ISSN 1846-6168 (Print), ISSN 1848-5588 (Online)
https://doi.org/10.31803/tg-20240806064110

Original scientific paper
Received: 2024-08-06, Accepted: 2025-01-20

Customer Relationship Management Processes and Practices in a Higher Education Institution: A Case Study

Samuel Lakkala*, Joonas Suutari, Pekka Tervonen, Harri Haapasalo

Abstract: This study examines the implementation and advancement of customer relationship management (CRM) systems in higher education institutions (HEIs) through a detailed case study. It aims to (1) understand CRM processes from an HEI perspective and (2) develop CRM processes and practices tailored to HEI needs. The results highlight the critical role of CRM in managing diverse stakeholder relationships amidst growing competition for students, partners and funding. Essential processes, such as partnership creation, university-industry collaboration and systematic activity logging, are emphasised for strategic CRM application. Key CRM practices identified include process mapping, standardised procedures and clear user roles. The study provides a framework for refining CRM strategies in HEIs, enhancing stakeholder engagement and operational efficiency. These findings offer HEIs valuable insights for optimising CRM systems and fostering improved CRM in a competitive educational landscape.

Keywords: CRM implementation; CRM processes; CRM systems; customer relationship management; higher education

1 INTRODUCTION

Customer relationship management (CRM) and CRM systems have traditionally been part of the toolbox of business life, but nowadays educational and research organisations are also and increasingly adopting CRM systems and customer-oriented methods of operation. The competition between universities for students, partners and funding has also boosted the need to develop and systematise CRM in the university world [1].

CRM is usually strongly associated with information systems as information systems help in collecting, storing and analysing customer data [2]. However, Payne and Frow [3] emphasise that CRM should always be seen broadly rather than just as a technology solution if a CRM system project is to be successful. In connection with the system's implementation, the necessary processes that fit the organisation's CRM goals must be defined [4].

CRM systems are extensively utilised in the business sector, supported by a substantial body of research focused on their application within this context. In contrast, research on CRM in HEIs is still in its nascent stages [5]. The majority of existing studies have viewed students as the primary customers for HEIs, as highlighted by [6-9]. Meanwhile, research addressing other significant stakeholder groups, such as alumni and the broader business and industrial community, remains relatively underdeveloped [10, 11]. This gap underscores the need for further studies on the diverse applications and effects of CRM systems in HEIs that go beyond the predominant student-centric perspective.

To address this research gap, the present work presents a case study focusing on the implementation of a CRM system at a Finnish public university. The goal of this investigation was to gain new insights into the role and application of CRM systems and their processes within an educational setting, moving away from the traditional focus on students. The study was guided by the following research questions:

RQ1: What is CRM and its processes from the perspective of an HEI?

RQ2: How are the CRM processes and practices of a HEI created in connection with the implementation of a CRM system?

To address these research questions, a qualitative research approach was employed, encompassing a literature review and a case study. The literature review that answers to the first research question aimed to establish a theoretical foundation and provide insights into CRM systems within HEIs and related processes. To find an answer to the second research question, a case study was conducted to investigate the implementation of a CRM system and development of processes within the case organisation.

2 LITERATURE REVIEW

Buttle and Malkian [2] define CRM as a core business strategy that integrates internal processes and functions with external networks to create and deliver value to targeted customers profitably. This strategy relies on high-quality customer data and is facilitated by information technology. The effectiveness of a CRM strategy depends on balancing three key resources: people, technology, and processes [3]. Efficient resource utilisation in CRM leads to high customer satisfaction, retention, and loyalty [12]. While CRM systems are widely used in the business sector and extensively studied, there is limited research on their application within HEIs [5].

2.1 Customer Relationship Management in Higher Education Institutions

The implementation of CRM systems is becoming strategically necessary for HEIs [5]. HEIs themselves are no different from other organisations insofar as they are for-profit structures that produce education and research for money [2]. Large HEIs, such as universities and universities of applied sciences, have numerous stakeholders, including students, academic and non-academic personnel, collaborating companies and researchers, various authorities and other public administration organisations and universities [5, 13, 14].

CRM is typically closely linked with information systems, which aid in the collection, storage and analysis of customer data [2]. These systems gather information about both internal and external customers and consolidate it into a single database for processing. Initially developed for business use, CRM systems have evolved to manage the complex relationships within HEIs. By integrating customer information from various sources, they have become essential for decision-making and managing diverse stakeholder relationships [2, 15].

Rirchards and Jones [16] outline several core benefits of CRM systems for organisations: identifying profitable customers, integrating offerings across channels, improving sales efficiency and effectiveness, enabling personalised marketing, customising products and services, enhancing the efficiency and effectiveness of customer service, and optimising pricing strategies. In the context of higher education, CRM systems not only support the monitoring of students' academic progress and the recruitment of new students but also encourage the development of donor, industry and alumni relations. The systematic management of these relationships, facilitated by CRM's data consolidation, communication tools and event management capabilities, empowers HEIs in their daily operations and strategic initiatives, such as funding applications and multi-channel communication [1, 10, 14].

Despite their clear benefits, the implementation of CRM systems in HEIs faces significant challenges. A major one is possible resistance from academic staff toward adopting business-oriented systems and methodologies, which underscores the internal cultural barriers to CRM projects in academic settings [6]. This resistance is heightened by the increasing expectations for academics to participate in external research, contract research, consultancy and executive education [11]. Additional challenges, such as the lack of a unified CRM strategy, inadequate change management and insufficient understanding of existing processes, further complicate CRM system implementation. Adapting commercial CRM systems, originally developed for business environments, to address the specific needs of HEIs also presents significant difficulties [1].

2.2 CRM Processes in HEIs

The foundation of effective CRM implementation lies in well-defined processes and practices. It encompasses the entirety of how customer information is gathered, managed and utilised to foster relationships. The establishment of clear processes ensures consistency and efficiency across the organisation, aligning with the strategic goals of CRM implementation [3, 12, 14, 17].

The CRM implementation model created by [12], shown in Fig. 1, combines the three most central dimensions of CRM (people, processes and technology) into an organisation-wide, customer-oriented, technologically integrated, multidisciplinary entity. Thus, the success of the implementation depends on the creation of a suitable combination of the three dimensions [12].

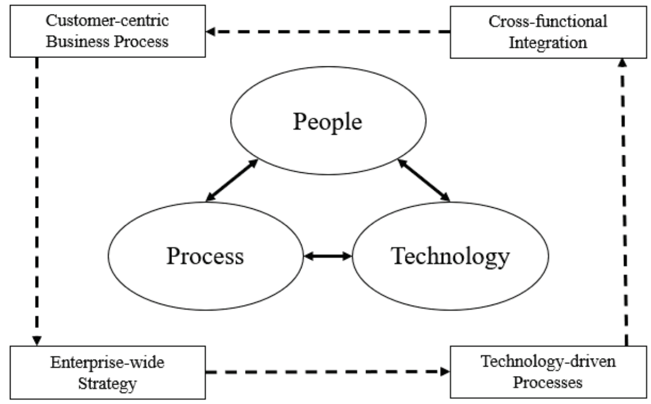

Figure 1 CRM implementation model [12].

Reinartz et al. [18] characterise CRM as fundamentally process-based, highlighting the importance of systematically and proactively managing customer relationships from their initiation to conclusion. These relationships evolve through various stages, each requiring specific management strategies. Effective CRM coordination relies on well-defined processes to meet organisational needs. Developing CRM processes necessitates a customer-oriented approach that begins with identifying the organisation's needs and translating them into CRM requirements. This involves automating decision-making, redesigning processes, setting precise and measurable implementation goals, enhancing stakeholders' technical capabilities and fostering innovation [3, 12, 14, 17].

Organisations must define CRM processes aligned with their CRM goals and allocate sufficient resources to support them. The suitability of these processes is influenced by the organisational structure and culture. It is crucial to ensure that processes function as intended, supported by the necessary technology, which is typically a CRM system designed around these processes [4]. During CRM system implementation, it is both feasible and cost-effective to develop processes and tools simultaneously, ensuring that detailed process definitions serve as support materials, guaranteeing processes are well-defined and supported by the system [19]. Additionally, the role of employees is fundamental to the success of CRM implementation, as they are the end-users of the system. Management must establish clear guidelines for using the CRM system and implementing new processes while ensuring compliance with these guidelines [20].

In the context of CRM in HEIs, university-industry collaboration (UIC) refers to the interaction between universities and industries, aiming to foster the exchange of information and technology. The customer acquisition process in HEIs mirrors the UIC creation process, which initiates collaboration between the university and industry. The complexity and formality of the relationship dictate the number of steps in the UIC creation process [21] (Tab. 1). Key issues in planning customer acquisition include identifying target customers, approaches to engagement and the offerings provided [2].

Table 1 UIC creation process (modified from [21])

Step	Content
1. Identifying the partnership	- Defining the purpose for partnership - Gathering general knowledge about potential partners - Examining past relationships
2. Contacting	- Contacting the identified potential partners
3. Partner evaluation and selection	- Objectively assessing the strategic interest of potential partners - Analysing the alleged and actual capabilities of potential partners - Defining and organising the mix of suitable partners - Selecting partners.
4. Partnership negotiations	- Determining and agreeing on the goal or mission/vision of the partnership - Defining specific common goals - Defining the organisational structure of the partnership - Defining the management and control of the partnership and the division of responsibilities - Approving the plan - Identifying success metrics - Defining intermediate and final results
5. Signing the contract	- Preparating and signing a cooperation or intellectual property agreement

2.3 Synthesis of the Literature Review

CRM can be characterised a core business strategy integrating internal processes and external networks to deliver value relying on high-quality data and information technology. Its effectiveness hinges on balancing people, technology and processes. Efficient CRM leads to high customer satisfaction, retention and loyalty. Although extensively studied in the business sector, CRM application in HEIs is less explored. HEIs aim to produce education and research profitably, managing numerous stakeholders, including students, staff, companies, and public organisations.

CRM systems collect, store, and analyse customer data, consolidating it for processing. Initially for business use, these systems now manage complex relationships within HEIs, supporting decision-making and stakeholder management.

CRM benefits include identifying profitable customers, integrating offerings, improving sales efficiency, enabling personalised marketing, customising services, enhancing customer service, and optimising pricing. In HEIs, CRM systems help monitor student progress, recruit students, and develop donor and alumni relations, empowering them through data consolidation and improved communication.

Effective CRM implementation relies on well-defined processes ensuring consistency and efficiency aligned with the organisation's strategic goals. The CRM model integrates people, processes and technology, where processes transform resources into effective capabilities. Developing CRM processes requires a customer-oriented approach, automating decisions, redesigning processes, setting measurable goals and enhancing technical capabilities. HEIs must define processes aligned with CRM goals, supported by sufficient resources, considering organisational structure and the academic culture. Detailed process definitions aid implementation, ensuring the processes are well-defined and supported by the system.

With respect to RQ1, in the context of HEIs, CRM systems manage complex relationships with multiple stakeholders, as noted. These systems collect, store and analyse customer data, supporting decision-making and stakeholder management. CRM processes in HEIs involve systematically identifying and engaging stakeholders and facilitating and tracking communications. Additionally, they use data-driven insights to evaluate partnerships and make informed decisions while ensuring continuous engagement with stakeholders.

3 MATERIALS AND METHODS

3.1 Research Process and Methods

This study began with a comprehensive literature review to establish a theoretical foundation and understand the significance of CRM systems in HEIs, as well as the processes of CRM. Building on this foundation, it employed a qualitative approach – specifically, a descriptive case study – to thoroughly investigate the implementation of a CRM system within the faculty of a Finnish multidisciplinary public university. The study originated from an ongoing CRM implementation project within one of the university's faculties. This methodological choice, guided by [22] enabled an in-depth examination of CRM practices within the case organisation, providing the rich and detailed insights characteristic of qualitative research [23]. The research process is shown in Fig. 2.

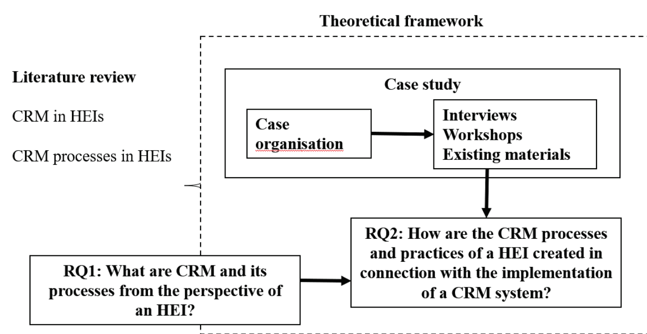

Figure 2 Research process

The research material was collected by interviewing 13 heads of the faculty's research units, observing implementation planning meetings and holding five implementation-related workshops (Tab. 2). The interviews were conducted as part of the project aiming to assess the current state of CRM within the faculty, identify the requirements for the CRM system and determine the critical success factors for its implementation.

Based on the interviews, it was concluded that the initial steps of the project should focus on establishing the primary CRM processes, along with the practices and roles necessary for their execution. Comments and opinions about the current state of CRM were widely heard from the employees of the pilot project unit during the meetings. The employees were also able to influence the introduction of the system through open events and communication.

Table 2 Sources of research material

Sources of data
Interviews (13), workshops (5), existing materials (university documents and websites) and practical observations (project meetings and trainings)

3.2 Case Organisation

The case organisation was chosen for this research based on several compelling factors. Firstly, the faculty represents a complex entity within a larger university framework, employing 414 staff members, including 33 professors, and serving over 2,300 students across various degree programmes. This environment provides a rich context for examining the intricacies of CRM implementation in higher education.

However, the main reason for selecting this faculty was its active participation in collaborative research projects with a diverse array of external stakeholders, such as companies, civil organisations and governmental bodies. These collaborations, often facilitated by CRM systems, are vital for the faculty's research productivity and its funding, half of which comes from external sources. The faculty's broad network and dependence on external funding highlight the importance of CRM in managing these relationships.

Also, the faculty had recently initiated a CRM implementation project, adding a timely and relevant aspect to the study. Investigating this ongoing project allowed for real-time insights into the challenges and successes of CRM adoption in a higher education setting.

Finally, the involvement of research unit heads in the study was crucial for gaining a comprehensive understanding of CRM's impact at different organisational levels. These leaders had firsthand knowledge of their units' most significant partnerships and projects, providing invaluable insights into the most critical and necessary processes for the organisation.

Fig. 3 illustrates the case organisation's stakeholders and highlights the central role of the CRM system in managing relationships and processes within this ecosystem. At the middle of the organisation are its core stakeholders including students and personnel, who drive the university's daily operations. Surrounding the core, the figure showcases key external stakeholders such as network of industry partners, other research institutions, alumni, donors, funding bodies and event attendees. These groups benefit directly from the CRM system, which facilitates communication and collaboration.

Beyond the immediate stakeholders, the figure expands to include the university's broader external ecosystem, comprising for example, service providers, international partners and governmental bodies. While these stakeholders may not interact directly with the CRM system, they are influenced by the outcomes it enables, such as improved research impact, public outreach and institutional reputation.

The CRM system is portrayed as an overlapping layer within the figure, symbolising its integrative role. It connects internal and external stakeholders, ensuring transparency, consistency, and efficiency in engagement and collaboration.

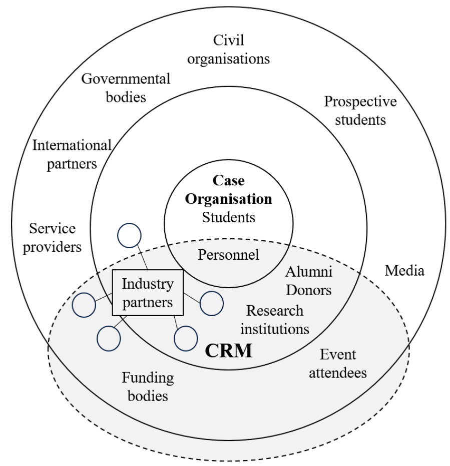

Figure 3 Case organisation's stakeholders

4 RESULTS

Through the interviews, meetings and workshops of the research unit, CRM at the case organisation was defined as 'procedures that develop open, unified and transparent customer and stakeholder activities'. CRM there was based on pre-agreed rules and internal cooperation, and its goal was a positive and professional customer experience in all the university's customer channels. The need for more effective CRM was brought up by emphasising that the CRM system offered a competitive advantage.

It was thought that incorporating the CRM system into the university's existing project management and communication processes would significantly enhance coordination and operational efficiency. Interviews revealed a strong anticipation that this integration would lead to a unified approach in managing projects and increase communication efficacy both internally and with external stakeholders. Such streamlined processes are significantly supported by CRM technologies, such as stakeholder registers and communication tools, optimising interactions and the management of stakeholder information [1].

Based on the interviews and literature, the key CRM processes identified as essential for the initial development of the system were the creation of a partnership, a cooperation process and the logging of activities. The processes described in this section were developed using structured process mapping techniques which enabled the detailed visualisation of workflows, making it easier to identify critical steps, define responsibilities, and ensure alignment with the university's CRM objectives. Process mapping helped visualising the identified processes into manageable components, facilitating clarity and consistency. CRM practices were created to support the processes, which include rules, instructions for operation and user roles including job descriptions.

In the process description terminology, 'CRM user' refers to a person in the research unit who uses the CRM system. A CRM user can be, for example, a professor, researcher, teacher or research assistant, as long as they have a user license. 'CRM system' refers to the CRM system to be implemented. 'Partner' means a cooperating organisation, that is, a company, financier or other organisation, and 'partnership' is a cooperative relationship. 'Company data' includes all information about the company or organisation in the CRM system, including historical data from previous cooperation and company contacts. 'Contacts' are the company's personnel with whom the contact takes place.

4.1 Partnership Creation Process

The partnership creation process is pivotal for establishing formal collaborative agreements between the case organisation and new partners. Utilising a CRM system enhances the efficiency and effectiveness of this process. This section details each stage of the partnership creation process, highlighting the significance of each step and the role of the CRM system in facilitating these interactions. The partnership creation process followed the UIC process as introduced by [21]. Fig. 4 illustrates the process flow.

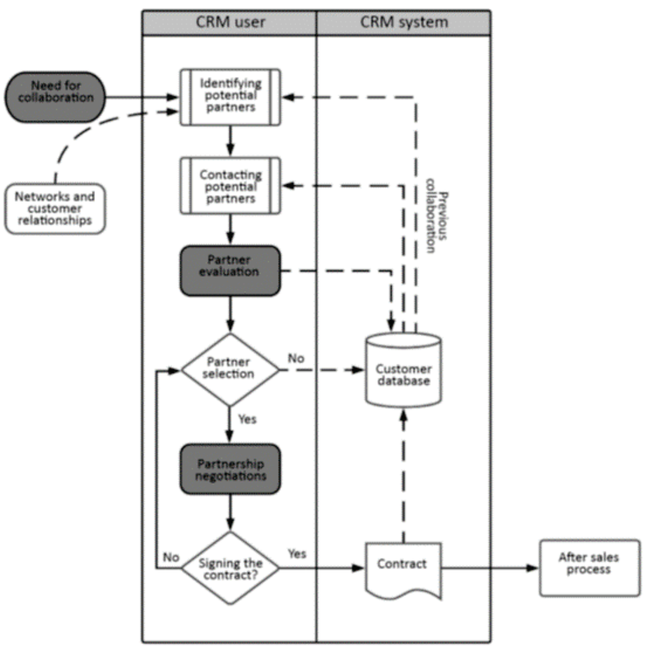

Figure 4 Partnership creation process

Identifying the Need for Collaboration. The initiation of a partnership begins with recognising the need for collaboration. This need can arise from various factors, such as upcoming projects, funding requirements, academic course needs or potential industry collaborations.

Identifying Potential Partners. Once the need for collaboration is established, the next step involves identifying potential partners. This stage includes researching and compiling a list of organisations that align with the goals and requirements of the research unit. The CRM system plays a significant role here by providing a database of existing networks and customer relationships, which can be leveraged to identify suitable partners. Utilising historical data stored in the CRM system ensures that potential partners are evaluated based on previous interactions and collaborations [15].

Contacting Potential Partners. After identifying potential partners, the user initiates contact. This involves reaching out to potential partners through various communication channels, such as emails, phone calls or face-to-face meetings. The CRM system aids by automating communication processes, tracking interactions and scheduling follow-ups [1]. Effective communication is vital to convey the partnership's value proposition and gauge the interest of potential partners.

Partner Evaluation. The evaluation stage is critical for assessing the suitability of potential partners. This includes an assessment of their strategic alignment, capabilities and potential for collaboration. The CRM system facilitates this by providing comprehensive data analysis tools to evaluate the strategic interest and capabilities of potential partners. Evaluating partners ensures that the chosen partners can contribute effectively to the collaborative efforts, thereby enhancing the partnership's overall value [2].

Partner Selection. Based on the evaluation, the most suitable partners are selected. This decision-making process involves comparing the strengths and weaknesses of potential partners and determining which partner best aligns with the research unit's goals. The CRM system supports this stage by providing detailed reports and insights from the evaluation phase, aiding in informed decision-making [2, 17].

Partnership Negotiations. Once a partner is selected, the next step involves negotiating the terms of the partnership. This includes discussing and agreeing the goals, responsibilities and expectations of both parties. The CRM system helps manage these negotiations by maintaining records of the communications and agreements, ensuring that all aspects of the partnership are documented and accessible. Effective negotiations are crucial to the establishment of a clear understanding and agreement between the partners, setting the foundation for a successful collaboration [19].

Signing the Contract. The final stage of the partnership creation process comprises the formalisation of the agreement through a contract. The contract outlines the terms and conditions of the partnership, including roles, responsibilities, deliverables and timelines. The CRM system ensures that the contract details are integrated into the customer database, providing a reference for future interactions and ensuring that all contractual obligations are tracked and met [19]. Formalising the partnership through a contract is essential for legal and operational clarity, ensuring that both parties are committed to agreed-upon terms.

Each stage of the partnership creation process is integral to building an effective collaboration. By systematically identifying, evaluating and selecting partners, organisations can ensure that their collaborations are strategically aligned and mutually beneficial. The CRM system enhances this process by providing a structured approach to managing interactions, maintaining comprehensive records and facilitating data-driven decision-making. This structured approach not only improves the efficiency of the partnership creation process but also increases the likelihood of successful and sustainable collaborations.

4.2 Cooperation Process

The cooperation process with existing partners is integral to sustaining and enhancing long-term relationships; it closely mirrors the partnership creation process but is generally more streamlined. According to the literature, maintaining and enhancing relationships with existing partners is often more cost-effective than acquiring new ones [2, 24]. Fig. 5 illustrates this process.

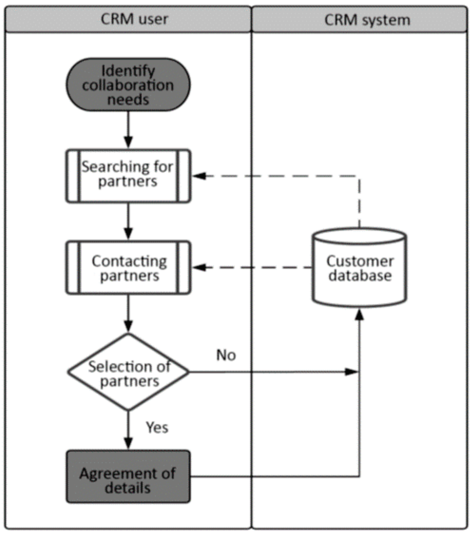

Figure 5 Cooperation process.

By systematically identifying collaboration needs, searching for partners, contacting, evaluating and finalising agreements, organisations can ensure that their cooperative efforts are strategically aligned and mutually beneficial. The CRM system enhances this process by providing a structured approach to managing interactions, maintaining comprehensive records and facilitating data-driven decision-making [4, 18]. Maintaining effective cooperation with existing partners fosters a stable and reliable network of collaborators, contributing to the organisation's strategic goals and enhancing overall performance. This structured approach not only improves the efficiency of the cooperation process but also increases the likelihood of successful and sustainable collaborations.

4.3 Logging of Activities

One of the most critical objectives in implementing a CRM system is the comprehensive recording of all activities with current and potential future partners. Proper documentation of the activities enhances transparency, accountability and the efficient management of relationships. The wide-ranging activities include phone calls, emails, meetings, visits, guest lectures, projects and collaborative work with students [5, 14]. This section elaborates on the activity logging process, its stages and the role of the CRM system in ensuring accurate and effective documentation. Fig. 6 illustrates the activity logging process.

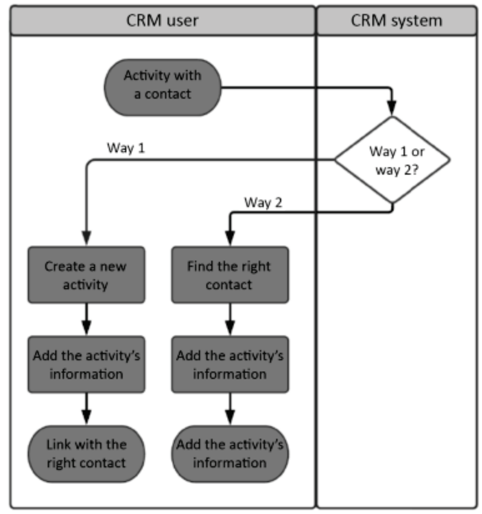

Figure 6 Activity logging process.

The process begins when a CRM user initiates an activity with a contact, such as a scheduled meeting, phone call or project update. The prompt recognition and recording of these activities ensure that all interactions are documented, maintaining a comprehensive history of engagements with partners [15, 19].

At the second stage, the CRM user determines the method of logging the activity, either directly from the start screen or through the specific partner or contact entry. This decision depends on the user's workflow preferences and the nature of the interaction. Both methods provide flexibility and convenience in documenting activities, catering to different user needs and preferences.

When logging directly from the start screen, the user begins by creating a new activity entry in the CRM system, selecting the type of activity and entering preliminary details. They then add specific details, including the date, time, participants and a brief description of the interaction. Detailed documentation at this stage is crucial for future reference and follow-up actions. Finally, the user links the activity to the appropriate contact within the system, ensuring accurate and comprehensive tracking of all interactions [4].

Alternatively, the user may log the activity via the partner or contact entry by first searching for the relevant contact within the CRM system. After navigating to the contact's profile, the user creates a new activity entry linked directly to this contact, ensuring immediate association with the correct partner. As with the direct logging method, the user then enters detailed information about the activity to ensure thorough documentation.

Logging activities accurately and comprehensively is vital for several reasons. First, detailed activity records provide a complete history of all interactions with partners, facilitating better relationship management and informed decision-making [2, 19]. Second, recording activities ensures accountability by documenting who interacted with whom, when and about what, contributing to internal knowledge and evaluation processes. Third, comprehensive activity logs enable CRM users to efficiently follow up on previous interactions, ensuring continuity and coherence in communications. Finally, the aggregated data from logged activities can be analysed to derive insights into engagement patterns, partner responsiveness and areas for improvement, supporting strategic planning and operational optimisation [2, 15].

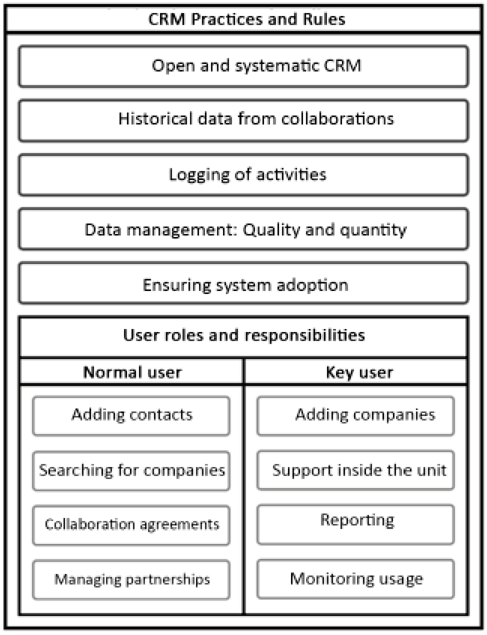

Figure 7 CRM practices and rules in the case organisation.

The practices and rules established in this study aim to ensure the successful implementation of CRM systems in HEIs. By promoting open and systematic CRM usage, these practices make historical information and cooperative activities visible to all personnel within the system. The summary of common practices, rules and user roles in Fig. 7 encapsulates the results and conclusions.

4.4 Practical Implications

The implementation of CRM processes within an HEI is supported by consistent CRM practices and rules. These practices ensure systematic use of the CRM system across the research unit, establishing a framework for effective CRM. This framework includes CRM rules, general instructions for CRM and clear definitions of employee roles and responsibilities.

The CRM practices outlined in this study are crucial for several reasons. Firstly, they help mitigate implementation risks by ensuring data protection and the accuracy of the stakeholder register, even post-implementation. Also, common rules necessitate compliance at the individual level within the research unit, promoting uniformity and accountability. Monitoring user activities, meanwhile – particularly when editing data – ensures adherence to these rules, thereby maintaining data integrity and reliability. Although the practices developed are not exhaustive, they have provided a robust foundation for initial CRM usage in the case organisation.

A key aspect of implementing CRM rules is the systematic recording of all activities in the CRM system. Activities involving external stakeholders should be logged to facilitate tactical and strategic development. Transparency in CRM is a central theme as it enhances cooperation between units, simplifies reporting and promotes multidisciplinary research opportunities. Transparency also aids the formation of larger project groups and collaborations as well as providing staff with a clear understanding of partner interactions.

Performance metrics would further strengthen these practices and processes by enabling a measurable framework for CRM evaluation. During the initial stages of CRM implementation, the focus should be on metrics related to data quality and system usage. For example, organising partners by areas of expertise and maintaining accurate, comprehensive contact information ensures high data quality. Likewise, tracking the number of active users, the availability of support resources, and user feedback offers insights into the adoption of the system and identifies areas requiring improvement. Logging all interactions not only ensures consistency but also provides a unified view of partnerships, avoiding duplications and improving stakeholder experiences. Although financial performance can be more challenging to measure in higher education context, growth in external funding or the establishment of new cooperation agreements can serve as a performance metric.

The ongoing CRM implementation project in the case organisation is planned to be expanded to other faculties in the university. The process descriptions and practices created because of the work outlined here may not be directly suitable for use by other research units, but they might be used as help when describing their own processes and practices. In the CRM implementation performed by other units, the experiences and results obtained from the case organisation of the pilot project will certainly serve at least in a guiding form.

One topic of further research could be the development of CRM in a more strategic direction and the introduction of new functions. The implementation of the pilot project focused on the basic features of the selected CRM system as planned, but the system also offers many other CRM and sales tools. Key account management, project portfolio management, lead generation and sales pipeline and marketing systematisation are examples of possible development directions.

5 CONCLUSION

This article has reported on the implementation of CRM in an HEI and related processes and practices. Bringing a tool from the business world to universities arouses discussion, and its introduction requires effective change management to establish its use. The strategic importance of CRM is emphasised as competition between universities for students, researchers and funding increases.

The first goal of the study was to define CRM and its processes from the perspective of an HEI. CRM means more than just an information system, and the implementation of a CRM system must integrate the aspects of process, technology, people and culture. The special features of an HEI's CRM are strong autonomy, numerous external stakeholders and the coordination of the universities' several tasks prescribed by law. Here, following the initiation of cooperation between the university and industry, the customer acquisition process of an HEI has been defined from the CRM processes.

The second goal was to create CRM processes and practices related to the implementation of a CRM system suitable for the research unit's operations. The processes focused on creating a new customer relationship and business cooperation, and practices for implementing CRM were created to support the processes. The most important result is an open, up-to-date and systematic recording of cooperation using the system.

6 REFERENCES

[1] Badawood, A. (2016). Critical success factors for implementing customer relation management (CRM) system within university context concepts and literature review the Gulf Region Perspective, *International Journal of Computer Science and Technology*, *7*(1), 125-130.

[2] Buttle, F., & Malkian. S. (2019). *Customer Relationship Management: Concepts and Technologies* (4th ed.). Elsevier. https://doi.org/10.4324/9781351016551

[3] Payne, A., & Frow, P. (2005). A strategic framework for customer relationship management. *Journal of Marketing*, *69*, 167-176. https://doi.org/10.1509/jmkg.2005.69.4.167

[4] Keramati, A., Mehrabi, H., & Mojir, N. (2010). A process-oriented perspective on customer relationship management and organizational performance: An empirical investigation, *Industrial Marketing Management*, *39*(7), 1170-1185. https://doi.org/10.1016/j.indmarman.2010.02.001

[5] Khashab, B., Gulliver, S., & Ayoubi, R. (2020). A framework for customer relationship management strategy orientation support in higher education institutions, *Journal of Strategic Marketing*, *28*(3), 246-265. https://doi.org/10.1080/0965254X.2018.1522363

[6] Daradoumis, T., Rodríguez-Ardura, I., Faulin, J., Juan, A., Xhafa, F., & Martínez-López, F. (2010). CRM applied to higher education: developing an e-monitoring system to improve relationships in e-learning environments, *International Journal of Services Technology and Management*, *14*(1), 103-125. https://doi.org/10.1504/IJSTM.2010.032887

[7] Guilbault, M. (2016). Students as customers in higher education: reframing the debate. *Journal of Marketing for Higher Education, 26*(2), 132-142. https://doi.org/10.1080/08841241.2016.1245234

[8] Wali, A., & Wright, L. (2016). Customer relationship management and service quality: Influences in higher education. *Journal of Customer Behaviour, 15*(1). 67-79. https://doi.org/10.1362/147539216X14594362873532

[9] Octavia, A., Jovanka, D. R., Alqahtani, T. M., Wijaya T. T., & Habibi. A. (2023). Key factors of educational CRM success and institution performance: A SEM analysis, *Cogent Business & Management*, *10*(1). https://doi.org/10.1080/23311975.2023.2196786

[10] Suomi, K., Kuoppakangas, P., & Stenvall, J. (2019). Revisiting "the shotgun wedding of industry and academia"—empirical evidence from Finland. *International Review on Public and Nonprofit Marketing*, *16*, 81-102. https://doi.org/10.1007/s12208-019-00220-8

[11] Evans, N., & A. Miklosik. A. (2023). Driving digital transformation: Addressing the barriers to engagement in university-industry collaboration. *IEEE Access*, *11*, 60142-60152. https://doi.org/10.1109/ACCESS.2023.3281791

[12] Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM). *Business Process Management Journal*, *9*(5), 672-688. https://doi.org/10.1108/14637150310496758

[13] Chinnappa, T. B., & Karunakaran, N. (2021). Customer relationship management and higher education in India. *Journal of Management Research and Analysis*, *8*(4), 180-188. https://doi.org/10.18231/j.jmra.2021.035

[14] Rigo, G., Pedron, C. D., Caldeira, M., & Araújo, C. C. S. (2016). CRM adoption in a higher education institution. *TECSI Information Systems and Technology Management*. University of Sao Paulo. https://doi.org/10.4301/S1807-17752016000100003

[15] Laudon, K., & Laudon, J. (2012). *Management Information Systems – Managing the Digital Firm*. (12th Ed.). Pearson Education Inc.

[16] Richards, K., & Jones, E. (2008). Customer relationship management: Finding value drivers. *Industrial Marketing Management*, *37*(2), 120-130. https://doi.org/10.1016/j.indmarman.2006.08.005

[17] Mendoza, L., Marius, A., Pérez, M., & Grimán, A. (2007). Critical success factors for a customer relationship management strategy. *Information and Software Technology*, *49*(8), 913-945. https://doi.org/10.1016/j.infsof.2006.10.003

[18] Reinartz, W., Krafft, M., & Hoyer, W. (2004). The customer relationship management process: Its measurement and impact on performance, *Journal of Marketing Research*, *41*(3), 293-305. https://doi.org/10.1509/jmkr.41.3.293.35991

[19] Oksanen, T. (2010). *CRM ja muutoksen tuska – Asiakkuudet haltuun*. Talentum Media Oy. Helsinki.

[20] Meyliana, Hidayanto, A. N., & Budiardjo, E. K. (2016). The critical success factors for customer relationship management implementation: a systematic literature review. *International Journal of Business Information Systems*, *23*(2), 131-174. https://doi.org/10.1504/IJBIS.2016.078904

[21] Ankrah, S., & Al-Tabbaa, O. (2015). Universities–industry collaboration: A systematic review, *Scandinavian Journal of Management*, 31(3), 387-408. https://doi.org/10.1016/j.scaman.2015.02.003

[22] Yin, R. K. (2014). *Case Study Research Design and Methods*. (5th ed.). Sage.

[23] Bryman, A., & Bell, E. (2011). *Business Research Methods*. (3rd ed.). Oxford University Press. Oxford

[24] Nguyen, B., & Mutum, D.S. (2012). A review of customer relationship management: successes, advances, pitfalls and futures, *Business Process Management Journal*, *18*(3), 400-419. https://doi.org/10.1108/14637151211232614

Authors' contacts:

Samuel Lakkala, M.Sc. (Tech)
(Corresponding author)
Department of Industrial Engineering and Management, University of Oulu,
PO Box 4610, FI-90014 Oulu, Finland
+358 40 526 1564, samuel.lakkala@oulu.fi

Joonas Suutari, M.Sc. (Tech)
joonas.suutari@live.fi

Dr Pekka Tervonen, Research director
Department of Industrial Engineering and Management, University of Oulu,
PO Box 4610, FI-90014 Oulu, Finland
pekka.tervonen@oulu.fi

Dr Harri Haapasalo, Professor
Department of Industrial Engineering and Management, University of Oulu,
PO Box 4610, FI-90014 Oulu, Finland
harri.haapasalo@oulu.fi