



An agile portfolio management model for the insurance sector: the APMI model

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Abstract:

Nowadays, the increasing uncertainty and instability make it crucial for traditional companies to become more agile and able to act fast on consumer needs and expectations. Therefore, many insurance companies are seeking to increasingly adopt Agile practices to become more effective, faster, and leaner in their critical processes. On the other hand, several companies are strengthening their planning methodologies by implementing Portfolio Management models. These models enable them to manage their initiatives in a more integrated and efficient manner that is strategically aligned, minimizes complexity, and provides higher flexibility when responding to uncertainty. Given the limited scientific knowledge in combining Agile and Portfolio Management (PfM), particularly in the insurance industry, a new Agile Portfolio Management (APfM) model, the APMI – Agile Portfolio Management for insurers was designed and tested, showing how Agile and PfM international practices can be conciliated with current insurance industry-specific practices. Results revealed a high satisfaction level with the model implementation, indicating that the proposed model can foster a greater strategic alignment, increase the organization's strategic focus, promote transversal alignment and visibility, and support the organization's capacity coordination.

Keywords:

agile; portfolio management; insurance industry; strategic planning.

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1. Introduction

Today, the increasing uncertainty and instability brought by new competitors and ways of doing business make it crucial for traditional companies to become more agile and able to act fast on consumer needs and expectations [1], [2]. However, this is traditionally not an easy task for many insurance companies as they typically operate with functional and hierarchical organizations that only enable them to succeed in more stable environments. Therefore, many financial institutions, such as banks and insurers, are seeking to increasingly transform themselves towards Agile and its principles to become more effective, faster, and leaner in their critical processes [3].

Another common factor in many financial companies is that they typically develop multiple and complex strategic initiatives simultaneously. Moreover, these initiatives usually cascade into several strongly correlated projects that are developed by numerous development teams in short development cycles [4]. In this context, many insurers adopt Portfolio Management (PfM) models that enable them to manage their initiatives in a more integrated and efficient manner that is strategically aligned, minimizes complexity, and provides higher flexibility when responding to uncertainty [5]–[10].

As shown by a recent PfM literature review [10], the combination of Agile and Portfolio Management comes from the 2010s onwards, which can be considered relatively recent. In this sense, the existing literature still offered limited knowledge and guidance on the results and impacts that can be achieved with the integration of Agile and Portfolio Management in the insurance sector.

To combine and integrate Agile approaches and Portfolio Management, a new agile portfolio management model, the APMI - Agile Portfolio Management for Insurers, was designed, tested, and evaluated in a leading insurance group operating in the Portuguese market. The APMI intends to be a PfM model suitable for insurance companies, aligned with the current PfM main standards like the ISO standard 21504-*Guidance on Portfolio Management* [6], the PMI's *Standard for Portfolio Management* [8], and the APM's *Portfolio Management practical guide* [9], and with the agile principles for insurance companies.

The present paper has the following structure. First, section 2 explores Agile Portfolio Management (APfM) in the insurance industry. Then, section 3 describes the study's research method. After that, section 4 details the proposed APfM model. Next, section 5 describes the implementation and evaluation impacts of the proposed model, the APMI, in an insurance company. Finally, section 6 provides the study's conclusions and describes the study's main limitations and most significant future developments.

2. Agile portfolio management in the insurance industry overview

2.1 Portfolio management in the insurance and banking industry

Regarding the application of Portfolio Management (PfM) in the insurance and banking industries, it was found that having a robust PfM process in place is the most important to maximize an insurer's performance [11]. In this sense, PfM processes strongly support an insurance company in defining, selecting, and monitoring its strategic initiatives in an organized and efficient manner [5].

Prioritization and adaptability were also described as significant attributes of PfM systems. PfM frameworks can embody robust prioritization methodologies that evaluate all initiatives qualitatively and quantitatively, ensuring that the most impactful ones are chosen right from the beginning [10]–[13]. In addition, PfM processes have cyclic revisions that enable a cadenced (re)focus and (re)selection of the most impactful strategic initiatives. These priority reviews enable the organization to rapidly respond to changing conditions and guarantee that everybody keeps following the same strategic direction [5], [10]. In other words, to make an organization more effective in the right direction [6], [8], [12] as a company can be more effective by being more focused and less multitasked, which reduces waste, optimizes resource usage, and makes the initiatives more value-oriented. A company goes in the right direction because the selected initiatives are more clearly linked with the strategic direction.

2.2 Agile in the insurance and banking industry

The values and principles established in the Agile Manifesto [14] continue to be the baseline for any insurer or bank wanting to adopt Agile methodologies or Agile Portfolio Management (APfM) models. In particular, key values such as “responding to change over following a plan” or “valuing individuals and interactions over processes and tools” must be embedded in APfM models, that have cyclical reviews and promote greater interaction and collaboration between all parts involved.

Another topic greatly analyzed in the literature is the concept of ambidexterity [15]–[17], which can be the cause of failure for many companies transforming to Agile as they cannot manage changeability and agility without losing stability and structure. However, embracing agility should not bring this kind of paradoxical tension as the Agile methodologies are, in their essence, ambidextrous [15].

In addition to ambidexterity, many other fundamental aspects, such as strategic agility [1], [2], [18], operational agility [19], [20], and an agile organizational structure [21] have been found in companies from the insurance and banking industry. However, changing people’s mindsets and cultures is known as one of the most challenging aspects of agile transformations [10], [18], [19], [22], as it is an endeavour that can only be accomplished in a top-down and bottom-up effort to reach all levels of the organization [2], [23], [24].

2.3 Portfolio management standards and agile frameworks overview

Standards such as ISO 21504 [6], the PMI’s *The Standard for Portfolio Management* [8], and other references such as APM’s *Portfolio Management practical guide* [9] have been available for organizations from many industries, providing a referenced basis to establish a portfolio management process. However, they do not detail specific solutions as they aim to be applied universally in any organization. Instead, they intend to provide a high-level approach to deal with several vital topics in Portfolio Management, such as portfolio strategic planning and alignment, portfolio optimization and prioritization, and capacity and capability management.

Several Agile scaling frameworks, such as SAFe (Scaled Agile Framework), LeSS (Large-Scale Scrum), and DA (Disciplined Agile), can also be widely found. These frameworks are being used to provide methods and structures for organization-wide agile transformations and offer insights for developing a portfolio management process supported by agile principles. In this perspective, they all refer to Lean and optimizing customer value as fundamentals for any successful company. Agile Portfolio Management processes need to be lean and agile to not suffocate the organizations with overly bureaucratic processes that decrease teams’ autonomy, slow the organization, and bring no considerable added value to the customer [25]–[28]. As an example, SAFe suggests a framework where high-performance teams are created in a customer-centred manner that maximizes and optimizes the value streams of solutions provided to the clients. These value streams have increased autonomy as they are funded holistically and not through traditional budgeting and project cost accounting methods [27], [28].

Table 1, shows a summary of the main strengths and weaknesses of the reviewed PFM Standards and Agile Frameworks that were identified and considered for the design of an APfM model for the insurance industry.

Horlach et al. [29] provide design goals and principles specific to APfM and offers some remarkable insights. However, many of these insights are also shared by the other frameworks. For example, they all share key concepts like customer centricity, budgeting teams instead of projects, and firmly aligning IT and business development.

Nevertheless, Horlach et al. [29] provide a basis for achieving agility in PFM, describing OKRs (Objectives and Key Results) and Purposes as two valuable artefacts for an APfM process. The OKRs should help the organization to achieve the challenging “aligned autonomy,” by empowering teams to set their own Key Results, which will enable the organization to achieve an overarching Objective derived from its strategy. In addition, Purposes would be a helpful way of aligning different teams contributing to the same solution, strengthening the commitment of each team member by demonstrating the impactful contribution each one has to the organization.

Table 1 - Portfolio Management Standards and Agile Scaling Frameworks - Main strengths and weaknesses for designing an Agile Portfolio Management model in the insurance industry

	Strengths	Weaknesses
Portfolio Management Standards (ISO, PMI, APM)	<ul style="list-style-type: none"> ▪ Global recognition and adoption across all industries ▪ A solid basis for establishing an Agile Portfolio Management model 	<ul style="list-style-type: none"> ▪ Very high-level approach with a low level of detail ▪ Addresses Portfolio Management broadly and not Agile Portfolio Management in specific ▪ Not specific to the insurance industry
Agile Scaling Frameworks (SAFe, LeSS, DA)	<ul style="list-style-type: none"> ▪ Solid frameworks for organization-wide agile transformations ▪ Interesting insights for establishing an Agile Portfolio Management process 	<ul style="list-style-type: none"> ▪ Do not cover Portfolio Management in detail (especially LeSS) ▪ Not specific to the insurance industry

Other recent PfM proposals available in the literature can also provide relevant insights for APfM development in insurance companies. For instance, Bai et al. [30] describe a strategy-oriented methodology for selecting project portfolios that can be divided into three main procedures: elimination of projects by resource constraints, determination of project functional value, and modelling simulation of the system dynamics. In addition, this methodology also considers the dynamic synergies to improve the accuracy of the project selection. Şahin Zorluoğlu & Kabak [31] also describe a project portfolio selection model that takes into account conditions and restrictions such as the mutual exclusive relations between projects or the progress of the projects in a given period. Silvius & Marnewick [32] propose a framework that connects sustainability with organizational strategy, PfM, and project management.

3. Research Study Design

Although several insights and best practices proposals can be identified and collected from the current knowledge, a clear and direct proposal for an agile portfolio management model suitable for insurance companies was not identified. Therefore, the purpose of this research study was to develop an agile portfolio management (APfM) model suitable for insurance companies. In this sense, the research design was divided into three major phases.

In the first phase, the literature was reviewed, 1) to collect the best PfM practices that could support the application of APfM in the insurance industry. Then, considering the major insights identified in the APfM literature review, the second phase was dedicated to 2) designing the proposed APfM model for insurance companies. Finally, following an initial diagnostic of the company's current strategic planning processes, 3) the model was then implemented using an orthodox case study approach [33] and the implementation impacts were evaluated through a survey by questionnaire within the case company to check its perceived suitability (see Appendix A).

As shown in Figure 1, after conducting the literature review, the second phase of the research design was the development of a new APfM model that would be aligned with current international PfM standards and Agile practices and would be suitable for insurance companies.

The APMI (Agile Portfolio Management for Insurers) design details are next exposed, divided into three key blocks. The first block provides the main goals of the model. Then, the second block, briefly introduces and details the organizational perimeter, namely the created clusters. Finally, the third block details the APMI six major steps.

An agile portfolio management model for the insurance sector: the APMI model

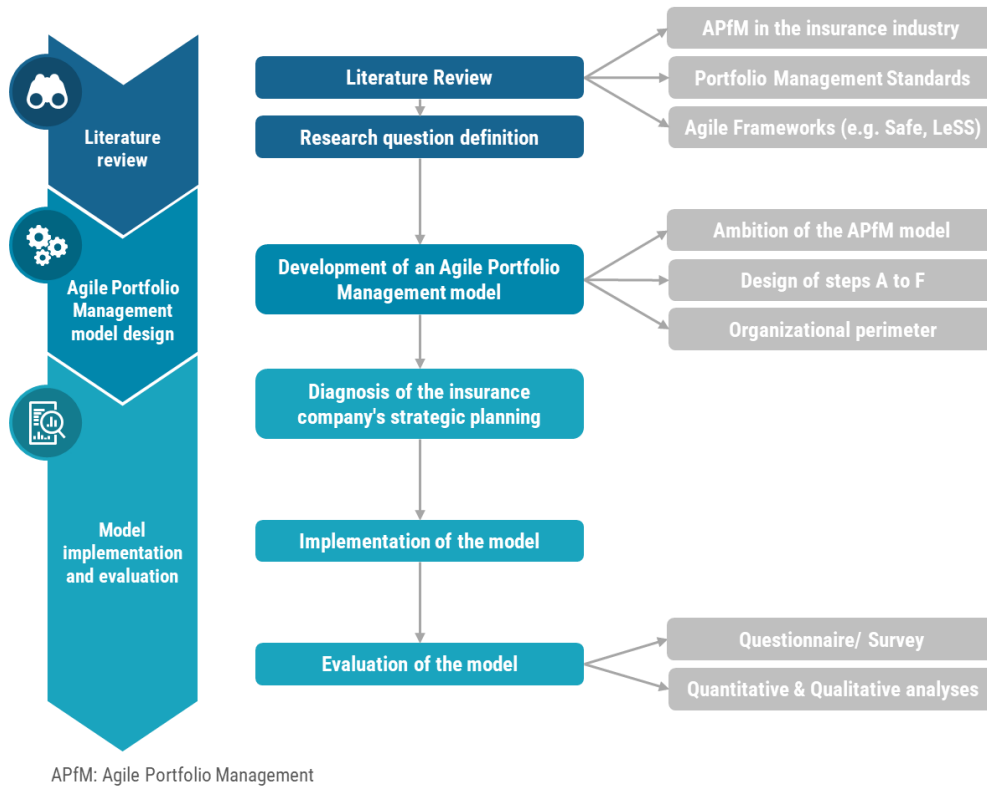


Figure 1 – The study research design

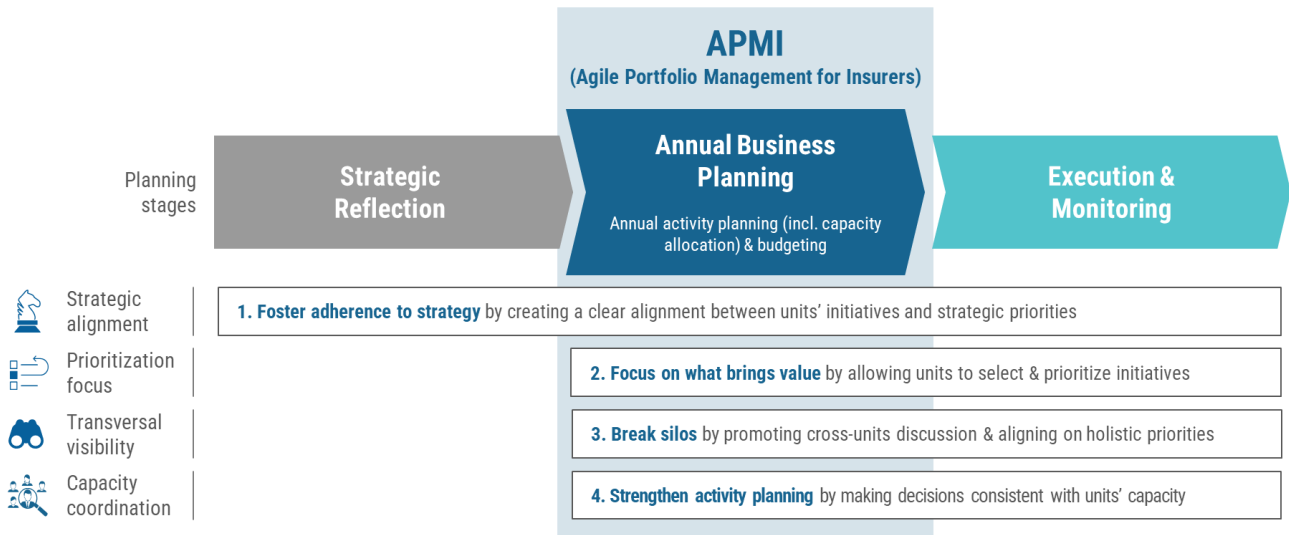


Figure 2 - Four main goals for the design of the APMI

3.1 The APMI model ambition

Typically, insurance companies divide their planning processes across a value chain with three major phases: Strategic Reflection, Annual Business Planning, and Execution and Monitoring. The APMI model is inserted in the middle stage (Annual Business Planning) and has four main goals shown in Figure 2.

These four goals represent the ambition for the development of the APMI and are consistent with the best practices identified in the literature review for an Agile Portfolio Management (APfM) process, namely the ISO TC258, PMI, and APM Portfolio Management (PfM) standards. They are also aligned with Agile values such as “responding to change over following a plan” (APMI goals 1, 2 and 4) or “valuing individuals and interactions over processes and tools” (APMI goal 3).

These goals aim mainly at ensuring the initiatives’ alignment and adherence to strategy, being focused when selecting initiatives, fostering transversal visibility between units, and strengthening the activity planning by ensuring consistent capacity coordination.

3.2 The APMI model organizational perimeter

The APMI model requires engaging different sets of stakeholders along the process, capturing a holistic and integrated view of the organization in which it is implemented. As exposed in Figure 3, nine clusters were considered in the APMI model design to facilitate the planning process and promote a greater alignment between business units. The clusters join sets of units that have synergies and similar goals and 1) provide a holistic view of the proposed purposes and ambition, 2) allow for prioritization of actions to achieve certain common business objectives, and 3) facilitate the identification of dependencies and alignment of capacity requirements in the cluster. Additionally, the clusters also promote Agile values such as greater collaboration and interaction between individuals and foster key principles like face-to-face conversation and feedback loops.

In this sense, eight of the nine proposed clusters will gather units sharing the same insurance Line of Business (LoB), and the remaining one (Sales & Servicing) will bring together the commercial and marketing units.

Besides these cluster units more related to the company’s business activity, a typical insurer also possesses several other units that do not participate directly but support the business activities. These supporting units are transversal and were left outside the cluster structure as they are not LoB-specific. Instead, they were gathered in another group called “Support units,” as seen in Figure 3. Examples of typical support units in an insurance company could be the IT, actuary, accounting, or human resources units.

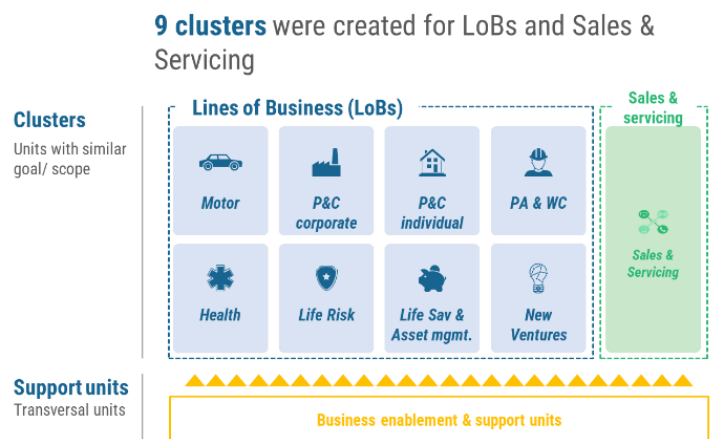


Figure 3 – APMI clusters’ structure

3.3 The APMI model’s fundamental steps

For the APMI model's design, it was decided to adopt a W-shaped approach [34] for strategic planning (Figure 4).

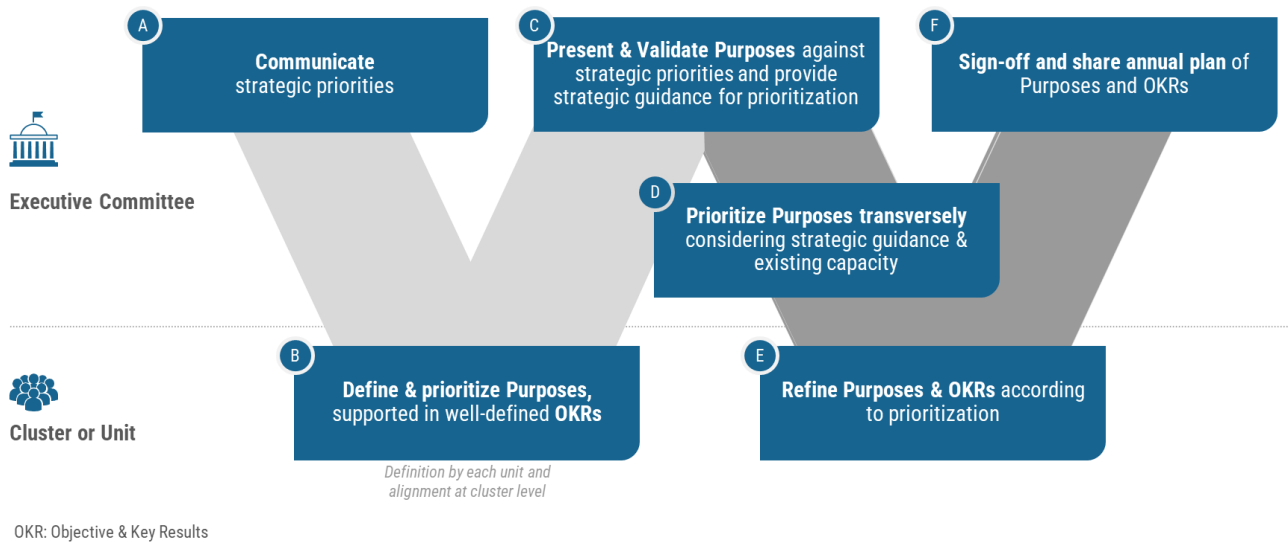


Figure 4 - Overview of the APMI model developed with a W-shaped approach

The W-shaped approach was considered suitable as it involves different levels of the organization and allows for a top-down and bottom-up alignment between the board (Executive Committee) and the several units or clusters of units underneath.

The proposed model has as primary input the company's strategy. The strategic priorities originated in the strategic reflection should be the fundamental reference guiding all decisions taken throughout the process. In this sense, the process of the designed model will be sequentially performed within six major steps, from A to F (as seen in Figure 4).

3.3.1 The APMI process: Step A - Communicate strategic priorities

Step A was designed mainly to kick off the APMI W-shaped process. This step aims to provide the primary business objectives and strategic guidelines that will support the identification of the unit's Purposes, Objectives and Key Results (OKRs) during step B.

Step A will have as its main stakeholders the Executive Committee (ExCo), all the company Executives, and the Planning Team (a team responsible for orchestrating the entire process and assuring its operational suitability).

Its primary input is the strategic reflection exercise, and the main outputs are the business objectives and the strategic guidelines to be followed (see details in Figure 5).

An agile portfolio management model for the insurance sector: the APMI model



1. OKR: Objective & Key Results

Figure 5 – Overview of the APMI's six steps

3.3.2 The APMI process: Step B - Define & prioritize Purposes, supported by well-defined OKRs

In Step B, each unit starts by defining its Purposes supported by well-defined Objectives and Key Results (OKRs) for the upcoming year, based on the strategic guidelines and business objectives shared before (in Step A). The Cluster units will then present and prioritize their Purposes and OKRs in the Cluster meeting sessions.

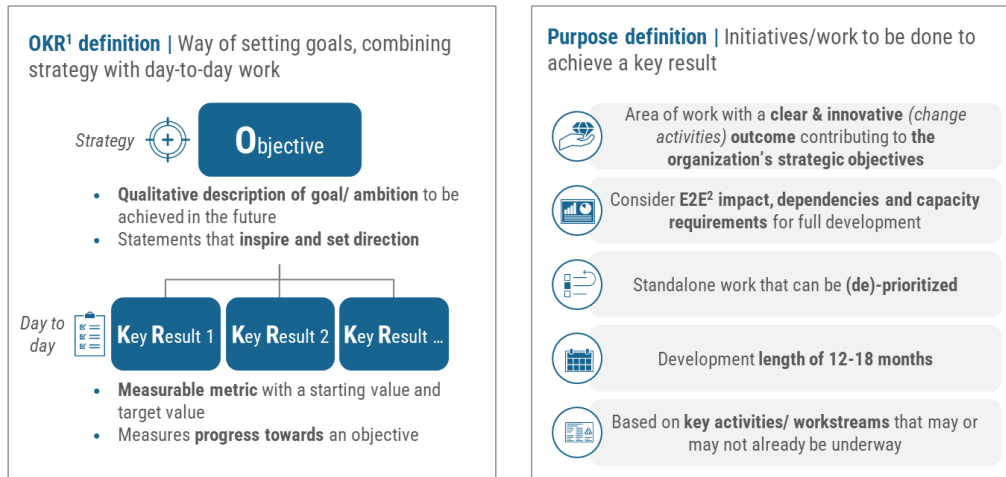
This choice of including Purposes and OKRs in the process design was majorly influenced by the Horlach et al. [29] study and was considered suitable since they both contribute to the fundamental Agile principles of empowering and enabling teams to be self-organized, building projects around motivated individuals and having aligned autonomous portfolio decision-making.

This is critical since agile processes often struggle to guarantee alignment across the organization while at the same time promoting the autonomy of each unit in its decision-making. OKRs are helpful to achieve that “aligned autonomy,” as they empower units’ teams to autonomously set their own Key Results but also ensure that they contribute to achieving a specific Objective derived from the company’s strategy.

On the other hand, Purposes are also helpful in this matter as they align teams from different units in contributing to the same solution. Moreover, purposes demonstrate each individual’s impactful contribution in unlocking a clear outcome for the customer, the agent, and/or the insurance company, as summarized in Figure 6.

Each unit starts by defining its ambition with an **OKR¹** ...

... that is supported by the **annual purposes**



1. OKR: Objective & Key Results
2. E2E: end-to-end

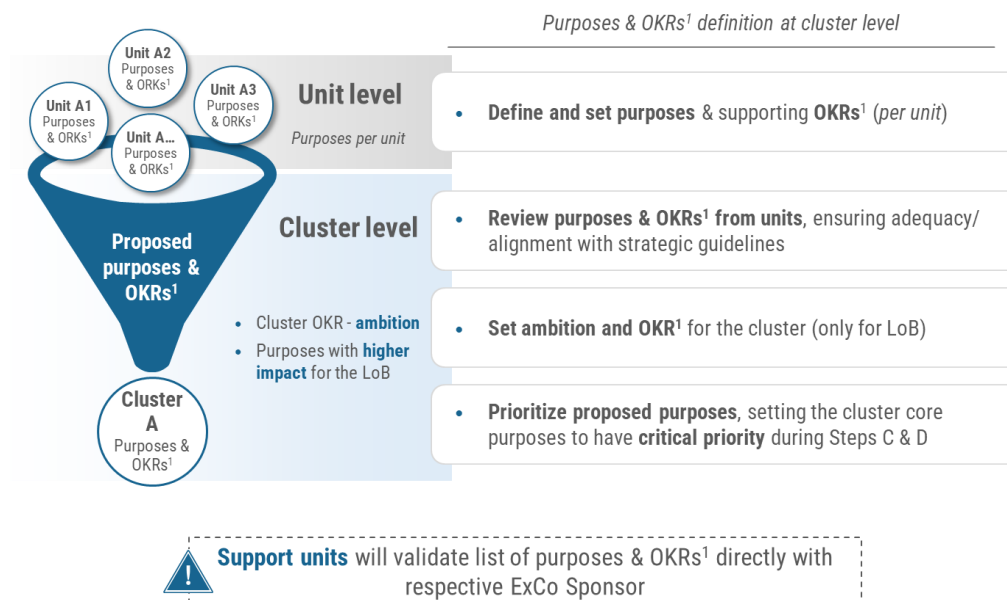
Figure 6 - OKRs and Purposes' definition in the APMI

To better evaluate the overall picture of purposes being proposed by all units, a set of labels – the Strategic Lenses – was designed to catalogue each purpose. Therefore, depending on the purposes' operational field and focus, they will be grouped into one of four major types of lenses: Product, Commercial Channels, Operations & Customer Journeys, and Corporative.

This lens classification can be useful, for example, in the next step C for the ExCo to grasp whether or not the path that the purposes are leading to is consistent with the company's strategy. It might be, for example, that there are too many purposes focusing on creating new products and offers (Product lens) when the strategic priority is to increase operational efficiency (Operations & Customer Journeys lens). In this case, the ExCo will likely deprioritize some of the purposes in the Product lens and prioritize the ones in the Operations & Customer Journey lens.

After defining their individual OKR and list of Purposes, each cluster unit must align in a forum with the remaining units from its cluster on the cluster's OKR and critical purposes. The cluster OKR should be developed based on each cluster unit's individual OKR and should set the core ambition for the cluster line of business. The critical purposes will be chosen from all cluster units' lists of purposes and should be the urgent and high-impact purposes that will impact the cluster most and, therefore, need to be dealt with quickly and in-depth.

In this sense, the cluster sessions induce a “funnel” effect where each unit presents its individual OKR and list of purposes, and one OKR and a set of critical purposes are identified for the whole cluster (see Figure 5 and Figure 7). Since these sessions are made through face-to-face conversations and discussions, they also promote greater interaction and collaboration between all parties involved, which is a fundamental Agile value.



1. Objective & Key results

Figure 7 – “Funnel” effect of APMI’s Step B

This part of the APMI model is one of the most critical as it is where the actual portfolios of purposes of every cluster are created. These portfolios should be consistent with what is found in the literature as a “standard” portfolio. According to the standards analyzed, a portfolio should be a collection of programs, projects, or operations that can be measured, ranked, and prioritized to achieve particular strategic objectives [6], [8], [9]. In the APMI model, each cluster portfolio has a set of purposes that are measured and prioritized to achieve certain strategic objectives translated into the OKR. Finally, the cluster’s OKR and purposes will naturally reflect the organizational strategy as they are linked with the identified strategic priorities.

3.3.3 The APMI process: Step C - Present & validate Purposes against strategic priorities and provide strategic guidance for prioritization

The APMI’s Step C will start with a forum, the APMI Alignment Forum, that will present and validate the Purposes and OKRs developed during Step B with all the executives and the ExCo of the insurance company. This forum should also provide an overview of all purposes distributed across the strategic lenses (see Figure 5).

After this moment of transversal alignment on the purposes proposed to be developed during the coming year, the ExCo will then analyze them in more detail and decide whether they are a priority considering the company’s overall strategy and the distribution of purposes across the strategic lenses.

In this sense, Strategic Guidance sessions should take place during step C. These sessions will aim to filter the volume of proposed purposes before they move on to the demand management sessions in the following APMI step (Step D - Prioritize Purposes crosswise). This step C is considered relevant since, in step D, the prioritization will be mainly driven by the existing capacity of the enablement units to execute those purposes and not by their actual strategic fit. Therefore, taking a step back and analyzing and prioritizing those purposes by comparing them against the company’s strategic priorities and other variables, such as the market and client dynamics or the existing commercial space, is of the most importance.

Therefore, in the strategic guidance sessions, the purposes should be classified across three main levels: *Launch in N*; *Prepare in N*, *launch N+1*; and *Design & Proposal*.

The purposes classified as *Launch in N* address top priorities for the company. Therefore, these purposes are those where a high effort and focus must be put in from both the owner and all remaining units involved in the purpose development. These priority purposes will move on to the demand management sessions in step D, where they will be prioritized based on the existing capacity of the enablement units (IT, Marketing, Analytics, and Actuary - the units that typically face more demand in insurance companies).

The second level of priority is *Prepare in N and launch N+1*. The purposes classified at this level also address essential priorities for the company but are not as urgent as the previous ones, and their launch can be delayed for year N+1. Nevertheless, the definition and development of these purposes must be initiated in the upcoming year (year N) to ensure that they are launched in the year after that (N+1). Therefore, these purposes will also require high effort and focus from all units involved, and they will move on to the demand management sessions in step D as well.

Finally, the last priority level is *Design & Proposal*. The purposes classified at this level are those that ExCo does not consider a critical priority for the company at the time. In addition, these purposes may still lack a certain level of maturity and need to be further assessed and designed by the owner unit before a decision to develop, and launch can be taken. Therefore, the effort and focus put on these purposes by the involved units should be reduced, and they will not move on to the demand management sessions in step D.

3.3.4 The APMI process: Step D - Prioritize Purposes transversely, considering strategic guidance & feasibility/capacity

Step D of the APMI model was designed to select purposes considering the strategic guidance provided by the ExCo during step C and the existing capacity of the enablement units (IT, Marketing, Actuary, and Analytics).

This purpose selection will involve the enablement units and should occur in demand management sessions. In these sessions, the ExCo should analyze the areas from the enablement units that are capacity-constrained and prioritize the purposes involving them across three main levels: *Priority*, *Backup*, and *Deprioritized*.

The purposes included in the first level (*Priority*) will be the ones selected to be implemented in the next planning year (year N) and should have higher strategic relevance and impact.

The second level will be the *backup* purposes, which can be considered the second priority. For these purposes, the enablement units will not have enough capacity to implement them. However, if the *priority* purposes are completed or suffer a delay, the *backup* purposes will be the next in line to be developed.

Finally, the last priority level belongs to the *deprioritized* purposes. These purposes cannot be implemented considering the existing available capacity and will likely be the ones with less strategic value for the company.

3.3.5 The APMI process: Step E - Refine Purposes & OKRs according to prioritization

Step E was designed for each unit and cluster to refine their purposes and OKRs after the strategic guidance and the demand management sessions. Since these sessions will deprioritize some purposes, the units and clusters will likely need to refine their remaining purposes and OKRs accordingly.

3.3.6 The APMI process: Step F - Sign off and share an annual plan of Purposes and OKRs

The final step was designed to close the APMI (Agile Portfolio Management for Insurers) model. It consists mainly of a forum, the APMI Closing Forum, where each cluster and support unit will present next year's plan of purposes and OKRs.

This final forum with all the executives and ExCo will be an excellent opportunity to look ahead to next year's plan and ensure that all units are aligned with it and know each other's priorities. In addition, giving the stage to each cluster and unit in this forum should encourage their accountability to accomplish the purposes and OKRs plan.

4. The APMI (Agile Portfolio Management for Insurers) model evaluation

After designing and developing the APMI model, the proposed model was then implemented and evaluated in the real-life context of an insurance company. As a result, a leading insurance group operating in the Portuguese market was chosen to implement and test the APMI model.

Given this group's considerable dimension and leading position in the insurance market, the group was considered to be a reference of the insurance industry and, therefore, a suitable case to implement and test the APMI model as exposed. For that, a previous diagnostic was first conducted at the insurance group that found several improvement opportunities in the group's planning that were considered coincident with the APMI major goals (see Figure 2). In this sense, the APMI model could be considered a highly suitable model to implement in the group and address its most significant needs.

An online digital tool was created to support the implementation of the model in the insurance company. This tool was created using only Microsoft tools, such as SharePoint lists and Power Apps, enabling all units to fill in its purposes and OKRs live, mitigating the circulation of different documents and versions. The tool also allowed each unit to be aware of other units' purposes that they will need to be involved in, facilitating the alignment between all involved in the development.

Following the implementation of the APMI model's six fundamental steps (see steps details in sub-section 3.3), the models' impacts were evaluated. For this, a questionnaire (see Appendix A) was sent to all the executives of the insurance group that participated in the APMI implementation test. This questionnaire included five main questions and was developed to address 1) the level of satisfaction with the process, 2) assess to what extent the initial goals have been accomplished, 3) measure the level of preparation for a future edition, 4) identify significant improvement opportunities left to be accomplished, and 5) collect other comments and feedbacks on the APMI. The questionnaire form was then sent to the 36 executive participants having a participation rate of 75%, with 27 received replies.

The APMI evaluation test survey's main results retrieved from questions 1, 2, 3, and 4 on the questionnaire can be seen in Figure 8.

The first question was intended to measure the overall level of satisfaction with the tested model. The survey found that 96% of the respondents (26 out of 27) felt between satisfied or extremely satisfied with the designed APMI process.

The second question aimed to assess if the process's initial goals have been met or not. In this sense, the participants were asked whether they agreed or not with four statements that described the goals of the APMI, namely: strategic alignment, focus, transversal visibility, and capacity coordination. The results found that most of the participants agreed with the used goal statements and that, therefore, the APMI model successfully supported the accomplishment of those goals.

The third question was designed to assess the level of preparation of the group's executives for a future APMI implementation. Since much effort was dedicated to training and supporting all units during this first implementation of the proposed APMI model, this question wanted to evaluate whether the executives feel well prepared for the next implementation edition, particularly in defining their units' objectives and purposes. The survey results found a preparedness score of 3.8/5, with most of the executive participants (62%, 17 out of 27) considering themselves well prepared or very well prepared for a future model implementation, which indicates that the level of support and training that was given was adequate and recognized.

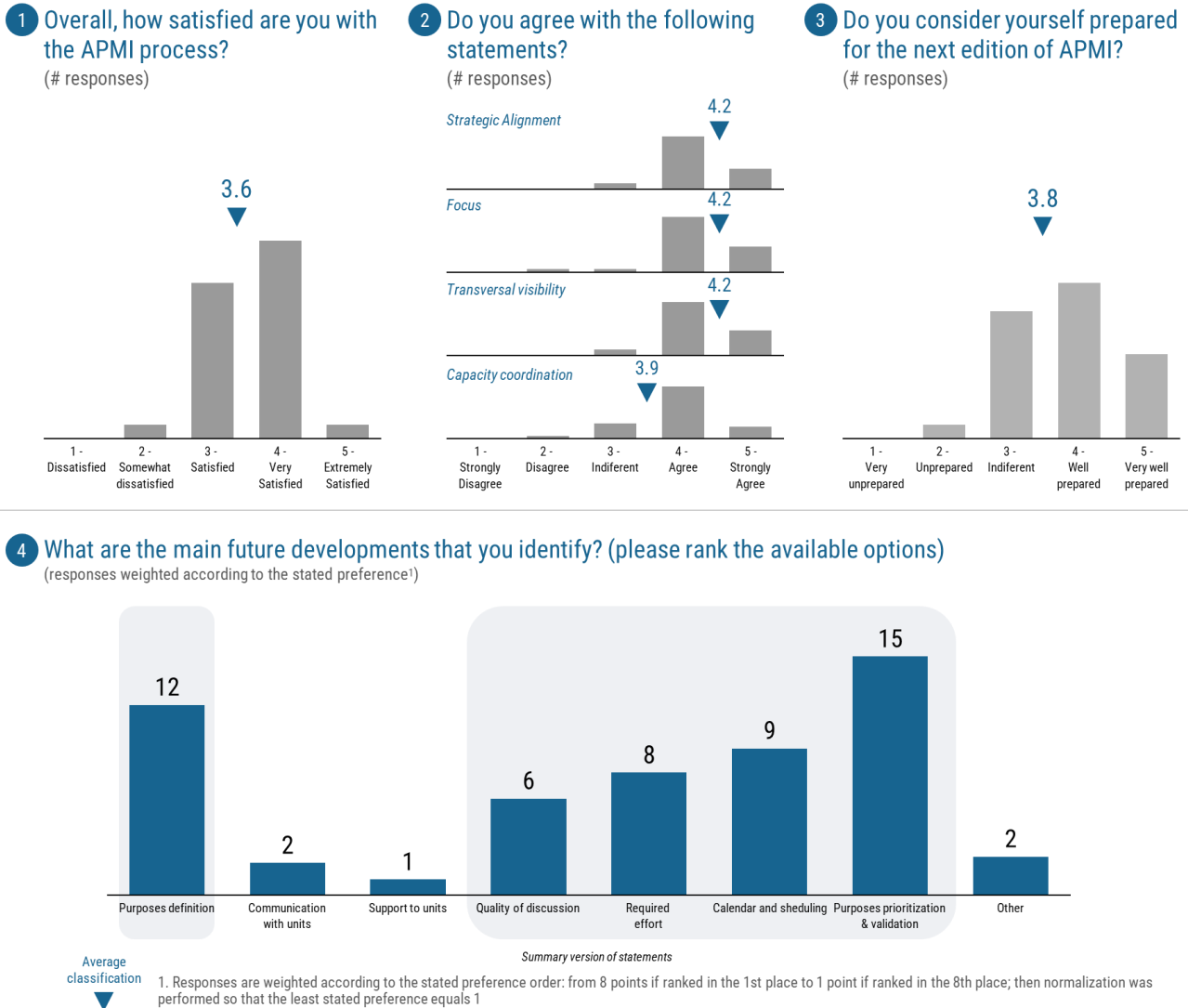


Figure 8 - The APMI evaluation survey results (questions 1-4)

The fourth question aimed to identify the process’s most significant future developments from the participating executives’ view. In this sense, a set of seven potential model improvement opportunities were identified across the following themes:

- Purposes definition;
- Communication with units;
- Level of support given to the units by the APMI implementation support team;
- Quality of the discussion moments;
- Level of effort required by the process;

- Calendar and scheduling of the process's stages; and
- Purposes prioritization and validation.

The participants were asked to rank the improvement opportunities according to their relevance. If desired, the participants were also encouraged to add any other topic to the given list. In this way, it was possible to assess the overall relative importance given to each improvement opportunity.

From the results shown in Figure 8, the most relevant factor to be improved was the one regarding the purposes' prioritization and validation. After that, several respondents also attributed high relevance to improving the purposes' definition, optimizing the calendar, and scheduling of the discussion moments, minimizing the process's required effort, and improving the discussion moments' quality.

Finally, the fifth question aimed to collect richer and more interpretive feedback by allowing the respondents to give new contributions. This question was not mandatory and was answered by 11 executive participants (41%). In this question, the respondents provided additional feedback and gave more interpretive opinions about the APMI, such as:

- Rethink the organizational perimeter of the process, namely the allocation of units in the different clusters;
- Strengthen the process of building impact KPIs, namely in purposes focused on operational improvements;
- Ensure greater transversality in the purposes since some focus on different dimensions of the same objective.

5. Results Discussion

The APMI model was proposed and developed to meet three main aspects: 1) being agile, 2) complying with portfolio management standards, and 3) being suitable for an insurance company.

Regarding the APMI's agility, the model embedded several agile features in its design, such as the clusters alignment, the Purposes and OKRs (Objectives and Key Results) definition and prioritization, the customer centricity, or the alignment between business and IT [25]–[27], [29]. These features contributed to the alignment of the model with key Agile values such as “valuing individuals and interactions over processes and tools,” “valuing customer collaboration over contract negotiation” or “responding to change over following a plan.” Nevertheless, the clusters could be more self-organized, autonomous, and further involved in the several decision moments of the process. The execution and monitoring phase of planning (see Figure 2) will play a key role in minimizing this question and enabling an even greater response to change. As the defined and selected purposes are periodically reviewed and generate more granular and shorter initiatives (or epics), clusters should be empowered to autonomously change course (if needed) and deliberate on their top priorities for the next cycle (typically three or four months). The corporate level should monitor the decisions and intervene only in critical strategic initiatives or to resolve potential conflicts in resource allocation.

Regarding the APMI's alignment with the current portfolio management standards, the main objective of any portfolio management model should be to enable a company to finish more initiatives (or purposes in the APMI's case) by doing fewer and more impactful initiatives [6], [8], [9], [11]. The survey results confirmed that the proposed APMI model did promote an increased focus in the organization with an evaluation score of 4.2 out of 5. As mentioned before, the execution and monitoring phase of the proposed APMI model will also play a critical role in this matter, as it will periodically review which initiatives are progressing as planned and which are behind schedule. More important, it will also monitor whether the purposes are delivering the value and impact that was initially proposed or not.

The survey also verified that the APMI model increased the strategic alignment of the organization's activities, achieving an evaluation score of 4.2 out of 5. In this matter, the APMI model proved to be highly effective by linking each purpose with the group's strategic priorities and each unit's OKR. As a result, in the APMI, each purpose should have a clear value and impact on the company's strategic direction, which is highly positive.

Moreover, the survey also showed that the APMI was very successful in aligning the entire organization on the path of moving forward, ensuring a higher comprehension and engagement with the decided annual business plan. In fact,

through its several alignment sessions, either within each cluster or with the entire organization, the APMI enabled transversal visibility that will undoubtedly facilitate the execution of the annual purposes plan (transversal visibility had a score of 4.2/5 in the survey). This alignment was fostered by the W shape of this model (see previous Figure 4) that enabled both a top-down (ExCo to Units) and bottom-up (Units to ExCo) alignment and collaboration [34].

Regarding the APMI's suitability for insurance companies, results show that the proposed APMI model can be suitable for any large corporation in the insurance industry or other industries as well, since the only aspect that made this model more suitable for an insurer was its cluster structure that was made according to the insurance's lines of business and can be easily adjusted to other industries' lines of business. For instance, if the APMI was implemented in a car company, clusters could bring together business units from various lines of business in the automotive industry, such as vehicles, electric vehicles, luxury vehicles, family vehicles, and so on.

However, it should be noted that the model will likely be more suitable for traditional companies with a functional structure (instead of a projectized or matrix structure). These organizations typically separate their departments in silos and therefore benefit from the model's several alignment and visibility moments. Moreover, these organizations generally tend to have their support resources centralized and need a model that manages the demand from the business units [8].

6. Conclusion and future developments

In conclusion, from the performed literature review on current Agile and Portfolio Management (PfM) knowledge, several insights and best practices can already be identified and summarized. However, since no Agile Portfolio Management (APfM) model for insurance companies was identified, this research study developed and proposed an APfM model that could be implemented in insurance companies, the APMI – Agile Portfolio Management for Insurers. This model considered current Agile practices and knowledge, as well as the available PfM best practices standards, and was tested in a Portuguese leading insurance company.

The APMI model used a W-shaped approach to strategic planning (see Figure 4) that was not yet fully explored in the academic literature (only in grey literature). This study further explored and detailed the W short-term planning (typically one year) and added new relevant features to it such as the cluster organizational structure or the introduction of Purposes and OKRs as key planning artefacts.

Moreover, this study also contributed to the existing knowledge regarding ambidexterity, one of the critical factors for being agile, as it developed a model that can align the corporative need for predictability and long-term strategic planning with the market's need to be flexible and constantly review (and, if necessary, change) how new and innovative business fields are approached. In other words, the APMI model guarantees the production of a plan that is aligned with the long-term corporate strategy, but can also be cyclically reviewed, allowing for a constant (re)focus and (re)selection of the initiatives that will enable achieving that strategy in the better and most effective way.

On the current research study limitations and future developments, the APMI model was tested in a single case study from an insurance group that constituted a typical and suitable case to achieve the goals of this research project. However, the proposed model is highly transversal and can be applied in many other industries with few modifications. Therefore, a major future development would be to implement the APMI model in other companies, from the insurance sector or not, to further validate its impact and adequacy.

Finally, another significant future development would be to further explore in deeper detail the design of the APMI model execution and monitoring phase, given its relevance to the model's agility and successful execution of the planned initiatives/ purposes. This phase of the APMI model should address four key objectives: 1) Review business performance in the past cycle (typically three or four months); 2) Update Purposes' pipeline and share key achievements and next steps, considering the success metrics and the committed roadmap; 3) Define Epics and success metrics for the upcoming cycle; and 4) If needed, prioritize Epics competing for the same capacity while managing dependencies between them.

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Appendix A. APMI feedback questionnaire

1. Overall, how satisfied are you with the APMI model that was implemented for the first time this year? (1 - Dissatisfied to 5 - Extremely Satisfied)
2. Do you agree with the following statements? (1 – Strongly Disagree to 5 – Strongly Agree)
 - a. The APMI allowed a greater strategic alignment of the organization’s activities
 - b. The APMI has led to a greater focus on the organization for 2022
 - c. The APMI allowed the various units to have transversal visibility on the priorities for 2022
 - d. The APMI increased the capacity coordination between units, promoting a successful execution of the defined Purposes
3. Do you consider yourself prepared for next year’s edition of the APMI (e.g., to define Purposes and establish annual objectives)? (1 – Very unprepared to 5 – Very well prepared)
4. What are the main future developments that you identify for the APMI process? (put first the improvement opportunities that you consider most relevant; it is not necessary to select all options)
 - a. Improve the quality of the definition of purposes (example: tangibility of ambition)
 - b. Simplify communication with units
 - c. Improve the support given to units
 - d. Promote greater quality and relevance of the discussion moments
 - e. Reduce the effort dedicated to the process (example: the number of preparation meetings)
 - f. Optimize the calendar of discussion moments, minimizing overlap with other processes (example: budget)
 - g. Strengthen the validation and prioritization of purposes taking into account the strategic priorities and available resources in the organization
 - h. Other (if yes, which one?)
5. What other considerations would you like to provide as feedback to the APMI process?

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