

# Creating a Service Product for Research Project Life Cycle Management in a Higher Education Institution: A Case Study

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**Abstract**—Higher Education Institutions (HEIs) increasingly seek to systematize their operations using businesslike practices. This study examines the productization of an internal research project management service in an HEI. Employing a qualitative single-case study, challenges in formalizing this internal enabling service are identified, its current state is assessed, and an ideal structured process is designed. Key challenges include difficulty standardizing a knowledge-intensive internal process and the need to define the customer when both internal and external actors—funders and researchers, respectively—are stakeholders. A current state analysis revealed uncoordinated practices and a lack of ownership in project initiation. Applying product portfolio thinking, an ideal model was designed that clarifies roles, stages, and flexibility for different funding requirements, defining both the technical internal process and the commercial outward-facing structure of the service. Productizing this internal service is shown to improve efficiency and consistency, and facilitates Customer Relationship Management (CRM) by enhancing how the HEI engages with external partners. The research findings contribute to the literature on service productization in HEIs and provide practical guidance for universities seeking to improve their research support services.

**Keywords**—service productization, project management, higher education, service portfolio, Customer Relationship Management (CRM)

## I. INTRODUCTION

Finland's most important resource and source of competitive advantage is skilled and creative people. In the future, the importance of knowledge, creativity, and expertise will increase, and scientific breakthroughs will help solve humanity's major challenges, thus improving the quality of human life [1]. The role that Higher Education Institutions (HEIs) play in society is critical to the enabling of advanced instruction, the production of scientific research, and the shaping of society. HEIs operate at the nexus of various stakeholder concerns in a constantly changing and increasingly competitive

environment, which necessitates continuous improvement of their operations.

In recent decades, public higher education has been influenced by New Public Management (NPM) principles that impel universities to adopt businesslike practices and emphasize performance and customer-centric service delivery [2]. For HEIs, this shift has meant viewing students, corporate partners, and other collaborators as customers and employing Customer Relationship Management (CRM) strategies to actively manage these relationships [3–5]. Recent research notes the expanding strategic role of CRM in HEIs, highlighting its evolution beyond student recruitment to include digital engagement and data-driven decision-making [5]. To enhance their competitiveness, HEIs must clarify and systematize the services they offer, and such service development can be pursued through productization. However, there have been relatively few studies on this approach in the context of HEIs. According to Aapaoja *et al.* [6], universities can strengthen their role as service providers by productizing their services because a productized service portfolio acts as an element that supports organizational goals and stakeholder interaction. Similarly, NPM-oriented funding models encourage HEIs to develop well-defined service offerings to demonstrate efficiency and value. Productizing services can therefore be seen as one way for universities to adopt a design-thinking and customer-centric approach, enhancing collaboration with industry partners and intensifying societal impact—in line with NPM ideals [2]. Nonetheless, the research project life cycle in HEIs is typically not systematized, making it challenging to manage and support consistently.

The purpose of this study is to examine HEIs as service providers and research partners, focusing on the development and productization of their service offerings through a case study. The service portfolio of HEIs is examined using a single case study of one organization and a representative service. The representative service offering productized in this study is a research project management service, which includes tasks that constitute the preparatory processes for research projects at the institution, securing external funding, and project

implementation. In other words, research project management is an internal enabling service—a *service of a service*—that supports core research activity at an HEI by supporting researchers as they develop project ideas and secure funding. By analyzing this case study, this research identifies the key challenges in productizing a research project management service in a higher education context, assesses the current status of the research project management service at the case institution, and explores how adopting a product portfolio perspective in formalizing the service can improve its delivery and support CRM in an HEI.

This study aims to achieve its goals by answering three research questions.

**RQ1:** *What are the key challenges in productizing research project management services in HEIs?*

**RQ2:** *What is the current state of the research project management service in the case organization, and what would an ideal state of this service look like?*

**RQ3:** *How does adopting product portfolio thinking improve research project management services and support CRM in HEIs?*

The research questions are addressed through a literature review and an empirical qualitative case study. The methods of data collection and analysis are described in Section III.

## II. LITERATURE REVIEW

### A. Service Product

Härkönen *et al.* [7] describe a service product as a defined service or intangible offering that can be ordered and invoiced, as well as sold and delivered to satisfy customer needs. According to Wirtz *et al.* [8], a service product primarily refers to a performance that is experienced and not owned, and even if the service also includes physical elements, a significant portion of the value of the solution is delivered to the customer via the service. For expert services, process orientation is typically more important than product orientation, and employees (the professionals delivering these expert services) and their skills and knowledge are more important than equipment. This inevitably poses challenges to the management and marketing of expert services, especially with regard to operational management, service communication, sales promotion, and pricing [9].

A service product can be modeled on commercial and technical structures, such that the commercial structure comprises the part of the product that is visible to the customer—one that is characterized by several hierarchical levels. The technical structure encompasses the service processes, subprocesses, and resources required to produce the service product [7, 10–12]. In essence, the commercial perspective defines what is offered to the customer, while the technical view describes how the service is produced and delivered.

### B. Productization

According to Jaakkola *et al.* [13], productization is a tool for service development. Productization can be used

to support the creation of the structures needed to enable the directing and managing of service production [7]. Simula *et al.* [14] define productization as a set of tasks aimed at defining, describing, improving, producing, and continuously developing an offering, whereby customer benefit is maximized and the organization's goals are achieved. This is accomplished by clarifying and rationalizing the offering to make operations more efficient and to create a more attractive offering for the customer. Productization of services is especially about clarifying the service offering, creating repeatability, and increasing comprehensibility [12], while also helping to reduce overlapping efforts, improve service quality, and foster a shared understanding of service offerings [15]. Productizing a service involves specifying and systematizing the content and implementation of the service in alignment with the organization's strategy [9].

Service development is rarely a strictly linear process, and each organization may undertake service productization from its unique starting point and for diverse reasons [9]. However, service productization primarily entails managing the service processes and the resources needed to deliver the service. In this regard, service processes with a clear, defined form can provide the necessary simplicity and routines for service delivery as well as facilitate the repeatability of the service. To define a service through productization, the service processes must be clarified and documented. The interrelationships between service processes and subprocesses must be modeled, and their connections to the required resources, personnel skills, materials, and facilities must be identified [7, 12, 15]. In building a coherent offering, the technical product structure should be linked to the commercial product structure such that each service variant corresponds to a defined sales item in the portfolio [11]. Detailed service process descriptions and documented working methods for each element of the service are essential to ensuring consistent quality [7, 12]. In commercial productization, the primary focus is managing product variations and sales items [11].

In public service organizations such as HEIs, productization is also driven by the need to improve transparency, efficiency, and accountability. Juntti [2] reports that universities of applied sciences in Finland have adopted service productization partly in response to NPM-driven funding models, introducing clearer service definitions and service-dominant logic to enhance public-private partnerships. By productizing their services, HEIs can better communicate their value propositions and meet external stakeholders' expectations for professionalism and performance [2].

### C. Service Portfolio

A service portfolio is the collection of service offerings available from an organization [16] and can be built in accordance with the product structure concept by taking into account both the commercial and technical structures of the services [10–12, 15]. According to Kuula *et al.* [17], a commercial service product portfolio defines the service solutions offered to customers, along with the pricing; in

contrast, a technical service product portfolio describes the process by which these services are produced and delivered, along with the associated costs. Typically, a product or service portfolio is structured into nested portfolio components such as product lines or product families. A product family is a collection of product or service configurations that target the same customer segment or share the same technological platform [10, 11]. In the context of services, all service products can be viewed as configurations comprising various service elements or sales titles [7, 15]. The technical dimension of a service portfolio consists of service processes, subprocesses, and tasks [10, 18]. Fig. 1 presents a generic service portfolio structure, as proposed by Härkönen *et al.* [7], illustrating how individual service elements form an offering.

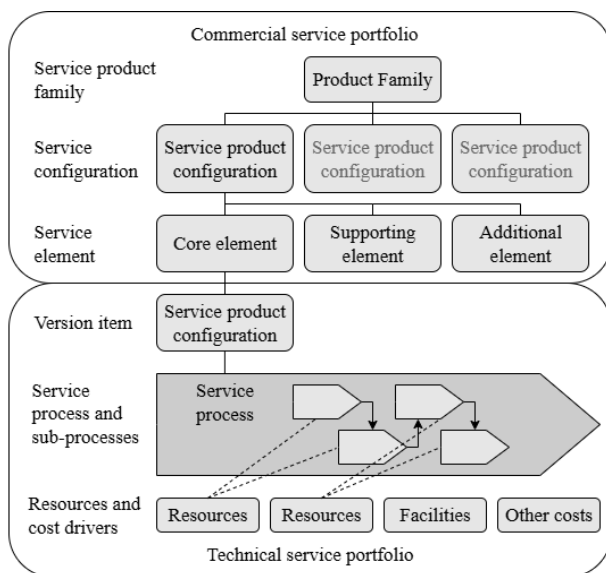


Fig. 1. Service portfolio, per Härkönen *et al.* [7].

#### D. Research Projects in HEIs

Rioli and Thuillier [19] describe the typical life cycle of an academic research project as beginning with an ideation phase during which initial ideas are generated and feasibility is assessed—including identifying potential collaborators. If the idea is viable, the project moves on to a planning phase, during which a detailed project plan is developed, objectives and scope are defined, a budget and schedule are drafted, and an application for funding is submitted to a funding agency. If funding is granted, the project progresses to the implementation phase, over the course of which research activities are executed and monitored. Finally, it advances to the conclusion phase, in which results are compiled and disseminated, and the project is formally closed. Similarly, Wedekind and Philbin [20] conceptualize the life cycle of a research project as a process comprising the following phases: ideation, preparation and submission of application(s) for funding, funding negotiation, research implementation, and closure. In this model, responsibilities often shift: principal investigators such as professors and senior researchers are typically responsible for the early

preparatory phases such as ideation and proposal writing, while research staff and students execute much of the implementation. The duration of each research project is usually determined by the funding period [21].

Twohig *et al.* [21] note that the facilitation of learning from projects, as well as the prioritization and measurement of projects in line with organizational objectives, is still limited within HEIs. Particularly the transfer of knowledge and lessons learned from one project to another would provide a valuable opportunity to improve the quality of research projects. Similarly, adoption of a process-oriented approach to research projects helps ensure that project tasks are properly budgeted and scheduled, that all project deliverables are clearly defined, and that risks are effectively managed [20]. In line with this, structured project management guidelines and tools have been shown to address issues such as small team sizes, centralized management, and weak schedule control, resulting in improvements in project performance [22].

#### E. Collaboration between HEIs and Industry Partners

Universities have many different stakeholders—students, alumni, academic staff, administrative staff, the government, regulatory bodies, corporate clients, and other universities—which makes their operations complex [3]. HEIs exist in a state of constant flux as they try to follow and adopt market trends. Consequently, emergent management practices such as CRM strategies are being adopted in the HEI sector [4, 5, 23]. HEIs provide a wide range of services, such as education, research, and knowledge transfer, and therefore have strategic, operational, and collaborative needs that are particularly diverse from a management perspective [20]. Moreover, CRM in higher education has evolved from a narrow focus on student admissions to a broader strategic role that includes digital engagement and analytics, with effective implementation supported by organizational capabilities and technologies shown to enhance institutional performance [5, 23].

Evans and Miklosik [24] describe University-Industry Collaboration (UIC) as a tool for innovation that involves collaborative projects, sharing of expertise, co-development of new technologies or services, creation of spin-off companies, and shared facilities. However, they also highlight common challenges and barriers to UIC. Orientation barriers arise from differences in priorities, timelines, and expectations between a university and corporate stakeholders. Transaction barriers involve practical challenges in collaboration tasks, such as intellectual property issues and bureaucratic processes, while resource barriers pertain to limitations in funding, personnel, or infrastructure required for collaboration [25]. Aapaoja *et al.* [6] assert that a lack of understanding among industry actors regarding what a university can offer often engenders the perception that academic research is too theoretical and not aligned with industry needs, thus hindering collaboration.

Several factors can promote successful cooperation and co-innovation. Sjöo and Hellström [26] identify some of

these factors, including the following: dedicated resources for collaboration, interface functions or liaison roles that intermediate between universities and companies, supportive university organizational structures, prior collaboration experience, and compatible organizational cultures. Aapaoja *et al.* [6] posit that continuous communication between universities and companies is essential for creating synergy. Furthermore, they argue that a productized service portfolio can serve as a tool that supports mutual goals and improves interaction. If the services a university offers are clearly defined and well packaged, it becomes easier for companies to understand and engage with the university's offerings. A productized service portfolio could therefore contribute to the university meeting customer demands and achieving its goals, thus laying the foundation for long-term, mutually beneficial cooperation [6].

### III. MATERIALS AND METHODS

#### A. Research Methods

This research was conducted using a qualitative single-case study design. The empirical phase consisted of data collection via interviews, surveys, and workshops conducted in the case organization, followed by thematic analysis and service modeling. The qualitative research approach was adopted because it can facilitate an in-depth understanding of the phenomena through the perceptions and experiences of the study participants [27]. The primary data collection method employed was the semi-structured interview, which was supplemented with surveys and workshops. A semi-structured interview follows a prepared outline of topics but allows for flexibility, such that new information and discussion paths may emerge [28]. This approach is suitable for exploring the relatively unstructured topic of research project management practices. In total, 12 interviews were conducted, along with two workshops and two surveys for additional input. Thematic analysis was applied to the qualitative data generated. Thematic analysis is a method for identifying, analyzing, and reporting patterns and themes within data [29] that allows both explicit and implicit themes to be identified [30]. The interview transcripts and workshop notes produced in this study were coded and organized into themes that captured key aspects of the research project management service and improvements to the service.

Seven preliminary semi-structured expert interviews were conducted with university stakeholders. Based on these interviews, the most important services offered to external stakeholders were identified, among which research project development emerged as the main service to be examined in this study. Next, five semi-structured interviews with personnel of the case organization were conducted to map the current state of the research project management service. Using the interview data, a preliminary thematic framework for the research project management process was created. Building on this, two workshops were held with stakeholders from the case organization to validate and deepen our understanding of

the process and to collaboratively model a structured service product. Short follow-up surveys were used in conjunction with the workshops to capture individual feedback on specific questions. Data were also gathered from existing materials, such as university documents, internal guidelines, and relevant website content, and through participant observation during project meetings and training sessions. These additional data sources provided context and helped triangulate the findings from the interviews. The data sources in this study are outlined in Table I.

TABLE I. DATA SOURCES

Type	Explanation
Interviews (n = 12)	7 exploratory interviews with university stakeholders, and 5 focused interviews with case unit personnel
Workshops (n = 2)	Collaborative sessions with case unit researchers and staff
Surveys (n = 2)	Short questionnaires administered to university stakeholders and workshop participants
Documentation and direct observation	Internal guidelines, university websites, project meeting notes, and direct, participant observation during training sessions

#### B. Case Organization

The case organization is a research unit in the Faculty of Technology, University of Oulu, Finland. It was selected because it engages heavily in externally funded research projects and thus regularly performs project development tasks such as preparing funding proposals and forming research partnerships. The strategic goals of the Faculty of Technology include conducting top-tier research, supporting emerging fields, providing education informed by high-level research, and fostering cooperation with industry partners and the broader society. The case unit's mission aligns with these goals, as it aims to create and promote research, education, and social impact through its research activities.

The core areas of expertise of the research unit include project business, production and supply chain management, product management, and work well-being and productivity. The research conducted by this unit is practice-oriented and carried out in close cooperation with various external organizations, including companies, other research institutions, and public agencies. Before this study, the unit did not have a formally defined service product or standardized process for project development. Researchers and research groups were largely independently responsible for developing their projects and applying for funding, and there were few common practices or dedicated support tools for these tasks. This situation presented both a challenge and an opportunity—a challenge because a lack of standardization can lead to inefficiencies and missed opportunities, and an opportunity because there was clear room to implement improvements via productization and CRM strategies.

IV. RESULTS AND DISCUSSION

A. Current State of the Research Project Management Service

The data collected through interviews, surveys, and workshops were synthesized and are presented in Table II. The themes identified through a thematic analysis of the interviews are outlined in Table II, along with the practices and challenges associated with research project life cycle management, which are organized by theme. For clarity, each theme in Table II corresponds to a stage or aspect of the research project life cycle management process. *Background factors* refer to the context in which projects are developed. *Lead* refers to the identification and handling of initial project opportunities. *Ideation* covers the development and evaluation of project ideas, including assessing fit and contacting partners. *Project development and application for funding* encompasses the proposal development phase, along with planning, budgeting, and coordination. *Implementation* touches on how research projects are set up and managed once funding is obtained, while *documentation* pertains to recordkeeping and reporting practices. Finally, the key challenges and improvement need identified across the preceding stages are summarized under *areas for improvement*.

TABLE II. THEMATIC CATEGORIES OF THE STUDY DATA

Theme	Summary
Background factors	– A little over 50% of the organization’s funding comes from external sources, and project development is aimed, in part, at securing such funding.
	– To be considered for implementation, research projects must support the university’s strategy and align with the unit’s core areas of expertise while also creating value through research, education, and societal impact.
Lead	– Leads can originate from various sources: funding opportunities, previous partner organizations, partner networks, companies, researchers, and other universities.
	– There is no systematic approach to acquiring or managing leads, and their progression to research projects depends on whether someone takes ownership of the idea.
Ideation	– In most research group, ideation involves mainly senior researchers and professors, although this varies in practice.
	– The potential of an idea is assessed in light of the organization’s competencies and resources, the funding source, and potential benefits.
	– Potential partners can be contacted during the ideation phase.
Project development and application for funding	– Responsible researchers and research groups independently manage research project development.
	– Development typically involves potential partners, and responsibilities may be shared.
	– During development, a research plan, workload planning, budgeting, and funding plan are created.
	– University support services are utilized to some extent in research project development and application for funding.

Theme	Summary
Implementation	– The organization lacks common practices or tools for research project management.
	– Projects are budgeted and resourced based on the project plan.
	– Research projects are evaluated and modified as needed, and feedback is collected inconsistently.
Documentation	– Documentation practices vary by project.
	– Information related to the research project and its development is typically stored on a shared platform (e.g., a Microsoft Teams workspace).
	– Project summaries are submitted to leadership through the unit’s reporting model and reported to the faculty dean.
Areas for improvement	– There is no consistent practice for handling or archiving leads and ideas.
	– Ideas often lack a clear owner, which can lead to promising projects stalling or disappearing.
	– Project development processes and guidelines are not always clear or easily accessible.
	– Financial issues are perceived as particularly challenging, especially from a project manager’s perspective.
	– Finding suitable partners can be difficult.
	– Documentation can be disorganized.
	– Practices are inconsistent, and transparency in the organization could be improved.
	– Organization-wide shared knowledge about ongoing and planned research projects is lacking.
– Hopefully, approved funding applications will be analyzed for benchmarking purposes.	

From the analysis, it is evident that the research project life cycle management service was being conducted in a largely ad hoc and fragmented manner. Each research group or individual researcher handled leads, ideation, and preparation independently, resulting in inconsistent practices and the absence of unified processes. Notably, a systematic approach to tracking or maintaining project leads was lacking, and promising ideas could stall due to ambiguous ownership. Common guidelines or tools for preparing funding proposals were lacking, which translated to researchers often having to start from scratch with each research project; for example, writing proposal documents without a standard template and navigating financial planning challenges on their own. Research project implementation and documentation practices also varied widely, and there was little organization-wide transparency or knowledge sharing about projects in the pipeline. These issues highlighted several areas for improvement, such as establishing clear process guidelines, improving the handling of leads and research ideas, providing better support for financial and partner-related aspects, and standardizing documentation and project management practices.

B. Ideal Research Project Life Cycle Management Service

Based on the study findings, an ideal process framework for a research project life cycle management service was defined to address the shortcomings of the current situation

at the case organization. This intended ideal framework for the service was synthesized from the empirical data and is visualized as a process diagram in Fig. 2. This diagram illustrates the sequence of tasks, from the initial idea to the final funding decision and the execution of the research project. Key stages—including lead capture, a structured ideation and partner engagement phase, development of the application for funding, an internal review and submission step, and, finally, the transition to project execution upon a positive funding decision—are captured in Fig. 2. This ideal process framework defines clear roles and ownership, with a designated process owner overseeing the entire project development workflow, and each research project idea being assigned to an individual who is then responsible for advancing that idea through the pipeline. This ensures that no promising research idea is left without guidance and ownership, directly addressing the lack of ownership observed in the current situation.

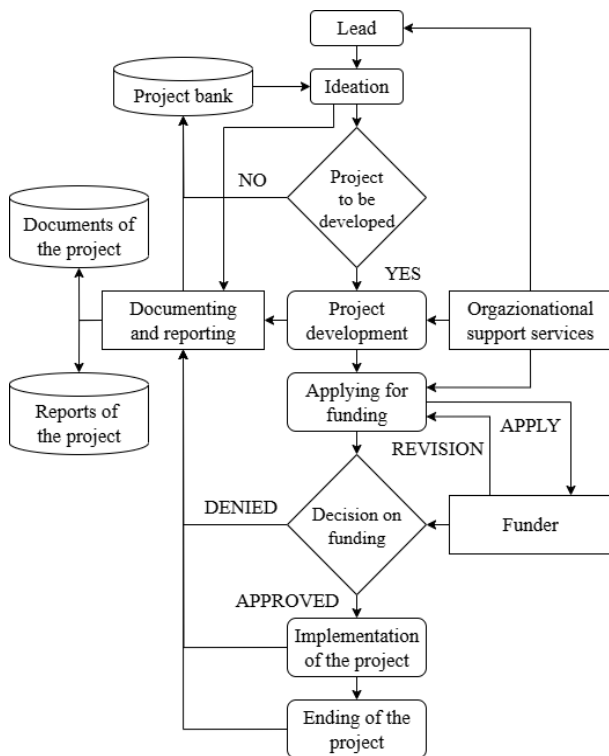


Fig. 2. Ideal project life cycle management workflow for the case organization.

Discussions of the diagram in Fig. 3 revealed that the research project life cycle management service had previously been produced in the case organization in a fragmented manner. The essential steps were taken but the approach varied across different research groups in the research unit. In an HEI environment, it is typical for individual researchers or research teams to independently handle most phases of the research project life cycle. There was no unified process or centralized support at the case organization; for example, some researchers sought partner organizations through personal networks, while others engaged the university’s industry account manager. Furthermore, grant proposal documents were often drafted from scratch for each new research project due to a lack of

standard templates. In addition, the case organization had no common digital tools dedicated specifically to project management, nor did it utilize a CRM system to manage information pertaining to collaborative efforts—instead, information was often stored in personal files or emails, making knowledge sharing difficult.

Modeling the workflow was the first step toward formalizing the research project life cycle management as a service and building the foundation for a structured service portfolio. The ideal process model is designed as a general framework that can be adapted to the requirements of different funders. It introduces a necessary structure without being overly rigid, such that specific funding call guidelines or templates can be accommodated at each project stage.

### C. Productization and Portfolio Structuring of the Research Project Life Cycle Management Service

According to Lahtinen *et al.* [11], an effective product portfolio or service portfolio should be defined both commercially and technically by implementing a clear structure for each offering. In the context of this study, this necessitated clarifying and documenting all the processes and subprocesses that constitute the service while productizing the research project life cycle management service for the case organization. This aligns with the findings of Härkönen *et al.* [7], who posit that defining a service requires mapping out its component processes and ensuring that they are well documented. In this case study, applying these principles led to the creation of a portfolio model of the case organization’s services, with the research project life cycle management service defined as a distinct service product, as shown in Fig. 3.

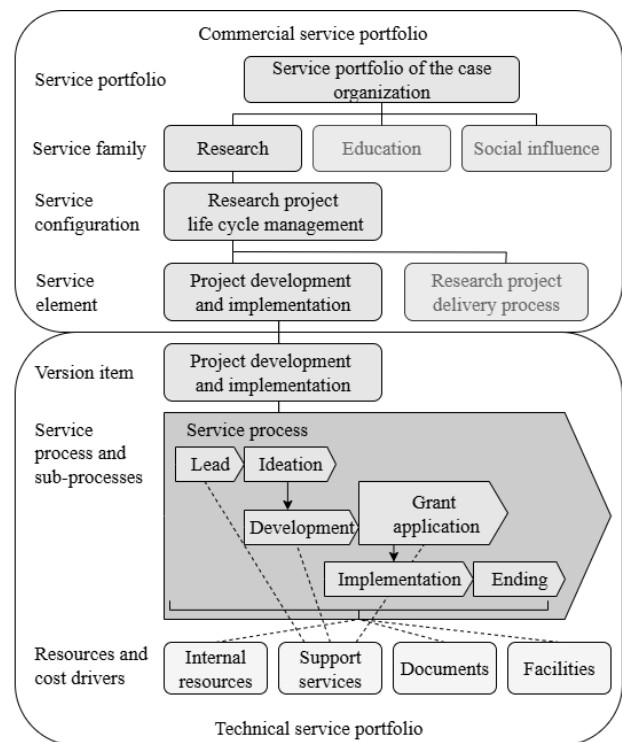


Fig. 3. The case organization’s service portfolio from a project management perspective.

The portfolio model distinguishes between the technical and commercial structures of the research project life cycle management service. The technical structure describes the know-how, steps, and resources associated with each subprocess involved in managing the research project life cycle. In contrast, the commercial structure frames the service in terms of what is offered to the customer. In the case of an HEI's research project life cycle management service, the concept of the customer can be nuanced, as the customer may be the funding body (i.e., the entity buying the project idea by funding it), the society or community that benefits from the research results, or an industry partner collaborating on that specific project—whose needs must be met for the partnership to be established. Concurrently, the internal researchers and staff who utilize the research project life cycle management process are the immediate beneficiaries of the service, effectively making them internal customers of this support service. However, in defining the commercial structure, the perspective of the external stakeholder (funder or partner) as the customer was emphasized because the value of the service is ultimately enabled by successful external collaboration and the acquisition of funding. From a commercial perspective, the research project life cycle management service was defined in the portfolio by specifying its position in a hierarchy of offerings. The University of Oulu directs its operations through three development paths: research, education, and societal impact. These can be considered top-level product families in the university's service portfolio. According to Lahtinen *et al.* [11], the offerings of a product family group are aimed at the same customer segment or goal. In this case study, the research product family includes all research-promoting services. Within this family, research project life cycle management was identified as a product configuration—a specific service offering that supports research activity. This configuration was further broken down into specific service processes, including a project ideation service and a grant application support service. This differentiation aligns with a Härkönen *et al.* [7], in which they posit that defining a productized service involves specifying the product family, product configurations, and core or support elements. Previously, the services offered by the case organization were not clearly outlined, and no formal portfolio structure existed. By situating the research project life cycle management service in the portfolio, the case organization makes the offering explicit—the model highlights the position of the service within the hierarchy and outlines its subcomponents, thereby addressing the previous ambiguity regarding what the service entails and how it is delivered.

#### *D. Discussion*

One of the important findings of this study is the how-to of conceptualizing the customer in the context of research project life cycle management services. The customer in an HEI context can be multifaceted. In the commercial structure, the primary customer of the research project life cycle management service was identified as a research partner or funding entity for which the project is

being prepared. Essentially, the university is offering a service—a well-prepared research project proposal and the opportunity for an external partner or funding body to collaborate with the university. Therefore, in this context, the customer experience refers to how smoothly and transparently external stakeholders experience the collaboration and research proposal development process. As Wirtz *et al.* [8] posit, customer experience is part of the core value of a service.

The emphasis on a partner-oriented process indicates that successful research project life cycle management is not achieved merely by improving an internal process. By productizing the research project development phase, the case organization formalized how it engages with its project partners and funding bodies, as it now treats these stakeholders as customers in a service transaction. This structured engagement can be viewed as a CRM practice in action. The literature suggests that a productized service portfolio facilitates easier communication and alignment with customers [6, 15], which this case study seems to confirm. With the research project life cycle management service clearly defined, it becomes easier to explain to external partners how the case organization will collaborate with them and what they can expect.

In addition, the improvements and structures implemented in this case study are reflective of many of the success factors highlighted in the CRM literature [4, 23]. For instance, the initiative to productize the service offered by the research unit of the Faculty of Technology, University of Oulu, received support from the unit's leadership, highlighting that managing relationships with funders and partners is important to the unit. The process changes infused a more customer-centric cultural outlook into how researchers view research project life cycle management—as a service rendered to an external party that should be kept satisfied. By productizing the research project life cycle management service, the case organization also strengthens its CRM capabilities. It now has clearer data and oversight regarding how it engages external collaborators in research projects, allowing for better management of these relationships.

The approach adopted in this case study is consistent with NPM principles in that it delivers customer-centric, efficiency-driven improvements in an HEI context. An informal practice was transformed into a formal service offering, increasing transparency and accountability with respect to how the university handles externally funded research projects. This aligns with NPM's call for the public sector to adopt private sector efficiency and customer service standards [2]. By clearly defining the service and measuring its performance, the HEI can demonstrate improved outcomes to its stakeholders and funders.

In summary, modeling and productizing the research project life cycle management service not only delivered an internal operational tool but also provided a mechanism for CRM and stakeholder engagement. A well-structured service enables the university to respond more predictably and professionally to the needs of partner organizations, thereby improving stakeholder satisfaction.

## V. CONCLUSION

Several key challenges in productizing the research project life cycle management service in an HEI were identified in this study (RQ1). First, conceptualizing this internal support function as a formal service product proved difficult, as the process is knowledge intensive and varies with different funding requirements, making standardization impractical. Second, the service caters to multiple stakeholders—internal researchers and external partners; consequently, defining the *customer* and balancing the diverse needs of all stakeholders is challenging. Finally, the case organization's research project life cycle management tasks were initially handled in a fragmented, ad hoc manner with no common process or tools, complicating efforts to formalize and improve the service.

An ideal process model was proposed to address this, one that presents the workflow in distinct stages, from initial research project lead through proposal development to project start, with specific responsibilities assigned to specific individuals or groups of individuals at each step (RQ2). This structured approach introduces practical improvements, such as implementing a lead management system, using standardized proposal templates, providing dedicated financial planning support, and assigning an owner for each project idea to ensure follow-through.

Adopting a product portfolio perspective for the research project life cycle management service could improve its delivery while also strengthening CRM (RQ3). Internally, formalizing the service as part of a defined portfolio can improve efficiency and consistency. Externally, clearly defining and communicating this service makes it easier for industry partners and funding bodies to recognize its value, leading to better stakeholder engagement. Productizing the service enables it to function as a CRM mechanism by ensuring consistent professional interactions with stakeholders during project development and fostering stronger long-term relationships.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

## AUTHOR CONTRIBUTIONS

S.L. led the research and prepared the final manuscript; L.M. and J.P. collected data through interviews, surveys, and workshops and drafted the initial versions of the manuscript; P.T. and H.H. served as primary supervisors and reviewers and coordinated the necessary resources; all authors had approved the final version of this manuscript.

## REFERENCES

- [1] Ministry of Education and Culture. (2017). *Higher Education and Research for the 2030s – Vision Roadmap*. Helsinki: Ministry of Education and Culture. [Online]. Available: [https://okm.fi/documents/1410845/12021888/Korkeakoulutus+ja+tutkimus+2030-luvulle+VISION+TIEKARTTA\\_V2.pdf](https://okm.fi/documents/1410845/12021888/Korkeakoulutus+ja+tutkimus+2030-luvulle+VISION+TIEKARTTA_V2.pdf)
- [2] M. Juntti, "Public service productization: A constructive approach on research, development and innovation process of University of Applied Sciences," Faculty of Technology, University of Oulu Graduate School, University of Oulu, 2022.
- [3] G. E. Rigo, et al., "CRM adoption in a higher education institution," *JISTEM – Journal of Information Systems and Technology Management*, vol. 13, no. 1, pp. 45–60, 2016.
- [4] T. Daradoumis, et al., "CRM applied to higher education: Developing an e-monitoring system to improve relationships in e-learning environments," *International Journal of Services Technology and Management*, vol. 14, no. 1, pp. 103–125, 2010.
- [5] F. Shalihati, et al., "Mapping customer relationship management research in higher education: Trends and future directions," *Administrative Sciences*, vol. 15, no. 2, p. 68, 2025.
- [6] A. Aapaoja, J. Kujala, and L. T. Pesonen, "Productization of university services," *International Journal of Synergy and Research*, vol. 1, no. 1, pp. 89–106, 2012.
- [7] J. Härkönen, A. Tolonen, and H. Haapasalo, "Service productisation: Systematising and defining an offering," *Journal of Service Management*, vol. 28, no. 5, pp. 936–971, 2017.
- [8] J. Wirtz, et al., "Service products and productization," *Journal of Business Research*, vol. 137, pp. 411–421, 2021.
- [9] E. Jaakkola, "Unraveling the practices of 'productization' in professional service firms," *Scandinavian Journal of Management*, vol. 27, no. 2, pp. 221–230, 2011.
- [10] A. Tolonen, J. Härkönen, and H. Haapasalo, "Product portfolio management: Governance for commercial and technical portfolios over life cycle," *Technology and Investment*, vol. 5, pp. 173–183, 2014.
- [11] N. Lahtinen, E. Mustonen, and J. Härkönen, "Commercial and technical productization for fact-based product portfolio management over lifecycle," *IEEE Transactions on Engineering Management*, vol. 68, no. 6, pp. 1826–1838, 2021.
- [12] J. Härkönen, A. Tolonen, and H. Haapasalo, "Modeling of construction products and services for effective productisation," *Management*, vol. 13, no. 4, pp. 335–353, 2018.
- [13] E. Jaakkola, M. Orava, and V. Varjonen, *Productizing Services for Competitive Advantage: Guide for Companies*, Helsinki: Tekes, 2009.
- [14] H. Simula, T. Lehtimäki, and J. Salo, "Re-thinking the product: From innovative technology to productized offering," in *Proc. 19th ISPIM Conference*, 2008.
- [15] J. Härkönen, "Exploring the benefits of service productisation: Support for business processes," *Business Process Management Journal*, vol. 27, no. 8, pp. 85–105, 2021.
- [16] M. Comerio, et al., "Service portfolio management: A repository-based framework," *Journal of Systems and Software*, vol. 104, pp. 112–125, 2015.
- [17] S. Kuula, H. Haapasalo, and A. Tolonen, "Cost-efficient co-creation of knowledge-intensive business services," *Service Business*, vol. 12, pp. 779–808, 2018.
- [18] E. Mustonen, et al., "Product portfolio management strategic targets and KPIs over life-cycle: A case study in telecommunications business," *Managing Global Transitions*, vol. 18, no. 1, pp. 5–23, 2020.
- [19] H. Riol and D. Thuillier, "Project management for academic research projects: Balancing structure and flexibility," *International Journal of Project Organisation and Management*, vol. 7, no. 3, pp. 251–269, 2015.
- [20] G. K. Wedekind and S. P. Philbin, "Research and grant management: The role of the Project Management Office (PMO) in a European research consortium context," *Journal of Research Administration*, vol. 49, no. 1, pp. 43–62, 2018.
- [21] R. Twohig, et al., "Features of research project management in European higher education institutes," *Perspectives: Policy and Practice in Higher Education*, vol. 27, no. 2, pp. 68–78, 2023.
- [22] M. A. P. Júnior, et al., "Improving research labs' performance through project management guidelines: A case study analysis," *International Journal of Productivity and Performance Management*, vol. 70, no. 3, pp. 704–721, 2020.
- [23] A. Octavia, et al., "Key factors of educational CRM success and institution performance: A SEM analysis," *Cogent Business & Management*, vol. 10, no. 1, 2023.
- [24] N. Evans and A. Miklosik, "Driving digital transformation: Addressing the barriers to engagement in university-industry collaboration," *IEEE Access*, vol. 11, pp. 60142–60152, 2023.
- [25] B. Khashab, et al., "Analyzing enterprise resources for developing CRM framework in higher education institutions," *Journal of Enterprise Information Management*, vol. 35, no. 6, pp. 1639–1657, 2022.

- [26] K. Sjöo and T. Hellström, "University-industry collaboration: A literature review and synthesis," *Industry and Higher Education*, vol. 33, no. 4, pp. 275–285, 2019.
- [27] M. Saunders, P. Lewis, and A. Thornhill, *Research Methods for Business Students*, 7th ed., Harlow: Pearson Education, 2016.
- [28] D. Magaldi and M. Berler, "Semi-structured interviews," in *Encyclopedia of Personality and Individual Differences*, Springer, 2020, pp. 4825–4830.
- [29] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, 2006.
- [30] G. Guest, K. M. MacQueen, and E. E. Namey, *Applied Thematic Analysis*, Thousand Oaks, CA: SAGE Publications, 2012.

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