4.	Negotiate Proposals (> 10.000 €)	Whenever necessary	-	-	C	R/A	C	-	-	-	C	-
C5.	Adjudicate Proposals	Whenever necessary	R/A (according to matrix)	-	C	C	I	-	-	C	-	Approver (according to matrix) - R/A Head of Risk Management and Head of Legal - C

Figure I. 4- Illustrative representation of the RACI Matrix (4/5)

Definition of the Global Procurement Function of a Renewable Energy Producer

ID	Topic/ Subtopic	Timings	Procurement Committee	Head of Procurement	Procurement Manager	Category Owner	Procurement Assistant	Warehouse Manager	Warehouse Assistant	Requester	Head User	Others
C6.	Supplier Contract Management	Whenever necessary	-	-	-	R/A	-	-	-	-	-	Head of Risk Management and Head of Legal - C
C7.	Execute the Purchase Order	Whenever necessary	-	A	-	R	I	I	-	I	I	-
C8.	Receive Goods and Services	Whenever necessary	-	-	-	I	I	-	R/A (warehouse related products)	R/A	-	-
D Stock Management												
D2.1	Elaborate stock management procedures and guidelines	Annually	-	A	-	-	-	R	I	-	-	-
D2.2	Stock Levels Definition	Whenever necessary	-	A	-	-	-	R	I	-	-	-
D2.3	Perform Warehouse activities	Whenever necessary	-	-	-	-	-	A	R	-	-	-
E Master Data Management												
E1	Perform group's master data management related to goods, services, and suppliers.		-	-	C	C	C	-	-	-		Master Data Responsible - R

Figure I. 5- Illustrative representation of the RACI Matriz (5/5)

APPENDIX J: Established requirements for the Supplier Portal

Table J. 1- List of requirements for the supplier portal

Dimension	Sub-Dimension	Requirement ID	Description of functional Requirement	Must have/ Nice to have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.01	Allow suppliers to register in the portal and create the company profile, setup the username and password. For registration of the supplier, the following data must be filled in, among others: company name, social number, address, telephone number, name of legal representatives.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.02	Allow suppliers to view and edit their enterprise information as needed, ensuring communication with SAP's supplier master data responsables for the updates.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.03	Send an alert message, via email, to the procurement team and risk team, whenever any information from supplier is updated.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.04	Allow the creation of supplier qualification criteria matrix in the system covering several areas such as: · Finance; · Quality; · Ethics and Compliance; · Environment and Sustainability; · Social Responsibility; · Regulatory; · Among others.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.05	Following the establishment of the qualification criteria matrix, it should allow the creation of a supplier qualification questionnaires to assess suppliers' compliance with the required standards. For this purpose, this questionnaire would cover several topics such as: · General information; · Financial information; · Health and Safety; · Social and Corporate Responsibility; · Compliance; · GDPR; The system should allow the creation of different types of questionnaires, with different questions and structures.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.06	Allow suppliers to upload documents and certificates to prove their compliance with the Client company's qualification requirements (eg. sustainability standards, financial risk, etc)	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.07	Upon the new supplier's registration in the system, an automatic message should be sent, containing the required qualification form, which must be responded to in order to initiate its qualification process.	Nice to have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.08	After the supplier submits the questionnaire, its score should be automatically calculated according to the information provided by the supplier, as well as based on the available internal databases (which must be integrated with the portal). Examples of databases may include Iberinform, Informa D&B, etc..	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.09	The system should allow to attribute weights to the suppliers qualification criteria, according to their relative importance.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.10	Allow the review and approval/rejection of the rating by designated qualification approvers, through a workflow.	Must have

Definition of the Global Procurement Function of a Renewable Energy Producer

01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.11	Automatically notify suppliers upon completion of their qualification review phase.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.12	Allow the existence of different supplier qualification status, according to the stage of the assessment. The status should include the following: - Qualified; - Not Qualified; - Ongoing Qualification.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.13	Allow for the possibility to list and filter suppliers according to qualification status (qualified; non qualified; and other relevant characterizations)	Nice to have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.14	Allow the blocking of suppliers registered as "Not Qualified" from any sourcing or purchasing activities. Blocking a supplier in the supplier portal should prevent orders from being sent in SAP MM.	Must have
01 Supplier Management	01.01 Suppliers Selection and Qualification	R.01.01.15	Allow suppliers and/or internal employees to send questions or comments regarding a specific sourcing initiative. The users should receive an alert through email when questions are made.	Nice to have
01 Supplier Management	01.02 Communications with supplier	R.01.02.01	Allow for the establishment of a bidirectional communication channel between the Procurement Function and the Suppliers, ensuring the communication of all relevant information required for the adequate management of the supplier relationship, such as all necessary inputs for assessments, among others.	Must have
01 Supplier Management	01.03 Supplier Performance	R.01.03.01	Allow for the creation of a supplier performance evaluation matrix, consisting of evaluation criteria and their respective weighting.	Must have
01 Supplier Management	01.03 Supplier Performance	R.01.03.02	Allow for the visualization of each individual supplier's history, respectively their performed deliveries, timings (e.g. lead time, delivery time), quantities, conformity to requirements, etc.	Must have
01 Supplier Management	01.03 Supplier Performance	R.01.03.03	Allow for the registration of relevant information, and submission of documents that testify suppliers' performance in the required dimensions/criteria. Examples include: - Delivery Notes; - Laboratory Tests; - Amongst others.	Nice to have
01 Supplier Management	01.03 Supplier Performance	R.01.03.04	Allow the production of forms and other audit supplier-oriented initiatives, such as on-site visits/verifications, in order to assess and analyse their current status and performance.	Nice to have
02 Purchasing goods and services	02.00 Cross-Sectional	R.02.00.01	Allow for a 360° view of the purchasing process, from the purchase requisition to invoicing and payments. View, for each purchase, all the information related to it - purchase requisition, purchase order, existing contracts, paid and unpaid invoices, among others. This is to be performed through integration with SAP. For ongoing purchasing processes the system should give visibility to both internal users and suppliers of the current stage of the process (ex: receiving of proposals, proposals evaluation, negotiation, amongst others).	Must have

			This is information should be available for both the internal buyers and suppliers, with the ability to filter the information visible to the suppliers.	
02 Purchasing goods and services	02.00 Cross-Sectional	R.02.00.02	The system must allow for the definition of purchase categories and subcategories, including the attribution of a category owner. For each category, it should be indicated if the category will be managed corporately, or locally. Additionally it should allow for the creation of a purchasing category tree with more than one level.	Must have
02 Purchasing goods and services	02.00 Cross-Sectional	R.02.00.03	The system should allow for the viewing of the expense history and existing suppliers for each purchase category.	Nice to have
02 Purchasing goods and services	02.00 Cross-Sectional	R.02.00.04	The system should contemplate the following figures: - Purchase requisition; - Purchase order.	Must have
02 Purchasing goods and services	02.01 Requesting goods and services	R.02.01.01	Allow the request and approval of a purchase requisition in the supplier portal, based on the approval matrix defined. The purchase requisition should be created by designated employees in each department and then passed to a designated approver for analysis. After the purchase requisition is approved, it is sent to the purchasing department. Additionally, once the PR is approved, the information should be passed, through integration, to the SAP system.	Must have
02 Purchasing goods and services	02.01 Requesting goods and services	R.02.01.02	Include alarms/notifications indicating when a new requisitions need to be approved by each approver.	Nice to have
02 Purchasing goods and services	02.01 Requesting goods and services	R.02.01.03	Allow the viewing of the status of each purchase requisition (for example: in process, approved, closed). Additionally, it should allow the recording of the timestamps associated with each intervention.	Must have
02 Purchasing goods and services	02.02 Market Consultation	R.02.02.01	Allow the creation of RFP/RFQ templates that can be used within the scope of the purchasing processes. The templates should be available in several languages, based on their country of origin and firm. Once completed, the documents produced can be sent to system-registered suppliers.	Must have
02 Purchasing goods and services	02.02 Market Consultation	R.02.02.02	Allow to create and issue RFQ for suppliers without business partner master data created (e.g. one time vendor)	Nice to have
02 Purchasing goods and services	02.02 Market Consultation	R.02.02.03	Allow for the definition of the type of procurement procedures to be performed during the sourcing process and define timelines accordingly. This may include RFP/RFQ, restricted/ two-stages tender, invitation to tender, auction	Must have
02 Purchasing goods and services	02.02 Market Consultation	R.02.02.04	Define a specific deadline in the system for each RFP/RFQ to be answered.	Nice to have
02 Purchasing goods and services	02.02 Market Consultation	R.02.02.05	Allow the buyer to filter suppliers, according to specific criteria (for example: purchasing category, geography, past performance), before sending a RFP/RFQ.	Must have

02 Purchasing goods and services	02.02 Market Consultation	R.02.02.06	Allow for the definition of fields where suppliers upload necessary documents for the market consultation phase. Such documentation may include: NDA, certifications requirements, amongst others.	Must have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.01	Allow suppliers to directly submit their proposals and/or quotes directly in the system.	Must have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.02	Change the RFP/RFQ status to "closed" after the submission deadline has passed and block the possibility to upload new documents or modify the documents previously submitted.	Nice to have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.03	Allow for the introduction of multicriteria matrix templates during the listing and evaluation of proposals and/or quotes, for each purchase category in the system.	Must have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.04	Enable the creation of separate fields to upload both the technical and the commercial components of the proposals. Additionally, the system should enable the management of access to the components based on the user role. This the is to ensure that the requesting department does not have access to the commercial proposal before the technical evaluation is completed.	Must have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.05	Allow for the definition of a minimum number of suppliers required to respond to a new RFP/RFQ, based on the purchasing category in issue.	Nice to have
02 Purchasing goods and services	02.03 Proposal Evaluation	R.02.03.06	Enable the automatic sending of messages to the selected supplier(s) informing them of the results, based on a predefined communication template. This functionality should be optional, as for certain procurement processes a more personalised communication may be desired. Nevertheless the system should enable the manual writing and sending of personalised emails to the suppliers.	Nice to have
02 Purchasing goods and services	02.04 Supplier Contract Management	R.02.04.01	Ability to define approving workflows for each contract established.	Nice to have
02 Purchasing goods and services	02.04 Supplier Contract Management	R.02.04.02	Allow for the integration with ERP at a contract level, to enable monitoring of the existent contracts and filtering by value, scope, geography, departments, cost centres and other relevant criteria.	Nice to have
02 Purchasing goods and services	02.05 Execute the Purchase Order	R.02.05.01	Allow for the visualization of past purchase orders sent to the supplier.	Nice to have
02 Purchasing goods and services	02.06 Invoice management	R.02.06.01	Allow suppliers to register invoices matching the purchase orders they received. Once the invoice is registered, its information should pass to SAP activating the vendor invoice management workflow.	Must have
03 Master Data Management	03.01 Master Data Management	R.03.01.01	Prevent the creation of duplicate master data for the various entities in the group, through the obligation to fill in a key field (tax identification number) and a validation to not allow to create suppliers with the same VAT number.	Must have
03 Master Data Management	03.01 Master Data Management	R.03.01.02	Allow suppliers to update their information in the portal. The submitted changes must then be integrated into ERP, so that they are verified and approved by the Master Data Responsible.	Must have

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			In the end, after approval of the changes, the supplier information must be updated on the portal.	
03 Master Data Management	03.01 Master Data Management	R.03.01.03	Accept only data to be entered in a specific format in order for it to be 100% compatible with the master data formats in SAP	Must have
04 Monitoring & Reporting	04.01 Procurement Indicators	R.04.01.01	Allow the creation and presentation of interactive dashboards that display defined relevant indicators such as: invoices without PO, supplier lead time, supplier defect rate, PO cycle time, rate of urgent purchases, compliance rate, amongst others.	Nice to have
04 Monitoring & Reporting	04.01 Procurement Indicators	R.04.01.02	Allow the use of filters in the procurement dashboard by criteria such as company, category, supplier, amongst others.	Nice to have
04 Monitoring & Reporting	04.01 Procurement Indicators	R.04.01.03	Provide visibility to both the buyer and the suppliers on their current account.	Nice to have
05 System Functionalities	05.01 Access, Profiles and Permissions	R.05.01.01	Allow the creation of user profiles on the portal. According to the type of profile, the accesses and available functionalities may be different.	Must have
05 System Functionalities	05.01 Access, Profiles and Permissions	R.05.01.02	When a supplier user is registered in the system, a default profile should be granted automatically.	Nice to have
05 System Functionalities	05.01 Access, Profiles and Permissions	R.05.01.03	The system must be able to be used by more than one user at the same time.	Must have
05 System Functionalities	05.02 Notifications and alerts	R.05.02.01	Allow the creation and attribution of tasks to different stakeholders via portal. Every time a new task is created, the user to whom the task is assigned is notified.	Nice to have
05 System Functionalities	05.02 Notifications and alerts	R.05.02.02	Allow for the user to consult a list of pending tasks in the system.	Nice to have
05 System Functionalities	05.02 Notifications and alerts	R.05.02.03	Remind users when they have an incomplete task. The recurrence of delay alerts must be configurable and adjustable.	Nice to have
05 System Functionalities	05.02 Notifications and alerts	R.05.02.04	Allow for an automatic email to be sent to the suppliers, the corresponding category owner, or other responsible, when there is a new interaction in the system.	Nice to have
05 System Functionalities	05.02 Notifications and alerts	R.05.02.05	Allow the user to configure the means of notification, by defining the frequency, the activation/deactivation, amongst others.	Nice to have
05 System Functionalities	05.03 Overall Settings	R.05.03.01	Allow portal access via multiple devices such as PCs, tablets, and mobile phones, as well as availability in multiple languages.	Nice to have
05 System Functionalities	05.03 Overall Settings	R.05.03.02	Allow for the export of existing system information to editable formats (Excel, txt, among others).	Must have

APPENDIX K: Descriptive sheet of each initiative included in the Initiative Roadmap

Initiative Sheet

Axis A- Initiation of Implementation of the Target Operating Model

1 2 3

Initiative: A.1

Hiring/ Appointing to roles

Description: Define of the recruitment process to fulfil the roles of Head of Procurement and Procurement Managers

Precedence: N/A

Duration: From 1 Month to 2 Months

Owner: Procurement Project Leader

Participants: Human Resources



Activities

1. Identify, if applicable, internal human resources to be appointed to the new roles of the structure.
2. Define the profile and desired skills of the roles that require external recruitment (namely Head of Procurement and Procurement Manager).
3. Participate in the recruitment actions, including selection of potential candidates, interviews, individual and team assessments, and other deemed relevant in the scope of the Procurement function.
4. Select candidates according to evaluation criteria.



Expected Results

- Roles profile and desired skills.
- Formalised employees for the roles of Head of Procurement and Procurement Managers.

Criticality: 5 - Very High

Complexity: 2 - Low

Figure K. 1- Description of Initiative A.1

Initiative Sheet

Axis A- Initiation of Implementation of the Target Operating Model

1 2 3

Initiative: A.2

Communication plan

Description: Convey specific information about the Target Operating Model to every stakeholder of the Procurement function, focusing on explaining the implementation plan and respective timings.

Precedence: N/A

Duration: Until 2 Weeks

Owner: Head of Procurement

Participants: All Procurement functions



Activities

1. Define the communication strategy by establishing the main messages to communicate and channels of communication.
2. Prepare the set of documents/materials to be used throughout the duration of the communication plan, such as supportive documents, presentations, meetings templates and other deemed relevant.
3. Identify every stakeholder that should be notified/involved in the updating of the Target Operating Model of the Procurement function.
4. Define communication sessions for both the procurement employees and other stakeholders.
5. Communicate internally the procurement organisational structure, promoting awareness of the employees to the different procurement activities, roles and responsibilities.
6. Communicate and share the implementation program roadmap, with the relevant stakeholders.
7. Share information with any external party that must be notified.



Expected Results

- Elaborated communication plan with support documents and activities.
- Involvement and commitment of internal procurement employees in the transformation process.
- Full understanding and awareness of the organisation to the new procurement function.

Criticality: 3 - Average

Complexity: 2 - Low

Figure K. 2- Description of Initiative A.2

Initiative Sheet

Axis A- Initiation of Implementation of the Target Operating Model

1 2 3

Initiative: A.3

Operationalisation

Description: Ensure the proper and updated training and qualification of all the involved stakeholders throughout the operationalisation of the Procurement function, focusing on process guidelines and responsibilities.

Precedence: A.2

Duration: From 1 Month to 2 Months

Owner: Head of Procurement

Participants: All Procurement functions



Activities

1. Define the different capabilities necessary for each employee (both Procurement and other departments) to ensure the correct implementation of the Procurement process and activities.
2. Identify existing skills/capabilities in the procurement department.
3. Prepare training content regarding the policy and processes established. For companies where SAP system is already implemented system training initiative should be defined.
4. Identify the target employees of each training session/workshop.
5. Perform workshops with the designated employees on the different process and activities established and, when applicable, on the utilisation of the systems. Workshop should focus on the clarification and execution of each stakeholder responsibility and on the target model established guidelines.
6. Define operational guidelines for Procurement model integration of new companies acquired. This includes the analysis of the new company's reality, its purchasing categories and maturity. Finally an assessment is performed to integrate the company on the model defined.



Expected Results

- Workshops and training activities for the Procurement function.
- Trained and qualified Procurement staff.
- Operational guidelines for procurement model integration

Criticality: 5 - Very High

Complexity: 2 - Low

Figure K. 3- Description of Initiative A.3

Initiative Sheet

Axis B - Systems Implementation

1 2

Initiative: B.2

IT Sourcing (1/2)

Description: Prepare and manage IT sourcing process in order to efficiently select, assess and contract a supplier portal solution for the Client company's group.

Precedence: N/A

Duration: From 2 Months to 3 Months

Owner: Head of Procurement

Participants: Head of Risk Management; Head of Sustainability; IT Department; Procurement Managers



Activities

1. Establish and align the sourcing process: define the roles in charge of the process; discuss the schedules and deliverables.
2. Define the Terms of Reference (ToR) establishing all aspects of how the designated team will conduct the evaluation, including the objectives and scope of the evaluation, team's responsibilities, in addition to a clear description of the available resources to perform the task.
3. Create RFP by defining: context, scope of project, functional requirements, technical requirements, supplier profile, instructions for preparing proposals, among others.
4. Select suppliers and send RFP.
5. Conduct proof of concept initiatives with selected providers in order to identify the practical potential of the identified and available requirements.



Expected Results

- Elaborated Terms of Reference.
- RFP.
- Detailed information from potential solution suppliers.
- Selected supplier portal solution.

Criticality: 4 - High

Complexity: 4 - High

Figure K. 4- Description of Initiative B.2 (1/2)

Initiative Sheet

Axis B - Systems Implementation		
1 2		
Initiative: B.2	IT Sourcing (2/2)	
Description: Prepare and manage IT sourcing process in order to efficiently select, assess and contract a supplier portal solution for the Client company's group.		
Precedence: N/A	Duration: From 2 Months to 3 Months	
Owner: Head of Procurement	Participants: Head of Risk Management; Head of Sustainability; IT Department; Procurement Managers	
 Activities 6. Narrow identified platforms, through an analysis of the correspondence between the requirements and the platforms' solutions. 7. Develop a scoring system (both technical and commercial) according to the defined criteria in order to prioritise and rank the different available solutions. 8. Choose the highest scoring solution to be implemented. 9. Negotiate with the service providers, according to necessities regarding timings, costs, availability and customisation. 10. Rollout of further initiatives for suppliers' portal implementation.		 Expected Results • Elaborated Terms of Reference. • RFP • Detailed information from potential solution suppliers. • Selected supplier portal solution.
Criticality: 4 - High	Complexity: 4 - High	

Figure K. 5- Description of Initiative B.2 (2/2)

Initiative Sheet

Axis C- Standardising Procurement Procedures		
1 2 3 4 5		
Initiative: C.1	Formalise the PR and PO approval matrices	
Description: Define approval limits of the different roles involved in PR and PO process.		
Precedence: A.2	Duration: Until 2 Weeks	
Owner: Head of Procurement	Participants: Group's Board of Directors; Procurement Managers; Category Owners	
 Activities 1. Define design principles to be considered as potential building blocks to determine an effective PR/PO matrix such as: a. Purchasing volumes. b. Purchase type. c. Regions/Business variations. d. Existence of procurement committee. e. Overall engagement with the same supplier. 2. Define the different thresholds based on the defined design principles. 3. Formalise the PR and PO approval matrix based on the established thresholds and approvers.		 Expected Results • Established PR and PO approval matrices.
Criticality: 4 - High	Complexity: 2 - Low	

Figure K. 6- Description of Initiative C.1

Initiative Sheet

Axis C- Standardising Procurement Procedures

1 2 3 4 5

Initiative: C.2

Formalise the procedures for purchasing goods and services

Description: Formalise the flow of activities and responsibilities, sequence of events and rules for the execution of the end-to-end purchase process, ranging from the request of goods and services to its receipt.

Precedence: A.2

Duration: Until 2 Weeks

Owner: Head of Procurement

Participants: Procurement Managers, Category Owners



Activities

1. Review procurement processes established to account for changes in the definition of the target model;
2. Define detailed procedures for the creation and approving of purchasing requisitions considering inputs, outputs and the previously established approval matrix.
3. Define market consultation procedures by defining the activities and rules when consulting suppliers.
4. Define RFI/RFQ/RFP/ITT templates.
5. Define proposal evaluation procedures and develop TCO criteria to evaluate proposals.
6. Develop procedures and rules for market negotiation.
7. Develop procedures and rules for proposal adjudication (both requiring or not the intervention of the Procurement Committee).
8. Define detailed procedures for the creation, approving and sending of purchase orders to the suppliers, considering inputs, outputs and the previously established approval matrix.
9. Define detailed procedures for the receiving and validation/return of goods/services.



Expected Results

- Reviewed Procurement processes.
- Defined procedures highlighting sequence of events, rules and responsibilities of:
 - PR and PO creation and approval.
 - Market consultation.
 - Proposal evaluation/ negotiation/ adjudication.
 - Goods/services receipt/return.
- Support documentation and templates.

Criticality: 3 - Average

Complexity: 2 - Low

Figure K. 7- Description of Initiative C.2

Initiative Sheet

Axis C- Standardising Procurement Procedures

1 2 3 4 5

Initiative: C.3

Definition of Supplier Management Procedures

Description: Define the criteria used for Supplier Qualification and Evaluation, including the analysis over risk and sustainability.

Precedence: A.2

Duration: Until 2 Weeks

Owner: Head of Procurement

Participants: Head of Risk Management; Head of Sustainability



Activities

1. Elaborate guidelines and templates to conduct supplier qualification.
2. Define thresholds for further assessment of supplier qualification (simplified and full qualification).
3. Define the criteria and respective weights to be used in supplier qualification.
4. Define mandatory documents/certifications to be requested to suppliers during qualification process.
5. Define guidelines, templates, criteria and respective weights to be used for supplier evaluation.
6. Determine the frequency and evaluation criteria to be conducted during suppliers' audits.
7. Develop template for supplier evaluation feedback.
8. Formalisation of all the above points in the supplier management procedure.



Expected Results

- Defined procedures highlighting sequence of events, rules and responsibilities of:
 - Qualifying suppliers, including risk and sustainability assessment.
 - Evaluating suppliers, including audits at suppliers.
- Developed support documentation and templates.

Criticality: 3 - Average

Complexity: 2 - Low

Figure K. 8- Description of Initiative C.3

Initiative Sheet

Axis C- Standardising Procurement Procedures

1 2 3 4 5

Initiative: C.4

Definition of Procurement Committee's regulation

Description: Define the scope of action and intervention of the Procurement Committee, defining its operational processes, responsibilities and activities.

Precedence: A.2

Duration: Until 2 Weeks

Owner: Head of Procurement

Participants: Group's Board of Directors



Activities

1. Detail the scope of action and intervention of the Procurement Committee.
2. Detail the composition of the Procurement Committee.
3. Detail the different responsibilities inside the Procurement Committee.
4. Detail the voting privilege of the members of the Procurement Committee.
5. Establish the means/place for meetings of the Procurement Committee.
6. Define and formalise the different steps and areas of assessment.
7. Define which supporting documents (and respective templates) are necessary to allow the intervention of the Procurement Committee. Establish the people in charge of preparing such documentation.
8. Formalisation of all the above points in the Procurement Committee's regulation.



Expected Results

- Established scope of intervention, composition, responsibilities and voting rights of the Procurement Committee and its members.
- Established governance mechanisms for the Procurement Committee.
- Established supporting documents for the intervention of the Procurement Committee.

Criticality: 4 - High

Complexity: 3 - Average

Figure K. 9- Description of Initiative C.4

Initiative Sheet

Axis C- Standardising Procurement Procedures

1 2 3 4 5

Initiative: C.5

Definition of Contract Management procedures

Description: Streamline contracting procedures, considering adequate documentation of the process.

Precedence: A.2

Duration: Until 2 Weeks

Owner: Head of Procurement

Participants: Head of Risk Management; Head of Legal; Category Owners; Procurement Managers



Activities

1. Define each party's role, responsibilities, and obligations in every contract.
2. Define the guidelines for filling out, signing and digitising contract documentation in the Client company's internal contract database and for registering the contracts in SAP.
3. Define the guidelines and responsibilities for ensuring contract performance.
4. Determine the frequency and criteria used for contract audits.
5. Define specific procedures for dealing with contract scope/terms changes.
6. Formalise the procedures for terminating/renewing contracts when they reach the end of their term.
7. Develop contract templates for suppliers under a Client company contract.
8. Define standard terms that must be included in all contracts developed by suppliers.



Expected Results

- Defined contract management procedures highlighting sequence of events, rules and responsibilities
- Developed contract templates.

Criticality: 3 - Average

Complexity: 3 - Average

Figure K. 10- Description of Initiative C.5

Initiative Sheet

Axis D - Develop a Procurement Performance Management Model

1 2

Initiative: D.1

Develop a Procurement Plan and Budget

Description: Define standard guidelines for the Procurement plan, as well as the general guidelines for an annual budget.

Precedence: N/A

Duration: From 2 Weeks to 1 Month

Owner: Head of Procurement

Participants: Procurement Managers, Category Owners



Activities

1. Define procedures for the draft of the procurement plan and budget and ensure their report.
2. Define a template to assess each structure's necessities regarding Procurement activities.
3. Define the requirements for a purchasing planning tool.
4. Define the principles for developing a centralised budget for the Group's Procurement function according to the initiatives included in the roadmap drafted in the scope of policies and procedures' definition project.



Expected Results

- Defined procedures highlighting sequence of events, rules and responsibilities of:
 - Mapping of necessities.
 - Prioritisation and planning of activities.
- Elaborated template for mapping of necessities.
- Identified requirements for purchasing planning system.

Criticality: 4 - High

Complexity: 4 - High

Figure K. 11- Description of Initiative D.1

Initiative Sheet

Axis D - Develop a Procurement Performance Management Model

1 2

Initiative: D.2

Preparation of the Management Information Model

Description: Define Management Information Model structure, tools and monitoring indicators.

Precedence: N/A

Duration: From 1 Month to 2 Months

Owner: Head of Procurement

Participants: Procurement Managers, IT Department



Activities

1. Identify the main strategic lines/objectives to be supported by the Management Information Model.
2. Mapping objectives and report necessities of the different Procurement structures.
3. Define indicators that should allow the monitoring of the defined objectives at the corporate and local structures.
4. Define procurement information model, including:
 - a. Reports to be produced, with details of the indicators to be presented.
 - b. Frequency of KPI production and information presentation forum.
 - c. Information sources.
 - d. Calculation methods.
5. Develop dashboard for continuous monitoring of performance of the Procurement function.



Expected Results

- Defined indicators.
- Procurement information model (indicators reports, KPI production, information sources, calculation methods).
- Established dashboard for Procurement function monitoring.

Criticality: 4 - High

Complexity: 3 - Average

Figure K. 12- Description of Initiative D.2

APPENDIX L: PwC IT Sourcing Framework

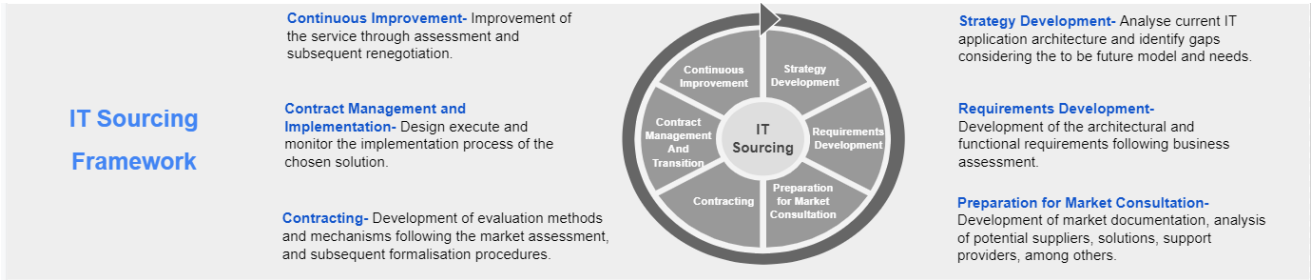


Figure L. 1- PwC IT Sourcing Framework

APPENDIX M: Timeline of activities included in each axis of implementation

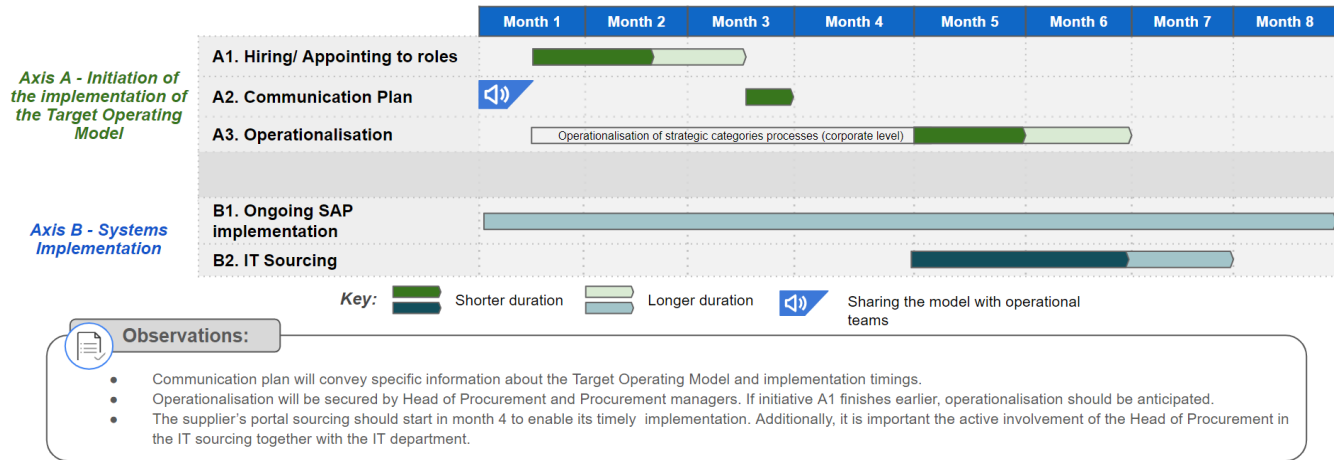


Figure M. 1- Timeline of activities for Axis of Implementation A and B

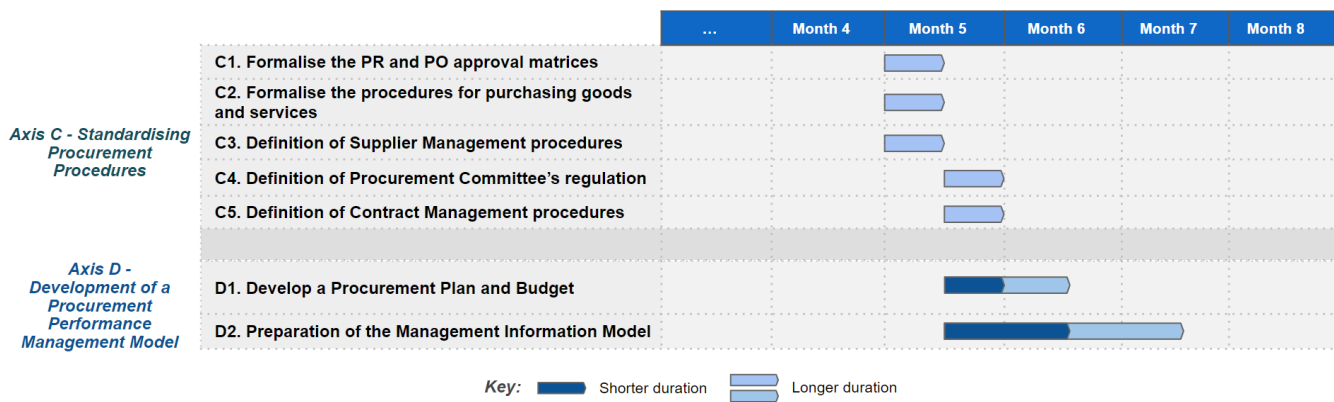


Figure M. 2- Timeline of activities for Axis of Implementation C and D