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на тему: Analysis and development of project proposition on CRM integration for
UCU student recruitment department

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1 EXECUTIVE SUMMARY

Higher educational institutions require significant transformations nowadays. The demand for changes appeared far before COVID-19 time, but it's COVID-19 reality that forced HighEd to make a huge step forward in terms of technology adoption. The necessity to move the whole student journey from enrollment to graduation and relationships with alumni to online or hybrid mode became a challenge for all higher educational institutions.

The goal of this work is to provide consultation on possible scenarios for bringing technology to the student recruitment process in UCU (Ukrainian Catholic University). Does university indeed require process automation? How does this initiative contribute to the organisation strategy? What would be possible scenarios and which of them should be considered for execution?

Scope of this project consists of: analysis of current status of HighEd and trends in its evolution within next 5-10 years through literature review and consultations with domain experts; organisational analysis of UCU including business model, UCU IT strategy, UCU strategic goals for 2025 and technology impact on their achievement; analysis of current status of the UCU student recruitment process, toolset used; designing scenarios for automation of the student recruitment process through integration of CRM software; analysis of opportunities to scale the technology down the whole student journey till development of relationships with the alumni community through integration of Cross-Life-Cycle CRM; providing recommendations on integration roadmap for CRM software. CRM integration itself is **out of scope of this project.**

The project is influenced by most of the modules from MS in Technology Program. The major contribution comes from the following modules: IT Strategy by Alex Shegda, Organisational Development by Andriy Rozhdestvesnky, Management Decision Making Toolbox by Mychailo Wynnyckyj, Digital Disruption by Alejandro Danylyszyn, Financial Decision Making by Yuriy Zayarnyy, Design Thinking by Ihor Didok.

The project key stakeholders are Lead of UCU Student Recruitment Department, Head of Admission Office, Pro-Rector for Academic Affairs and Research and Head of IT in UCU. The author of the thesis acts as a management consultant.

The project results are structured as follows. **Section 2** gives a detailed overview of current trends in HighEd, role of technology in those trends, definition of student cross-life-cycle CRM and specifics of management consulting projects. In **Section 3** comprehensive UCU organisational analysis is conducted, the value of Student Cross-life-Cycle CRM integration is mapped to the current university strategy. **Section 4** describes current processes in the student recruitment department, the team's expectations from the CRM solution, their pains and first attempts in bringing technology to the first touchpoint in Student Journey. In **Section 5** we describe methodology of CRM evaluations, synthesized scenarios, evaluation of scenarios, recommendations on next steps.

Detailed conclusions are given at the end of each section and their brief summary can be found in **Section 6**.

2 INTRODUCTION

2.1 HighEd in 2021

Higher Educational Institutions within the next 5-7 years and nowadays are two completely different stories. Many factors piled up to spark off HighEd disruption.

Formal 4- or 5-year “one size fits all” education is no longer acceptable by a generation of students who got used to personalised attitudes from software applications and businesses from their very childhood. The education is expected to be transformed into **personalised student experience** through access to digital platforms, mentorship and immersive experience instead of formal tuition. This refers to the total interaction between students and their educational institution, from interest and recruitment through graduation and engagement as alumni. Understanding and responding to a need to improve the student experience will be a key differentiator within higher education [1].

Today’s students, known as digital natives or net-generation, have expectations for education that centers on their relationship with technology. They want to interact differently and expect **consumer-focused experience** from their educational institutions [2]. They want their opinion to be considered in their customer journey and expect the presence of a constant feedback loop as some default feature, just like in any software app on their smartphone. Cross-life-cycle CRM is considered as just the first steps towards building the new version of customer-focused student experience.

Another significant trend in HighEd is the evolution of a finite 4- or 5-year degree into the concept of “**lifelong learning**” with “**stackable credentials**”. The exponential rate at which new knowledge is created today is drawing a new breed of alternative education providers into higher education. These providers are developing lower-cost, lightweight, on-demand learning solutions to help close the growing gap between the skills employers seek and the skills students possess upon graduation. These alternative education providers fall into two broad categories: Massive Open Online Course MOOCs (edX, Coursera) and immersive (BootCamps) [3]. To be able

to compete with alternative education providers, higher educational institutions need to focus on development of their technical infrastructure.

In response to the pandemic in 2020 high education universities were forced to switch to **COVID-19 fully online campuses**. Analysts project that in a post-pandemic world there will be demand for **hybrid approaches** with both online and offline experience. According to Gartner's research, CIOs should prepare to support more hybrid and blended learning in cost-effective ways by identifying the different models of blended learning and not over-investing in classroom technology such as lecture capture [1].

As the concept of adaptation to COVID and post-COVID reality, Deloitte developed **Smart Campus Vision** (Fig 2.1) that presents true digital transformation with positive impact to student experience across the whole lifecycle. The following benefits of this concept are outlined as major ones: enhancement of student's experience, higher revenue generation, optimization of operations, adaptive learning styles, improved data-decision making process, recruiting the right student and tightening the alumni ties [2].

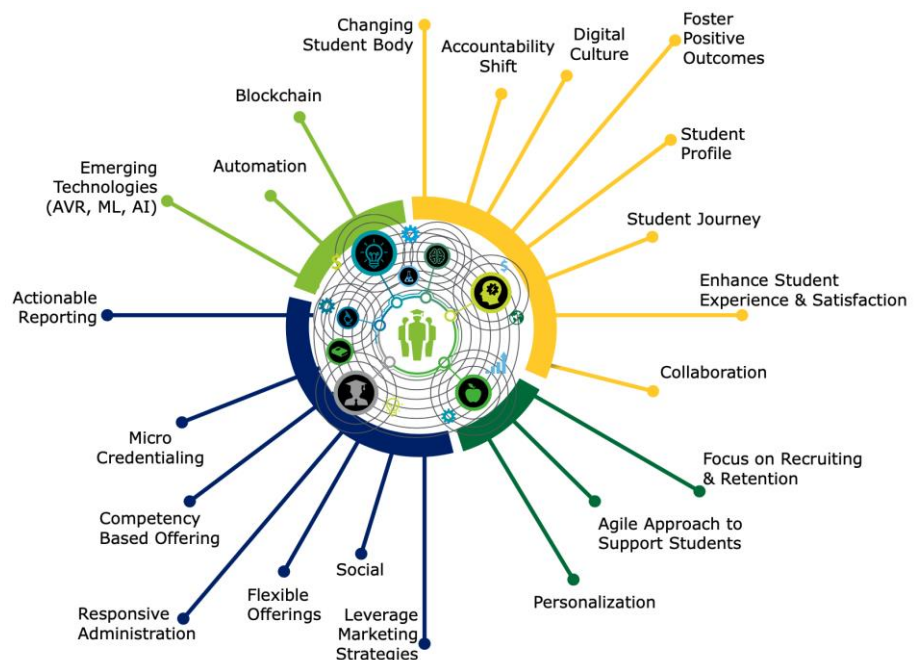


Fig. 2.1 Smart Campus Vision, Deloitte [2]

Decreasing disconnect between educational program and labour market demand is another challenge for HEIs, though not a new one. Earlier forms of corporate engagement tended to focus on R&D and postgraduate recruitment. However, these new and growing forms of collaboration focus far more on enrolling students into or helping them complete programs or providing courses, curricula or hands-on learning [1]. Another opportunity for businesses to enhance the level of competences for students as their potential employees is to actively exploit internship programs. With individual education plans students should be able to participate in 2-3 internship programs in different corporations starting from the first years of their educational path, not after its full completion. The strategy for institutions here should be to not build curricula and courses under specific employers, but to cooperate with professional clusters (e.g. with local IT clusters for Computer Science faculties).

Thus the opportunity to exploit internships and other hands-on opportunities from potential employers, building professional networks along with custom-tailoring higher education under individual career interests and objectives, schedule, and budget before landing the first job becomes known as **entrepreneurial education**.

With data as a new currency, a more conscious **data-driven approach to the HEI decision-making process** is expected from future students. Today, because of organizations such as LinkedIn, which provides free access to its members' aggregated education and career data, we can map the career pathways of hundreds of millions of professionals—data that students can use to make more informed college decisions. Students can see the varied paths today's professionals took to succeed in their chosen fields. Moreover, MOOCs and other short term immersive programs provide a medium through which students can begin exploring possible areas of interest before committing to an educational pathway [3].

Fig. 2.2 summarises how with all the abovementioned transformation of student's experience in 5-10 years will differ from the one they have now.

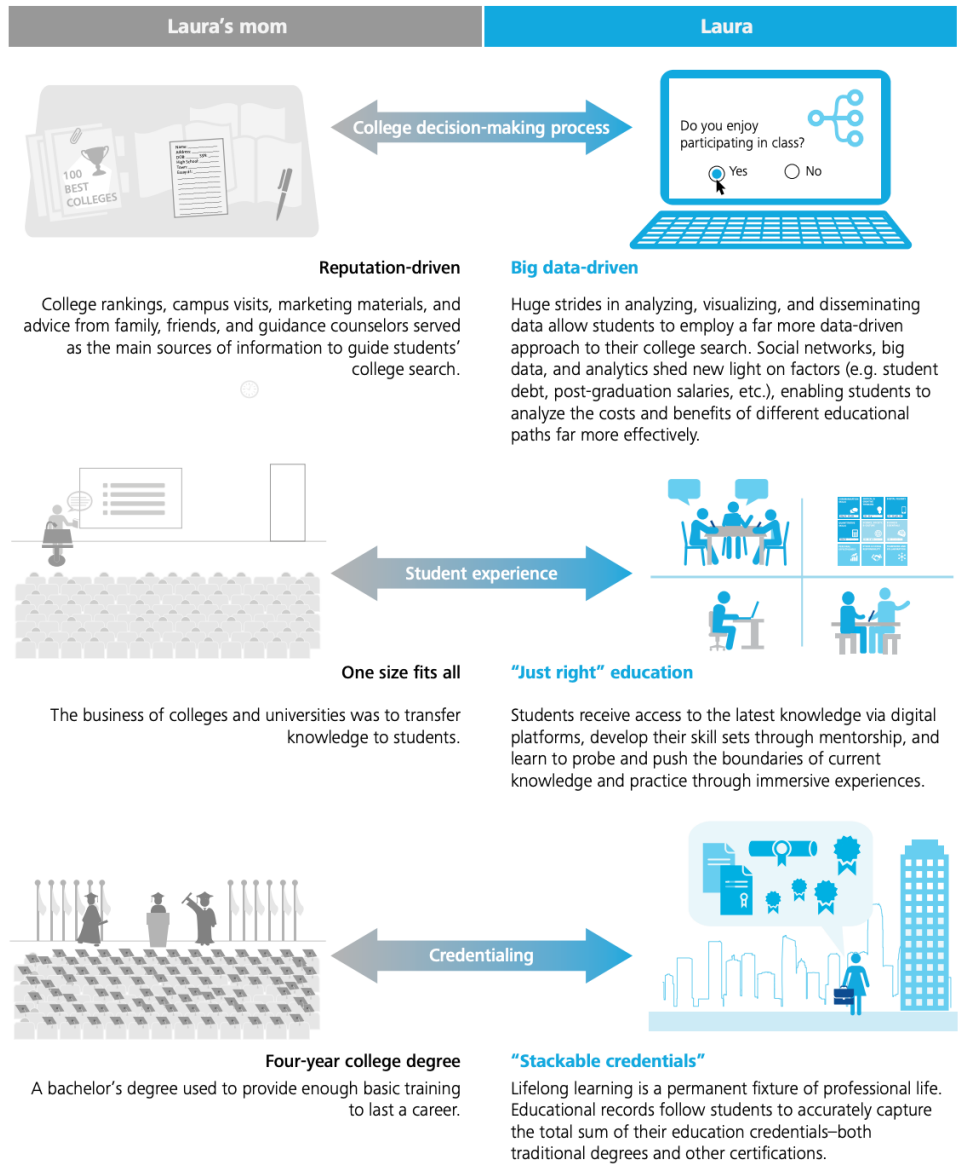


Fig. 2.2 Top Higher Education Trends in 2021[3]

2.2 IT Strategy for HighEd

With COVID-19 reality institutions became highly dependent on IT infrastructure. Alignment of business strategy and information technology (IT)/information systems (IS) strategies became even more critical than it was before.

Alignment is seen to assist a firm in three ways: by maximising return on IT investment, by helping to achieve competitive advantage through IS, and by providing direction and flexibility to react to new opportunities. However, the apparent gap between the decision to invest in IT and the realisation of benefits (Weill and

Broadbent, 1998) highlights the risk of using IT to initiate new strategies and transform business [4].

SAM draws a distinction between the external perspective of IT (IT strategy) and the internal focus of IT (IT infrastructure and process). This recognises the potential of IT to both support and shape business policy. It also elevates IT strategy from the traditional role of IT as solely an internal support mechanism (Henderson and Venkatraman, 1989).

According to the Strategic Alignment Model (SAM) of Henderson and Venkatraman [1999] there are 4 different models of linkage among business strategy, business operations, IT strategy and IT infrastructure (see Fig. 2.3).

- 1) **Strategy Execution.** In this perspective Business Strategy is considered as a main driver for both organisational design and definition of IT infrastructure. IT management is only strategy implementer, whose main function is to provide IT capabilities within KPIs determined by top management.
- 2) **Tech transformation.** In this perspective Business Strategy remains a key driver, but IT strategy evolves to the higher level. Top Management is expected to formulate the Technology Visionary that will support achievement of Business Strategy. The role of IT Management in this perspective evolves to the role of Technology Architect.
- 3) **IT as a revenue center (Competitive Potential).** This perspective assumes IT Strategy as a key driver that through exploration of emerging IT capabilities to influence new products and markets, influence key attributes of the strategy and develop new forms of relationships. Unlike previous perspectives, this one doesn't consider business strategy as a pre-defined one and allows modification of Business Strategy via emerging IT capabilities. The role of IT Management evolves to a catalyst and advisor, who advocates how IT trends may positively impact Business Strategy.

4) **Service Level.** This perspective is about how to build a world-class IT organisation within an organisation. The role of IT Management evolves to Executive Leadership. The role of Top Management comes as a prioritiser, whose main goal is to decide where the resources should be allocated.

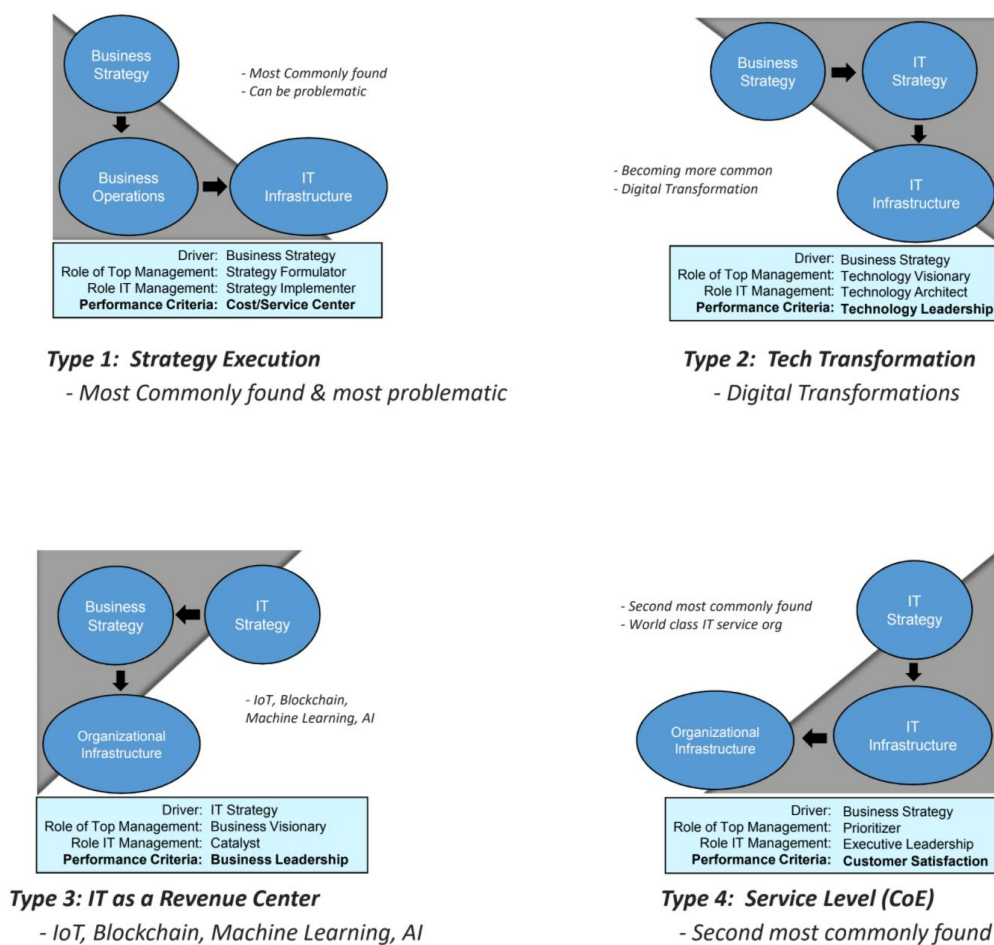


Fig. 2.3 Strategic Alignment Model (SAM) for alignment of business and IT strategies

Historically IT in HighEd follows the Strategy Execution perspective. COVID-19-related and other trends in HighEd brings to attention the necessity to consider evolution from a Tech Transformation perspective.

2.3 Cross-life-Cycle CRM in Student Journey

Student journey is much more complicated than it is usually assumed, starting from HEI selection process towards graduation and advancement of alumni status (Fig 2.4).

At each stage students want regular, relevant and insightful communications; universities want a streamlined way of reaching out to students without extra manual work. Structured and comprehensive data about students (hobbies, background, certificates, volunteering experience, etc.) is required to build the relevant and personalized experience for them in HEI.

Student Life-Cycle CRM is the first step in the tech transformation, in order to make it happen. CRM in this study, and in the context of HEI, is defined as a cross - departmental, customer-centred, technology aggregated business- process- management strategy that should optimise customer relationships; and yield benefits that span the entire enterprise [5].

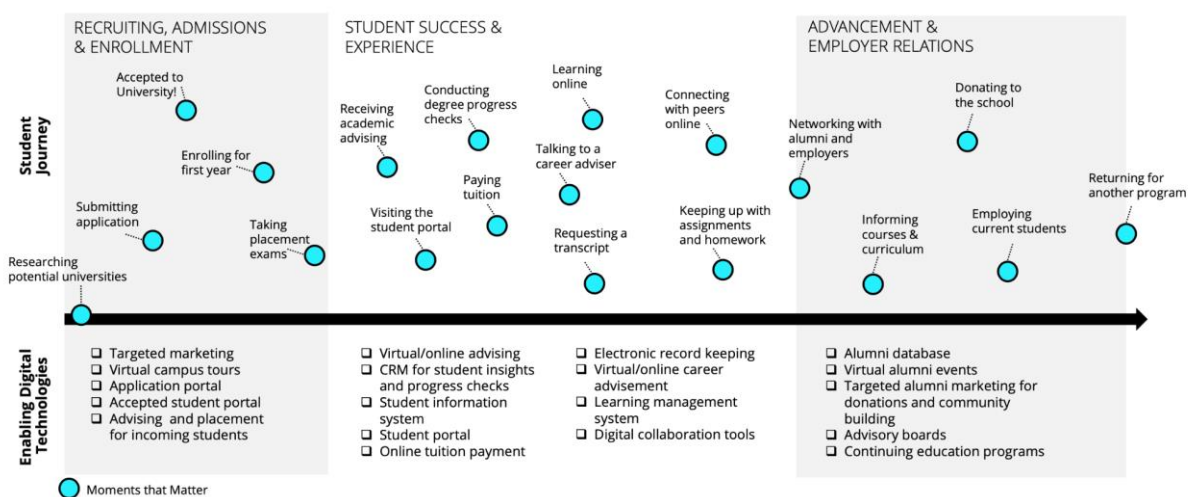


Fig. 2.3 Digital transformation of Student Journey, Deloitte [3]

Customer relationship management (CRM) is a set of practices that provide a consolidated, integrated view of customers across all business areas to ensure that each customer receives the highest level of service. CRM enables an ongoing one-to-one

relationship with the customer. When relationship management is enhanced by technology, a “seamless integration of every area of business that touches the customer” is provided [5].

CRM has been described as “a customer-focused business strategy that aims to increase customer satisfaction and customer loyalty by offering a more responsive and customized service to each customer”. In higher education, students are the customers; some areas that touch the students are enrollment process, receiving academic advising, academic support services, etc.

In the last 20 years, the super store concept, the internet, the rise of the suburbs, and increased consumer mobility, have made the customer relationship more complex. Customers had more choices and marketing needed to become customer-centric. While Information systems provided far more customer-related data, making sense of that data became nearly impossible. Attempting to glean useful information from myriad sources was very labor intensive. The organization needed to identify, acquire and retain new customers, to understand what they wanted, and to develop customer loyalty. CRM systems accomplish this task by consolidating information from all customer touch points into a central repository accessible by all business areas [5].

Among benefits of Student Life-Cycle CRM:

- automation of targeted personalised communication channels;
- real-time numbers, data, and graphs that may be useful in decision making;
- tracking every aspect of a student lifecycle;
- workflow automation.

In our project an impact of Student Life-Cycle CRM into the student recruitment process as a part of the whole student journey was investigated.

2.4 Specific of management consulting project

Management consulting is generally described as a process of helping managers solve problems that occur as a part of their managerial responsibilities [6].

The International Council of Management Consulting Institutes (ICMCI), for example, defines management consulting as “the rendering of independent advice and assistance about the process of management to clients with management responsibilities [7]. A management consultant stands apart from the client, not taking the client’s problem definition and facts as given, but performing his or her own independent appraisals (Greiner & Metzger, 1983).

A second important assumption underlying the service of management consulting is that it is a contractual relationship, implying a clear definition of the content, terms and duration of the relationship [6].

Why do clients use consultants?

1. To “See the Big Picture”
2. To gain knowledge from the inside
3. To get energy and focus

In this work we’ll use The 7 Step Consulting Framework by 180Degrees Consulting (Fig 2.4). It outlines the main stages of a consulting projects as:

- 1) **Define the problem.** This stage will be dedicated to organisational analysis of UCU including business model, UCU IT strategy, UCU strategic goals for 2025 and technology impact on their achievement; analysis of current status of the UCU student recruitment process, toolset used. The main data source will be structured and unstructured interviews with key project stakeholders and analysis of documentations on UCU org structure, mission and strategy.
- 2) **Structure problem.** At this stage the problem will be framed and decomposed for what is in project scope and what is out of scope.
- 3) **Prioritise issues.** Usually a CRM solution is considered as a “silver bullet” that will solve all the current organisational issues and completely remove the manual overhead. At this stage it’s important to prioritise the expectations from the software.
- 4) **Develop issue analysis and analysis plan.**

- 5) **Conduct analysis.** In scope of this stage CRM solutions will be analysed through market research, communication with CRM vendors through initial email inquiries to vendors and demo calls.
- 6) **Synthesize findings.** The findings will be presented as several scenarios that UCU may go forward with, including pros and cons and cost efficiency for each scenario.
- 7) **Develop recommendations.** Based on the comparison analysis of synthesized scenarios, the one most beneficial one will be recommended along with the roadmap on its execution.

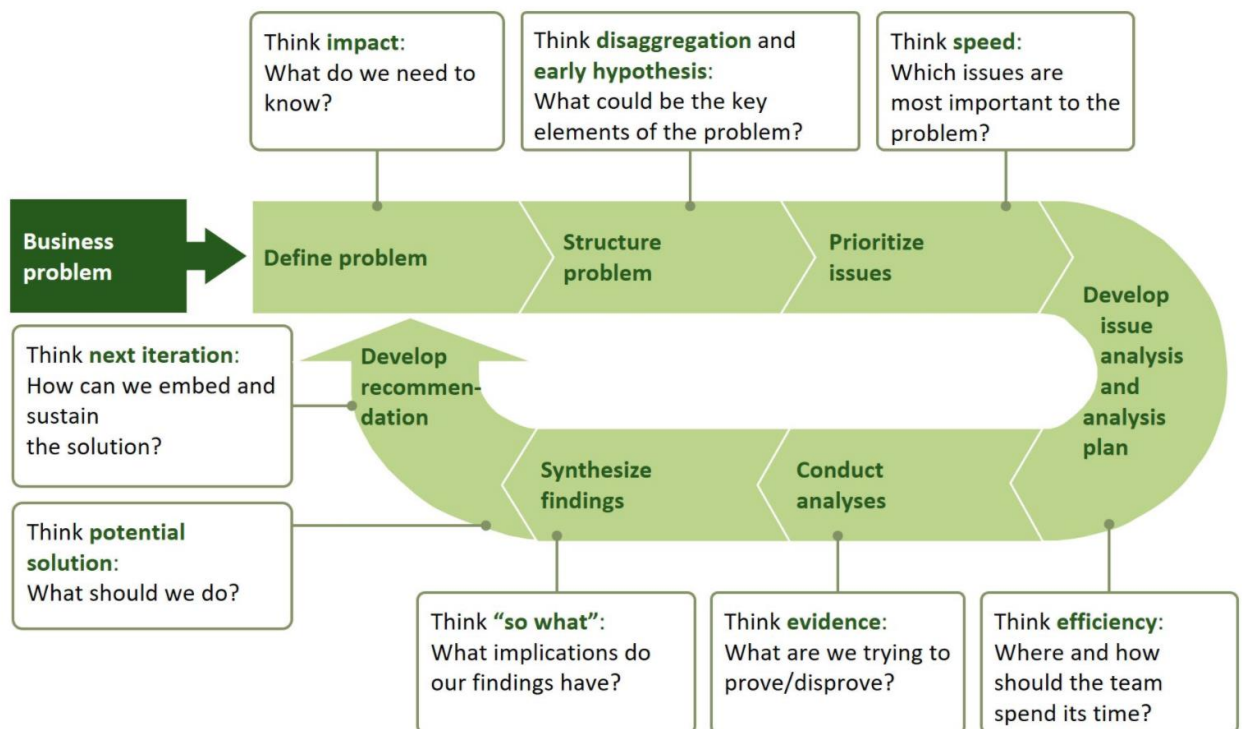


Fig. 2.4 The 7 Step Consulting Framework [180 Degrees Consulting], [8]

2.5 Conclusions

1. HighEd as an industry is going through a massive transformation nowadays. The main drivers are higher expectations from the new generation of students, technology enabling data-based decision and speed of new knowledge created.

2. The paradigm of a finite higher education based on predefined lecture / practice programs transforms into a concept of “lifelong learning” and education as a unique and personalised customer-focused experience.
3. COVID forced to adopt some transformations in HighEd IT structure like online and hybrid modes much faster than it was projected in pre-pandemic times.
4. “Lifelong education” trend opens opportunities for new revenue streams for HEIs under the condition of proper technology infrastructure in order to compete with MOOCs and immersive education providers.
5. There is a demand for an IT function in HighED to switch from support and strategy execution role to a Tech Transformation role.
6. Cross-life-Cycle CRM becomes an obligatory part of HEI’s IT infrastructure for the relevant data management and building the customer-focused student experience.
7. The work on this project will be built following the character of management consulting project. The 7 Step Consulting Framework by 180 Degrees Consulting is used as a framework.

3 UCU: ORGANISATION OVERVIEW

This section opens the “Define problem” project phase. It covers organisational analysis of UCU including business model, UCU IT strategy, UCU strategic goals for 2025 and technology impact on their achievement; analysis of current status of the UCU student recruitment process, toolset used. The main data sources are structured and unstructured interviews with key project stakeholders and analysis of documentations on UCU organisational structure, mission and strategy.

3.1 UCU Business Model

Business Model Canvas (Fig 3.1) is used as one of the tools for the analysis of UCU business model. It describes an organisation’s value proposition, infrastructure, customers, and finances.

The Canvas highlights several major points:

1. The whole UCU business model relies heavily on community and relationships.
2. Main revenue streams for UCU as a private HEI are donations, income from Bachelor’s and Master’s programs, business school and certificate short-term programs.
3. Unlike other HEIs in Ukraine UCU has a strong mission statement and high quality standards for educational programs.
4. UCU community serves as a source for donors, employees, value proposition for students, source of candidates for Master’s and short-term commercial programs.

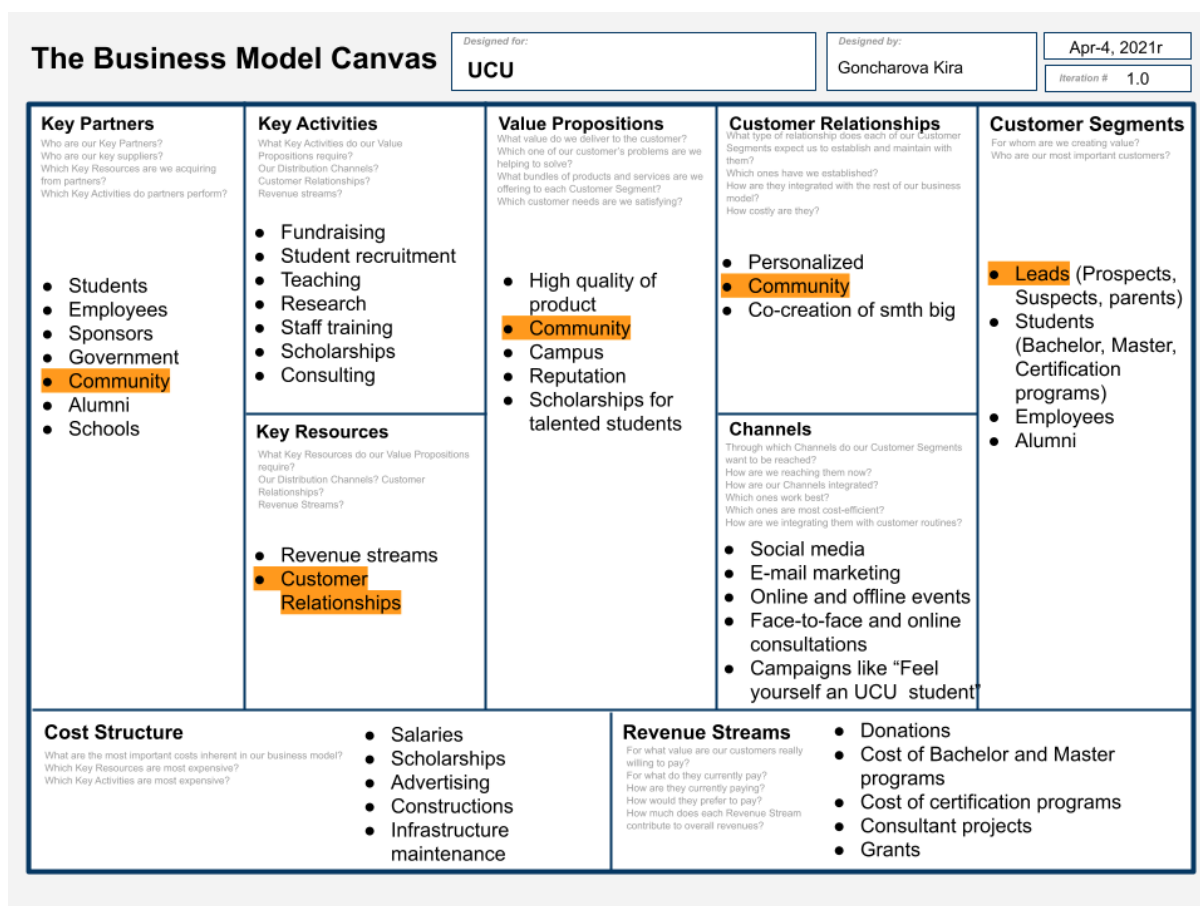


Fig. 3.1 UCU Business Canvas Model

3.2 UCU SWOT Analysis

The next step in UCU organisational study is a comprehensive SWOT analysis. It allows us to identify internal strengths and weaknesses, as well as external opportunities and threats.

Table 3.1

UCU SWOT Analysis

Strengths	<ul style="list-style-type: none"> • High quality of product comparing to public HEIs • Value-based culture • Entrepreneurship spirit • Community as a source of employees, sponsors and leads with aligned values • Strong brand • Modern campus
Weaknesses	<ul style="list-style-type: none"> • Tough competition for employees with business corporations

	<ul style="list-style-type: none"> • Lack of staff with the necessary expertise on the market • Each professional executes multiple roles • Lack of process automation • Dependency on success of annual fundraising program
Opportunities	<ul style="list-style-type: none"> • Trend on “lifelong learning” raise demand for certification programs • Public HEIs grow the cost of programs • Paying for high-quality high education becomes “normal reality” • COVID: Candidates for Bachelor and Master decided to stay in Ukraine, not to apply to foreign HEIs • Growing economy leads to demand in consulting services
Threats	<ul style="list-style-type: none"> • Public HEIs offers to UCU candidates free education • COVID: Online / hybrid formats miss the sense of community and campus as selling points • COVID: With online format certification programs in foreign HEIs become competitors • COVID: Less attendance of hiring-oriented events in online

3.3 UCU Strategy 2025

UCU has well-defined mission and vision statements decomposed into strategic goals and strategic projects (Fig 3.2).

There is also a clear definition of what UCU community is “**a community that serves**” [9]:

- STUDENTS who study and acquire life experience in order to become leaders who serve;
- TEACHERS who serve for students’ integral human development;
- BENEFACTORS AND PARTNERS who by their dedication and generosity create a university as the best illustration of what marvels dedicated people can achieve;

- **LEARNING FOR EDUCATION** cooperation, influence, and change, in order to change how we think about various problems of our society and the world, and also what we do with them;
- **AN ACADEMIC ENVIRONMENT** which strives to be life-giving and share its gifts with the needy.

One of the constituents of UCU vision 2025 is to become **a university which is an innovative, effective and entrepreneurial institution of higher education in all aspects of university life**. It flows into:

- 1) Strategic goal: “Advanced management system, an entrepreneurial university” and
- 2) Strategic project “**Implementing CRM systems for staff, prospective students, students, graduates, donors** as well as introducing an interactive portal with access to UCU data”

Thus the value of Cross-life-Cycle CRM is already recognised in UCU and its integration is included into the strategic goals.



Fig. 3.2 UCU Strategy-2025: Vision, Strategic Goals and Strategic Vision

3.5 Linking technology transformation to value

Even though the importance of implementation of Cross-life-Cycle CRM is acknowledged and its integration is included into the strategic goals, still during the interviews some stakeholders expressed concerns on the real value of such significant investments into IT.

In this section we use Shareholder Value Map designed by Deloitte to analyse how CRM integration will contribute to shareholder value and overall UCU business model.

Regardless of the business, shareholders value a company that can grow revenue while delivering a healthy margin and efficiently using its assets [10]. Furthermore, shareholders value the ability of management to sustain the continuing improvement of revenue, margin, and asset efficiency [10].

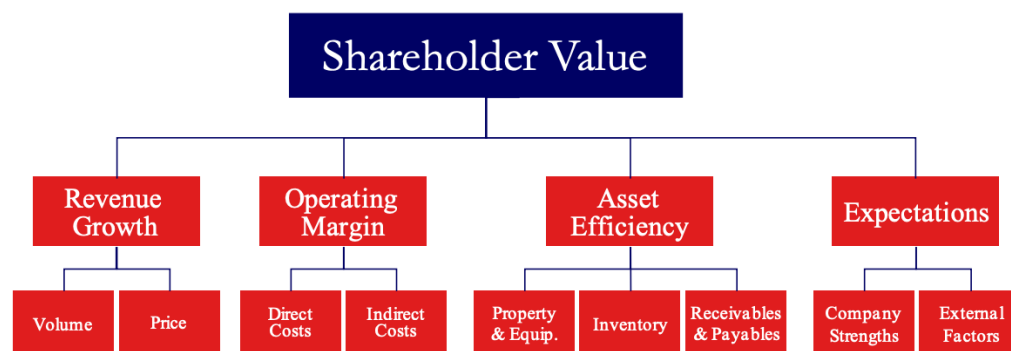


Fig 3.3 High-level Shareholder Value Map

Each of the value drivers can be affected by specific actions, such as the ones shown on Fig 3.4. These actions can affect the drivers of shareholder value by either changing what an organization does, or improving the way it does it [10].

Revenue Growth		Operating Margin		Asset Efficiency			Expectations
Volume	Price	Direct Cost	Indirect Cost	Property & Equipment	Inventory	Receivables & Payables	Company Strengths
Innovate products and services	Manage supply and demand	Improve product development efficiency	Improve marketing and advertising	Improve real estate efficiency	Improve finished goods inventory efficiency	Improve accounts, notes, and interest receivables	Improve managerial and governance effectiveness
Strengthen sales and marketing	Improve pricing	Reduce cost of materials	Improve sales process	Improve infrastructure efficiency	Improve work in process efficiency	Improve accounts, notes, and interest payables	Improve partnerships and collaboration
Improve account mgmt		Improve production efficiency	Improve customer service	Improve systems and equipment	Improve raw materials efficiency		Improve agility and flexibility
Focus on customer retention		Improve logistics and distribution	Improve order fulfillment and billing				Enhance strategic assets
Cross-sell		Improve merchandising	Improve corporate services				
Leverage income-generating assets		Improve service delivery	Improve tax efficiency				

Fig 3.4 Potential Ways of Affecting the Drivers of Shareholder Value

It is not always obvious whether revenue growth is to be favored over margin improvement or vice versa. It may depend, for example, on whether we're trying to achieve long-term growth or short-term returns. [10]

Value of any initiative should be evaluated through the organisation's strategy vision, current strategic objectives and initiatives.

By mapping the Strategy Tree to the Shareholder Value Map as in Fig 3.5, we are able to link the company-specific strategic initiatives with the company-agnostic – and commonly recognized – shareholder value map.

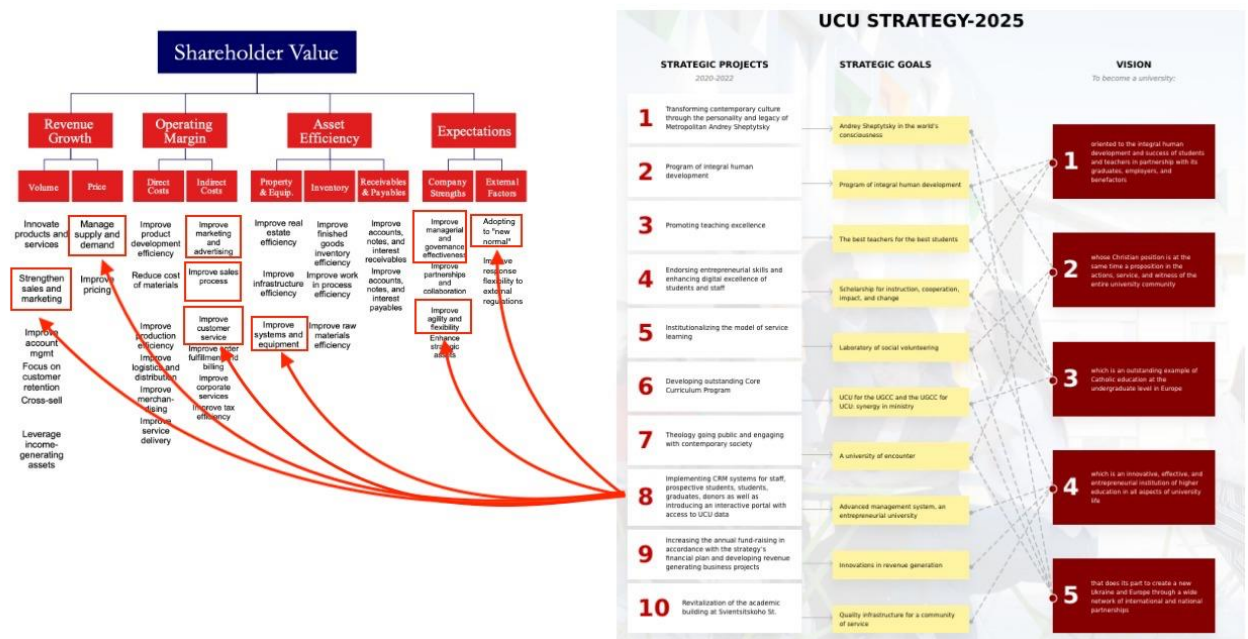


Fig 3.5 Cross-life-Cycle CRM Affecting the Drivers of Shareholder Value

Based on the Deloitte's Shareholder Value Map framework, the integration of Cross-life-Cycle CRM will contribute to:

- 1) **Revenue Growth** through
 - a) Strengthening sales and marketing (**Volume value driver**) ;
 - b) Management of supply and demand (**Price value driver**).
- 2) **Operating Margins** through
 - a) Improving marketing and advertising, sales process and customer services (**Indirect Costs value driver**).
- 3) **Asset Efficiency** through
 - a) Improving systems and equipment (**Property&Equipment value driver**).
- 4) **Expectations** through
 - a) Improving managerial and governance effectiveness, organisation's agility and flexibility (**Company Strengths value driver**);
 - b) Adapting to "new normal" (**External Factors value driver**).

3.6 Conclusions

Based on the comprehensive UCU organisational analysis, the following findings were synthesized:

- 1) The UCU business model relies heavily on community and relationships. The organisation has a strong mission statement, entrepreneurship spirit and definition of what the UCU community looks like.
- 2) UCU community serves as a source for donors, employees, value proposition for students, source of candidates for Master's and short-term commercial certification programs.
- 3) UCU is known for high quality educational products, but not all the candidates are ready to pay the relevant price. As steps towards revenue growth UCU is increasing the cost of programs, leveraging the trend of "lifelong" learning through short-term commercial certification programs, extending the range of services through cooperation with business (e.g. consultant service). All of these steps require continuous data-based managerial decisions.
- 4) UCU Strategy 2025 includes the strategic project "Implementing CRM systems for staff, prospective students, students, graduates, donors as well as introducing an interactive portal with access to UCU data" as a part strategic goal: "Advanced management system, an entrepreneurial university". Thus the necessity to invest into a CRM solution is authorised, though the real value is not recognised by all stakeholders.
- 5) Application of Deloitte's Shareholder Value Map shows that integration of Cross-life-Cycle CRM will contribute to Revenue Growth, Operating Margins, Asset Efficiency, and Expectations value drivers.

4 UCU STUDENT RECRUITMENT PROCESS

This section covers “Define problem” and “Structure problem” project phases. It describes analysis of current status of the UCU student recruitment process, toolset used, framed and decomposed problem, project scope and out of scope.

4.1 UCU student recruitment process overview

The overview of UCU student recruitment process provided below is based on interviews with:

- Anna-Yustyna Turchynovska, Lead of UCU Student Recruitment Department
- Ostap Machynskyi, Head of Admission Office
- Sophia Opatska, Pro-Rector for Academic Affairs and Research

Table 4.1

Student recruitment department: goals, team, KPIs, toolset

	Now (2021)	Projected (2022-2023)
Business Goal	Student recruitment process for UCU Bachelor and Master programs (mostly focused on Bachelor programs)	Student recruitment & admission processes for UCU Bachelor and Master programs
Team	<ul style="list-style-type: none"> ● 6 full-time team members; ● 2-3 students are involved on a part-time basis (like accept calls on reception, then add this info to CRM) 	<ul style="list-style-type: none"> ● 8 full-time team members; ● 2-3 students are involved on a part-time basis (like accept calls on reception, then add this info to CRM)
KPIs	<ul style="list-style-type: none"> ● at least 97% of licenses vacancies on Bachelor programs are closed (~450 vacancies) ● at least 85% of UCU applicants for Bachelor programs should be in UCU recruitment database, incl <ul style="list-style-type: none"> ○ "prospect 0" - 85%+, ○ "prospect 1" - 75%+, 	<ul style="list-style-type: none"> ● at least 97% of licenses vacancies on Bachelor programs are closed (~450 vacancies) ● at least 85% of UCU applicants for Bachelor programs should be in UCU recruitment database, incl <ul style="list-style-type: none"> ○ "prospect 0" - 85%+, ○ "prospect 1" - 75%+,

	<ul style="list-style-type: none"> ○ "prospect 2" - 50%+ ● at least 55% of UCU applicants are in top 5% of ZNO results in Ukraine ● at least 25% of UCU applicants are out of Galicia region (out of them at least 1/3 are out of Kyiv and Kyiv region) ● 1/3 of applicants choose no more than 2 programs and their ZNO rating is 190+ 	<ul style="list-style-type: none"> ○ "prospect 2" - 50%+ ● at least 55% of UCU applicants are in top 5% of ZNO results in Ukraine ● at least 25% of UCU applicants are out of Galicia region (out of them at least 1/3 are out of Kyiv and Kyiv region) ● 1/3 of applicants choose no more than 2 programs and their ZNO rating is 190+ ● <u>ROI (return on investment)</u> ● <u>Yield rate (number of approved applicants who converted to UCU students and not chose another university)</u>
Toolset	<ol style="list-style-type: none"> 1) Google Spreadsheets for contact management 2) SendPulse: email marketing 3) Website/ phone/ chats 4) Offline and online consultations 5) Alpha version of iCube, LVBS CRM customised under UCU needs for Bachelor's admission campaign (Master's, certification programs and Alumni are out of scope) 	<ol style="list-style-type: none"> 1) <u>Recruitment CRM, that covers at least the following functionality:</u> <ul style="list-style-type: none"> - <u>Contact Management</u> - <u>Lead Scoring, Reports and Dashboards</u> - <u>Analytics</u> - <u>Email Marketing Integration</u> - <u>Social Media Management Integration</u> - <u>Event Management</u> - <u>Marketing Automation Integration</u> <u>Recruitment CRM should be an integrated piece of the UCU-level IT infrastructure</u> 2) <u>Website/ phone/ chats</u> 3) <u>Offline and online consultations.</u>

The key components in UCU student recruitment process are:

1) Building brand awareness through:

a) **Events** (e.g. "Feel yourself a student", "Leadership masterclasses").

Events are targeted by different age, program direction, applicant engagement levels etc.;

- b) **SMM** (targeting applicant parents in FB, applicants - in Instagram and Telegram);
 - c) **Targeted email campaigns;**
 - d) Leveraging **word of mouth** and **positive reference from loyal students.**
- 2) Providing **informational support to applicants and their parents** through:
- a) Chat sessions on website (usual frequency ~5 chats / day, during admission campaign - 30-40 chats per day);
 - b) Phone calls.

Close to zero headhunting approach in recruitment. Before COVID there were experiments with offline events in different schools, but the cost of lead was higher than for media-focused approaches like Google Ads or targeted online programs.

Large piece of student recruitment department work is to show to the applicant and their parents **what the program gives to students after graduation**, and show success stories of alumnis. The benefit here is that the department is composed of mostly UCU graduates. They have very good knowledge about the products and share UCU values.

UCU lead qualification model:

- SUSPECT 0 - contacts that came not from UCU sources;
- SUSPECT 1 - used to be SUSPECT 0 and then reacted to some event, like marketing email;
- PROSPECT 0 - registered to 1-2 UCU events, but didn't attend;
- PROSPECT 1 - attended 1 UCU event;
- PROSPECT 2 - attended 2 events;
- PROSPECT 3 - attended 3+ events.

The applicant conversion stages are shown on Fig 4.1. UCU student lifecycle in numbers:

1. Applicants 3-5K / year

2. Total students 2-2.5K
3. Alumni - now 2K in total, +600 alumni each year.

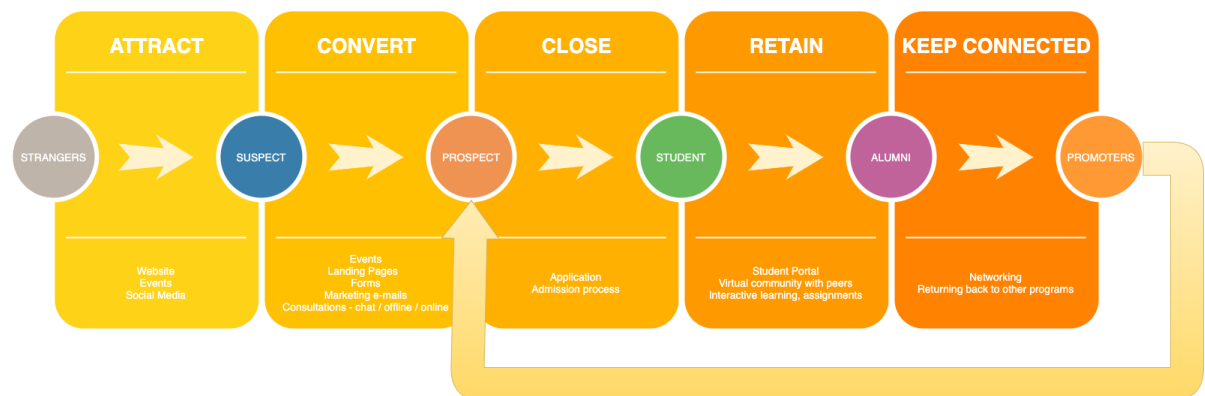


Fig 4.1 Applicant conversion stages

Thus **student recruitment process is a start point**, key process for building UCU community that further results in:

1. students as customers;
2. alumni as potential sponsors, employees and customers;
3. students and alumni as brand advocates.

Challenges & pain points in student recruitment process:

- 1) COVID reality (more details below) and post-COVID as a “new normal”
- 2) Half-manual processes. No opportunity to target candidates with custom messages, since all contacts are in Excel.
- 3) Combination of operations and project activities.
- 4) Raised cost of programs. Recruitment team doesn't have a direct impact on product quality. In 2021 4 programs will be launched at full cost (30% may be paid after graduation). Before 2021 at least part of the program cost was covered through donations. Since programs raise the price, the product should change as well.

- 5) UCU is developing the market of high-quality paid HighEd. Not all parents yet are ready to pay for higher education, since free higher education is available in public Ukrainian universities.
- 6) Now only very basic info on applicants is gathered - school, ZNO ball, etc. CRM may help to gather the full profile of the applicant, then to process it in a more relevant way in further departments after admission.
- 7) Student recruitment team is composed of young people, mostly graduates. For them the job is for 1-3 years, then they move forward. The processes shouldn't be tied to specific people. Onboarding to processes and toolsets should be easy and fast for newcomers.

COVID brought the following changes to the student recruitment process:

1. With COVID focus shifted to more media projects. Less events, more SMM.
2. Now focus shifts to more operational excellence and building relationships with candidates. Events should stay, but more focus should be on a customised approach to contacts. Targeted events, targeted emails, more consultations.
3. No option to consult offline starting spring. **Campus as a selling point is not working** now. No feeling how many candidates are interested.
4. Online events attend 30% of registered users. No good contact with candidates and parents.

4.2 iCube software. First step towards process automation

As a first phase in automation of the student recruitment process, the team is integrating iCube CMR. This is a CRM solution designed and developed initially under the needs of Lviv Business School and being customised under UCU needs.

The overview of UCU iCube CMR solution provided below is based on:

1. Interview with iCube CMR vendor provider, PE Mirko Maksymovych

2. Analysis of the current configuration of UCU iCube CRM (as of Apr-25, 2021)

Table 4.2

UCU iCube CRM: Non-functional characteristics

Tech Stack	Backend - pure PHP, no frameworks Frontend - Vue.js Forms - React Database - MySQL
Development Team	1 developer, no back-up
Hosting	Virtual server hosted by iQube provider (no separate physical server or Cloud-hosting) iQube CRM is provided to UCU as a SaaS solution
Pricing	UAH: 60 000 UAH/year or 5000 UAH/month subscription USD: ~\$2,150 / year or \$180 / month subscription
Security	Basic protection from password bruteforce. Vendor plans to implement some additional security measure to protect from DDoS attacks
Backups	Database is backed up every 4 hrs. File system is backed up regularly, but less frequently.

Table 4.3

UCU iCube CRM: Functionality

Feature	Feature Description	Current Status
Contact Management	It allows users to segment your contacts into groups to organize and better cater to them.	In progress
Lead Scoring	It allows users to identify the customers that are most likely to convert.	In progress
Analytics	Tracking analytics on past campaigns, collecting data from social media, polls and website traffic, then analyze it.	In progress
Email Marketing Integration	Integration with third-party email marketing solutions like SendPulse	In progress
Event Management	Builder for forms and landing pages, automated process for contact synchronisation btw CRM and event form.	In progress

Marketing Automation Integration	It allows you to more efficiently and strategically target audiences that are likely to be interested in what you're selling	In progress
Reports and Dashboards	Statistics in a highly visual, engaging perspective using customized reports and dashboards with real-time updates	No
Mobile version		No
Social Media Management Integration		No
Workflow and Approvals	Optimization by automating processes like data collection, data analysis, marketing campaigns and other tasks that were previously done manually	No
Chat Integration		No
Web Analytics Integration	It allows to collect data on who is visiting your website. It analyzes that raw data, identifies problem areas, suggests ways to improve and provides insights into the way your user base interacts with your website	No
File Storage	Proprietary method of data storage so users can pull up the data in an efficient manner	No
Support Automation	FAQ pages, chatbots and email correspondence are becoming increasingly automated as AI capabilities	No
Customization Options	The more customization, the more flexible the CRM	No

Table 4.4 covers analysis of pros and cons of iCube CRM from the perspective of current UCU needs.

Table 4.4

UCU iCube CRM: Analysis of Pros and Cons

Pros	Cons
Ready-to-go CRM solution that after some customisation should be ready to launch for 2021 admission campaign	The whole system is developed and provided by a single developer, "bus factor"
Vendor has a good understanding of UCU background and processes	The developer doesn't have product expertise in CRM solutions.
Reasonably low pricing	Very limited functionality comparing to alternative solutions on the market
	CRM vendor has 2 clients - LVBS and UCU. All the extra functionality is to be developed on-demand and at extra cost (as an alternative to market solutions that has wide database of clients and clear development roadmap)

	Local solution that is not designed to cover full student lifecycle
	Weak security characteristics

4.3 Conclusions

Based on the analysis of UCU student recruitment process, the following conclusions were made:

- 1) Student recruitment department is the first touch point in UCU Student Journey for the applicant. It's going through a transformation (merge of student recruitment and admission office functions) and continuous process change due to organisational growth and COVID reality.
- 2) Student recruitment department is mainly focused on recruitment to Bachelor's programs. Student recruitment to Master's and commercial programs are covered by Program Managers. Each department uses its own approaches and toolsets for applicant data tracking. This prevents applicants and afterwards students from consistent Student Journey at all stages.
- 3) Processes in the department are mostly manual, though quite specific data-based KPIs are defined. The major activities are focused on marketing, SMM, event management, informational support of applicants and their parents.
- 4) As a **project problem statement** in this project we'll define "Analysis of possible scenarios for automation of student recruitment process, as a first step in UCU Student Journey. Potential scalability of analysed solutions to Cross-Life-Cycle CRM should be considered as one of the key selection criteria. Detailed analysis of Cross-Life-Cycle CRM for the full UCU Student Journey is **out of scope** for this project".

5 CRM SOFTWARE: SCENARIO ANALYSIS

This section covers such project phases as "Develop issue analysis and analysis plan", "Conduct analysis", "Synthesize findings" and "Develop recommendations"

phase. It describes methodology of CRM solutions assessment, possible scenarios identified, comprehensive analysis of those scenarios, recommendations on the next steps.

5.1 Methodology for CRM analysis

5.1.1 Preliminary analysis.

The initial set of criteria to CRM software is defined based on the results of interviews with key project stakeholders, their min and max expectations from CRM solution, UCU organisational analysis.

List of selection criteria to compose the initial list of CRM solutions for further investigation:

- 1) CRM solutions should be designed under HEIs flow or have proven track records of customization under HEI's needs vs being just a generic CRM solution for any domain without any proven scenario for HighEd.
- 2) CRM vendors should operate globally (not being a local solution specific to e.g. the Nordics or the UK).
- 3) CRM solutions must cover the Recruitment process for HEIs.
- 4) CRM solutions must have the functionality to cover Student Cross-Life-Cycle (student engagement, alumni management) as a next step in automation of full Student Journey.

Sources for the initial short list:

1. "Customer Relationship Management (CRM) Systems in Higher Education. The guide to selecting a CRM system for higher education institutions", 2015 - extensive research conducted by StudyPortals and iEDSolutions [12].
2. Research on topic-related public sources on the Internet.
3. Consultations with Roy Mathew, Deloitte, Practice Lead on HighEd digitalisation

As a first stage of CRM solution analysis the following 26 CRM solutions were identified:

- Ellucian (Recruiter)
- Full Fabric
- Jenzabar (SEM CRM)
- Azorus
- Campus Management (Anthology)
- Maximizer CRM (Student Relate)
- Proretention (Engage2Serve)
- Slate
- Creatrix Campus
- Enrollment Rx
- Unified
- Connect CRM
- Hubspot
- Microsoft Dynamics CRM
- Salesforce - Cloud Education
- Zoho
- Oracle (Service Cloud)
- Creatio
- Student Recruitment System (SRS)
- Shape
- Hobsons (Radius)
- Data Harvesting (Student CRM)
- Symplicity (Ascend)
- Dream Apply
- Mira Network
- TargetX

9 CRM solutions were rejected after initial review due to the reasons specified in Table 5.1.

Table 5.1

CRM solutions rejected after preliminary analysis

#	System	Rejection reason
1	Student Recruitment System (SRS)	Specific to the Nordics HEIs
2	Mira Network	Specific to the Nordics HEIs
3	Data Harvesting (Student CRM)	Specific to the UK HEIs
4	Shape	Starts with Enrollment process (management of Enrollment inquiries) only, no Recruitment modules
5	Dream Apply	Starts with Enrollment process (management of Enrollment inquiries) only, no Recruitment modules
6	Symplicity (Ascend)	Doesn't cover recruitment process, but student journey inside campus already
7	Hobsons (Radius)	Acquired by CAMPUS MANAGEMENT CORP. (Anthology), to be reviewed within Anthology analysis
8	TargetX	-Acquired by Liaisonedu in Oct 2020 -Liaisonedu already owns product that covers recruitment - HigherYield https://www.higheryield.org/ -TargetX separately covers only Recruitment and Retention -No clear strategy is communicated on product integration into Liaisonedu group of products -Liaisonedu doesn't have transparent track records. Too high risks.
9	Azorus	Covers Recruitment process only, no opportunity to scale to full Student Journey

5.1.2 Synthesis of scenarios, approach to their analysis

The rest 19 CRM solutions were grouped into 3 possible scenarios for UCU:

- 1) Scenario “**Niche CRM designed specifically under HighEd**”. The scenario covers analysis of integration of CRM solutions focused on automation of processes specifically in HighEd (Full Fabric, Engage2Serve, Ellucian, Unifyed, Anthology). These solutions may have better feature fitment and easier integration process, but cost, lack of “try

before you buy” option, poor control over customisation and lack of expertise among staff are major disadvantages.

- 2) Scenario “**CRM market leader**”. The scenario covers analysis of integration of a CRM-leader in the global CRM market (HubSpot, Salesforce, MS Dynamics CRM, Oracle Service Cloud). These solutions are usually overloaded with features due to many supported business domains, heavy in integrations and quite costly. The advantage is that most of them support the “try before you buy” option, some have discounted programs for HighEd or small businesses. With the relevant in-house IT expertise a wide range of customisations is possible.
- 3) Scenario “**In-house CRM development**”. The scenario covers analysis of in-house CRM development (could be from scratch, could be on top of iCube in case of its code acquisition). The common benefit of this scenario is full control over the software, its customisation and upgrade. The usual benefit is big Time-to-Market, cost, no “try before you buy” option.

For the detailed analysis and comparison of the synthesized scenarios we use the framework designed by Infosys [13], but customised under the needs of the project.

7 major factors are analysed and scored (1-5) for each scenario:

1. FITMENT OF FEATURES
2. PLATFORM FLEXIBILITY
3. SET UP AND INFRASTRUCTURE
4. SMAC – SOCIAL, MOBILE, ANALYTICS, CLOUD
5. COMMERCIAL IMPACT
6. UPGRADE AND SUPPORT
7. REPUTATION AND CONTROL

As a next step weight is defined for each factor based on current UCU needs and priorities, the scenarios are compared by the total weighted score.

5.1.3 Total Cost of Ownership Analysis

For the identification of Commercial Impact factor the total cost of ownership (TCO) for each scenario was calculated. TCO is the purchase price of an asset plus the costs of operation. Assessing the total cost of ownership represents taking a bigger picture look at what the product is and what its value is over time [14].

For the calculation of TOC the following **cost categories** were taken into account over the course of **10 years** [15]:

1. **Software license (Perpetual, Subscription)**. The primary licensing fee for these software vendors will either be a subscription fee paid on a regular basis, or a perpetual licensing fee which is a one-time payment for the software service up front.
2. **Hardware (Hardware costs)**. Additional fees for hardware required to host or support the software.
3. **Implementation (One-time setup fee, Ad-hoc customisations, IT Staff to hire for implementation)**. Possible cost of customizing software, data migration from previous systems, and integration with current systems.
4. **Training (Training cost)**. Cost of additional training, e.g. an expert from the software vendor visiting the team and leading an in-person or online training.
5. **Support (Support packages, IT Staff to hire for support)**. Ongoing support can also be a separate charge that covers maintenance, upgrades, and even premium forms of customer service.

The **total annual cost, cumulative cost and full cost for 10 years** were calculated.

5.3 Scenario “Niche CRM designed specifically under HighEd”

The scenario covers analysis of integration of CRM solutions focused on automation of processes specifically in HighEd (Full Fabric, Engage2Serve, Ellucian, Unifyed, Anthology).

Table 5.2 shows the analysis of their fitment by customised Infosys-based framework, described earlier in Section 5.1.2.

The **highest scores** for this scenario are assigned assigned to

- **Fitment of features**, since the solutions are designed specifically for HighEd recruitment process, though that doesn't guarantee 100% feature coverage;
- **Setup and infrastructure**, since the common approach with those solutions is to provide customised software edition built under specific customer's needs;
- **SMAC**, since all the shortlisted software is Cloud-based and has integrations with SMM. Some may not have separate mobile applications, but they're mobile friendly;
- **Staffing cost**, since all the customisations are done by the vendor for the extra set up fee. Support is provided within annual license terms.

The **lowest scores** are assigned to:

- **“Try before you buy”**, since this option is usually missed or covered by the access to generic demo instance;
- **Lack of iterative deployment**, since the whole requirements gathering and software customisation takes 4-6 month, before it's integrated into working flow;
- **Capital investment** due to high Total Cost of Ownership;
- **Control over software** due to no access to the code.

Table 5.2

Evaluation of “Niche CRM designed specifically under HighEd” scenario

Category	Criteria	Score (1-5)	Comments
FITMENT OF FEATURES	Do the applicable components have features specific to your business requirements?	4	'+' No need in much of customisation under specifically HighEd functionality

	Try before you buy. Do you have the opportunity to validate feature fitment without any payment?	1	'-' Mainly no option to try the free version or start with 1-2 seats and then scale. Customized package is provided for each client after payment
	Do you need all the components offered by the packaged CRM?	4	'+' The software edition is composed specifically under client's needs, thus high feature utilization is expected
PLATFORM FLEXIBILITY	Is the UI flexible and customizable?	3	'-' All the customisation are done by vendor at extra cost
	Is the code customizable?	3	'-' All the customisation are done by vendor at extra cost
SET UP AND INFRASTRUCTURE	What is the Time-to-Market for CRM deployment?	3	'-' First 4-6 months are spent on requirements elicitation and customised edition set up. The first value is received at the end of the 1st year
	Is iterative deployment process possible? Or the whole solution is to be set up at once?	1	'-' Some vendors may provide scenario-by-scenario automation, but the major efforts are spent in the first 4-6 month
	Is your current infrastructure enough to support the application, or does it need upgrades?	3	
	How much data needs to be migrated? Does the packaged CRM have import options?	4	
	Does the application meet your organization's security standards?	4	
	Is single sign-in possible? What is the version of Active directory used?	5	
SMAC – SOCIAL, MOBILE, ANALYTICS, CLOUD	Does the application have Social CRM capabilities?	5	
	Is the application extensible to mobile and tablet as well?	3	
	Does the CRM application have analytics to provide dashboards or reports for decision-making?	4	
	Is the application required in Cloud platform?	5	
COMMERCIAL IMPACT	Total Cost of Ownership	2	'-' Usually prepayment for min 3 years is expected '-' Fully dependent from vendor custom development (for ~\$200/hr)
	Training Cost. What are my training and change management costs?	4	'+' Basic training is usually available as a part of setuo fee

	Staffing Cost. Do I need to recruit new staff for the application maintenance?	5	'+' Most of integration and customisation is done by vendor and included into setup fee '+' No hiring of extra IT staff is needed '-' Product Owner for the solution should be assigned in UCU
UPGRADE AND SUPPORT	What is the impact of supporting software upgrade?	4	
	What is the packaged CRM application upgrade cycle?	4	
	Application Support	4	
REPUTATION AND CONTROL	Reputation on the market, proven track record on successful integrations	3	
	Control over software	2	

TCO for scenario “Niche HighEd CRM” (Table 5.3)

Total cost of ownership for this scenario is **\$ 349,000** over a period of **10 years**.

Assumptions for TCO calculation:

- The pricing is calculated as average for Full Fabric, Engage2Serve Recruitment, Unified, Slate;
- Most of the vendors from this category require setup fees in the range \$5K-\$10K for student recruitment functionality;
- Avg cost / hour for some customisations is \$150-\$200 / h;
- No separate IT staff in UCU is required for implementation and support;
- All the CRM solutions are cloud-based, no separate cost for hosting is needed;
- With the university growth, the student recruitment team may require some extra seats. Growth for up to 5 extra seats by the end of 10 years is projected.

Table 5.3

TOC for “Niche CRM designed specifically under HighEd” scenario

Year	1	2	3	4	5	6	7	8	9	10
Scenario 1 "Niche HighEd CRM"										
Software license										
Perpetual	\$ 30,000	\$ 30,000	\$ 30,000	\$ 32,500	\$ 32,500	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000
Subscription	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hardware										
Hardware costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Implementation										
One-time setup fee	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ad-hoc customisations	\$ -	\$ 2,000	\$ -	\$ 2,000	\$ -	\$ 2,000	\$ -	\$ 2,000	\$ -	\$ -
IT Staff to hire for implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Training										
One-time training cost	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Support										
IT Staff to hire for support	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Cost										
Annual	\$ 41,000	\$ 32,000	\$ 30,000	\$ 34,500	\$ 32,500	\$ 37,000	\$ 35,000	\$ 37,000	\$ 35,000	\$ 35,000
Cumulative	\$ 41,000	\$ 73,000	103,000	137,500	170,000	207,000	242,000	279,000	314,000	349,000

5.4 Scenario “CRM market leader”

The scenario covers analysis of integration of CRM solutions focused on automation of processes specifically in HighEd (HubSpot, Salesforce, MS Dynamics CRM, Oracle Service Cloud).

Table 5.4 shows the analysis of their fitment by customised Infosys-based framework, described earlier in Section 5.1.2.

The **highest scores** for this scenario are assigned assigned to

- **Fitment of features**, the solutions are usually overkilled with functionality, but this guarantees close to full feature coverage. All the solutions allows trial version or set of free seats;
- **Total cost of ownership** mainly due to discounted program offered by Salesforce or set of free features provided by HubSpot;
- **Reputation on the market;**

- **SMAC**, since all the shortlisted software is Cloud-based and has integrations with SMM. Some may not have separate mobile applications, but they're mobile friendly.

The **lowest scores** are assigned to:

- **IT staff**, since hiring of at least 1 Salesforce developer is needed to setup workflow and provide continuous support (not full-time at this stage);
- **Control over software** due to no access to the code.

Table 5.4

Evaluation of “CRM market leader” scenario

Category	Criteria	Score (1-5)	Comments
FITMENT OF FEATURES	Do the applicable components have features specific to your business requirements?	4	
	Try before you buy. Do you have the opportunity to validate feature fitment without any payment?	5	'+' Options to test on free version or start with minimal seats
	Do you need all the components offered by the packaged CRM?	3	'-' The solutions are highly overloaded with functionality
PLATFORM FLEXIBILITY	Is the UI flexible and customizable?	3	
	Is the code customizable?	4	'+' With IT professional with relevant expertise (e.g. Salesforce) in team wide range of customisation is available
SET UP AND INFRASTRUCTURE	What is the Time-to-Market for CRM deployment?	4	
	Is iterative deployment process is possible? Or the whole solution is to be set up at once?	4	
	Is your current infrastructure enough to support the application, or does it need upgrades?	3	
	How much data needs to be migrated? Does the packaged CRM have import options?	4	
	Does the application meet your organization's security standards?	4	
	Is single sign-in possible? What is the version of Active directory used?	5	
SMAC – SOCIAL,	Does the application have Social CRM capabilities?	5	

MOBILE, ANALYTICS, CLOUD	Is the application extensible to mobile and tablet as well?	3	
	Does the CRM application have analytics to provide dashboards or reports for decision-making?	5	
	Is the application required in the Cloud platform?	5	
COMMERCIAL IMPACT	Total Cost of Ownership	4	
	Training Cost. What are my training and change management costs?	4	
	Staffing Cost. Do I need to recruit new staff for the application maintenance?	3	At least 1-2 additional IT specialist are required for solution deployment customisation and support + dedicated Product Owner in UCU
UPGRADE AND SUPPORT	What is the impact of supporting software upgrades?	4	
	What is the packaged CRM application upgrade cycle?	4	
	Application Support	4	
REPUTATION AND CONTROL	Reputation on the market, proven track record on successful integrations	5	
	Control over software	2	

TCO for scenario “CRM market leader” (Table 5.5)

Total cost of ownership for this scenario is **\$ 107,400** over a period of **10 years**.

Assumptions for TCO calculation:

- Pricing models are too different for all enterprise CRM to make an average estimation. Salesforce specifically is taken for counting TCO for this scenario;
- Salesforce offers 10 free seats to HighEds within the “Power of Us Program”. After these 10 seats, Salesforce offers 75% discount for the next seats for HighEd;
- With the university growth, the student recruitment team may require some extra seats. Growth for up to 5 extra seats by the end of 10 years is projected;
- Edition is Cloud-based, no extra cost for hosting is needed;

- UCU doesn't have in-house Salesforce or any other CRM expertise, especially at setup stage. Third-party one-time consulting for \$10,000 is added to Implementation cost;
- Default Salesforce functionality may require some marketing extensions, projected up to \$5000 annually;
- At least one IT expert with Salesforce expertise would be required. Projectes his full-time assignment to this project in the first year (salary \$1,500), then it goes down to 10% of his time max;
- Salesforce has an extensive database of educational materials, so no extra fees for training are expected.

Table 5.5

TOC for "CRM market leader" scenario

Year	1	2	3	4	5	6	7	8	9	10
Scenario 2 "Market Leader"										
Software license										
Perpetual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subscription	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
Hardware										
Hardware Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Implementation										
One-time setup fee	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ad-hoc customisations, extensions cost	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
IT Staff to hire for implementation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Training										
One-time training cost	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Support										
IT Staff to hire for support	\$ 18,000	\$ 3,000	\$ 1,800	\$ 1,800	\$ 1,800	\$ 1,800	\$ 1,800	\$ 1,800	\$ 1,800	\$ 1,800
Total Cost										
Annual	\$ 33,000	\$ 8,000	\$ 6,800	\$ 7,800	\$ 7,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800
Cumulative	\$ 33,000	\$ 41,000	\$ 47,800	\$ 55,600	\$ 63,400	\$ 72,200	\$ 81,000	\$ 89,800	\$ 98,600	107,400

5.5 Scenario “In-house CRM development”

The scenario covers analysis of in-house CRM development (could be from scratch, could be on top of iCube in case of its code acquisition).

Table 5.6 shows the analysis of their fitment by customised Infosys-based framework, described earlier in Section 5.1.2.

The **highest scores** for this scenario are assigned assigned to

- **Fitment of features**, since the solutions are designed specifically for HighEd recruitment process, though that doesn’t guarantee 100% feature coverage;
- **Control over software.**

The **lowest scores** are assigned to:

- **“Try before you buy”** and **“Time-to-Market”**, since earliest milestone for the first release would be after 12-18 months after start of development;
- **Staffing Cost**
- **Capital investment** due to high Total Cost of Ownership;
- **Reputation on the market.**

Table 5.6

Evaluation of “In-house CRM development” scenario

Category	Criteria	Score (1-5)	Comments
FITMENT OF FEATURES	Do the applicable components have features specific to your business requirements?	5	'+' Software design under specifically UCU needs
	Try before you buy. Do you have the opportunity to validate feature fitment without any payment?	2	'-' No option to validate the software before decision making
	Do you need all the components offered by the packaged CRM?	5	
PLATFORM FLEXIBILITY	Is the UI flexible and customizable?	5	
	Is the code customizable?	5	

SET UP AND INFRASTRUCTURE	What is the Time-to-Market for CRM deployment?	2	'- Big Time-to-Market: first results on processes automation are expected in 6-8 months
	Is iterative deployment process possible? Or the whole solution is to be set up at once?	4	
	Is your current infrastructure enough to support the application, or does it need upgrades?	3	
	How much data needs to be migrated? Does the packaged CRM have import options?	4	
	Does the application meet your organization's security standards?	4	
	Is single sign-in possible? What is the version of Active directory used?	5	
SMAC – SOCIAL, MOBILE, ANALYTICS, CLOUD	Does the application have Social CRM capabilities?	5	
	Is the application extensible to mobile and tablet as well?	3	
	Does the CRM application have analytics to provide dashboards or reports for decision-making?	4	
	Is the application required in the Cloud platform?	5	
COMMERCIAL IMPACT	Total Cost of Ownership	2	'+' No limitation for number of user's seat
	Training Cost. What are my training and change management costs?	4	
	Staffing Cost. Do I need to recruit new staff for the application maintenance?	2	'-' Team of 3-4 IT professionals are needed + dedicated Product Owner assigned. IT market in Ukraine is hot, recruiting will be close to impossible
UPGRADE AND SUPPORT	What is the impact of supporting software upgrades?	3	
	What is the packaged CRM application upgrade cycle?	3	
	Application Support	2	
REPUTATION AND CONTROL	Reputation on the market, proven track record on successful integrations	2	
	Control over software	5	

TCO for scenario “In-house development” (Table 5.7)

Total cost of ownership for this scenario is **\$ 347,100** over a period of **10 years**.

Assumptions:

- Minimum setup of the development team is defined as 1 Backend Developer, 1 Frontend Developer, 0.5 Business Analysts and 0.2 Tester. Total team cost is \$8000 / month.
- Active development phase is projected as 2 years, after that the support mode will require 0.5 of Fullstack Developer for bug fixing and support activities.
- Cloud hosting is recommended as an alternative to hardware, projected cost is \$100 / month.

Table 5.7

TOC for “In-house development” scenario

Scenario 2 "In-house development"										
Software license										
Perpetual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subscription	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hardware										
Hardware Costs (Cloud hosting)	\$ 600	\$ 900	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Implementation										
One-time setup fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ad-hoc customisations, extensions cost	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IT Staff to hire for implementation	\$ 96,000	\$ 96,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Training										
One-time training cost	\$ -									
Support										
Support costs	\$ -		\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000
Total Cost										
Annual	\$ 96,600	\$ 96,900	\$ 19,200	\$ 19,200	\$ 19,200	\$ 19,200	\$ 19,200	\$ 19,200	\$ 19,200	\$ 19,200
Cumulative	\$ 96,600	\$ 193,500	\$ 212,700	\$ 231,900	\$ 251,100	\$ 270,300	\$ 289,500	\$ 308,700	\$ 327,900	\$ 347,100

5.6 Comparing Scenarios

Table in Appendix 1 shows the detailed summary of scenario comparison based on the weights assigned to each evaluation criteria. The weights may vary depending on internal (e.g. changes in team, financial status of university) and external factors (e.g. release of disruptive new CRM solution on the market). It's important to set up a re-usable framework for analysis of scenarios, in order to be able to adjust analysis anytime before making the significant investment.

At the moment of this project, based on the defined weights the total scores for each scenario are the following:

- Scenario “Niche CRM designed specifically under HighEd”: **494 scores**
- Scenario “CRM market leader”: **581 scores**
- Scenario “In-house CRM development”: **495 scores**

Fig. 5.1 and Fig. 5.2 are showing Total Cost of Ownership for scenarios - distributed annually and cumulative one.

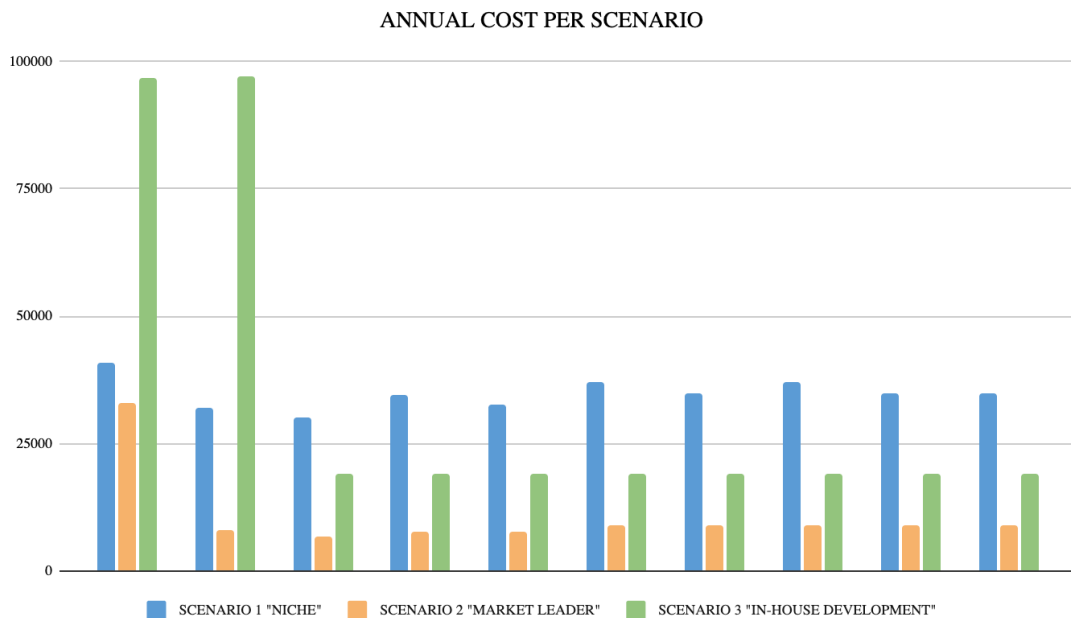


Fig. 5.1 Annual cost per scenario

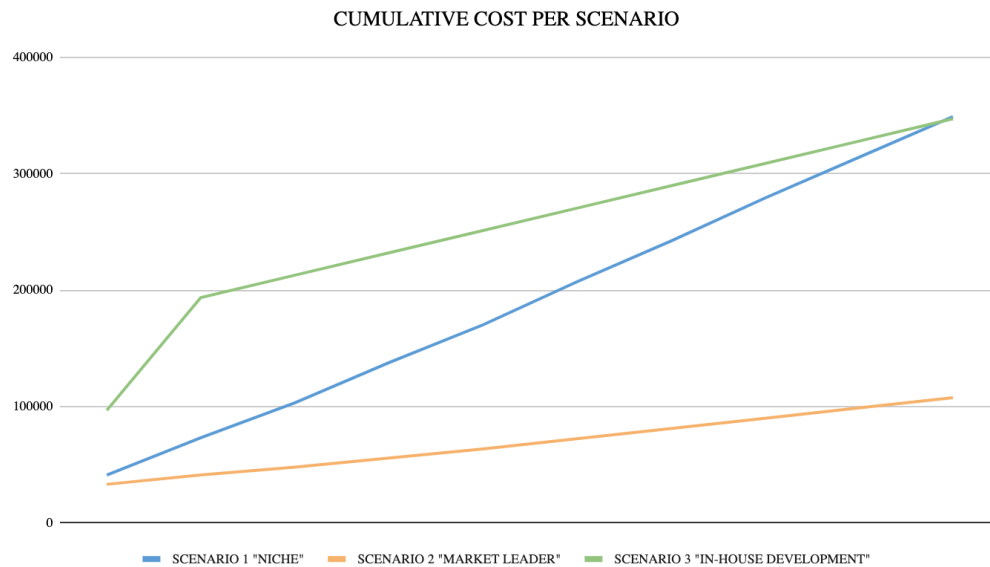


Fig. 5.2 Cumulative cost per scenario

Based on the comparison of 3 scenarios, the recommendation would be to proceed with deeper evaluation of the scenario “CRM market leader”.

5.7 CRM Integration Roadmap

What would be the next steps to move forward with the recommended scenario?

One of the basic approaches to selection of ERP was suggested by Verville as a disciplined selection process to a manageable level.

The MERPAP consists of planning, which is a continuous exercise throughout the selection process; information search, which provides information used in subsequent steps; selection, which includes shortlisting vendors and technologies; evaluation, which includes vendor, functional and technical evaluation of potential candidates in order to make a choice, which eventually culminates into business and legal negotiations [16].

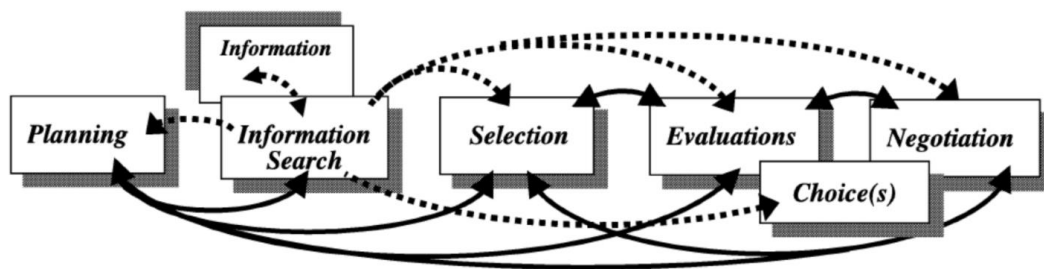


Fig. 5.3 MERPAP, ERP selection process [16]

Based on MERPAP at this point we're in the middle of the Evaluation stage. The final choice should be made after completion of evaluations, or in case of unsuccessful Evaluations stages, the Selection stage with scenario analysis should be repeated.

The suggested roadmap for the next steps is shown on Fig. 5.4.

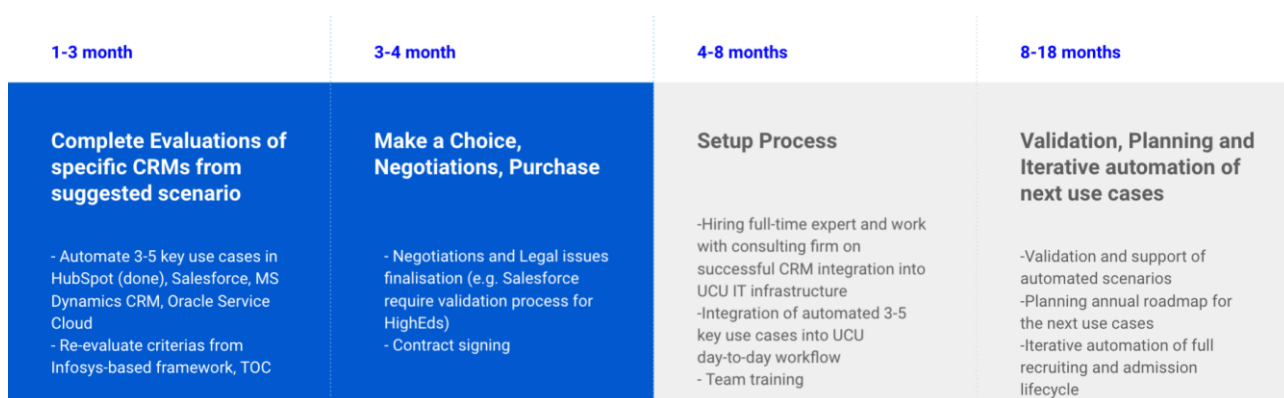


Fig. 5.4 Roadmap for next phases on CRM integratgion

Risk analysis and risk mitigation strategies

Stakeholders highlighted the following **risks of CRM integration**:

- 1) Without a proper adoption and training process, staff's perception of the CRM system could be seen as an "another extra bureaucracy step".
- 2) Onboarding process to the CRM should be easy. The team is changing continuously.

- 3) Lack of Product Owner expertise with relevant CRM in the team.
- 4) CRM integration could lead to more process-orientation and less flexibility in approaches, hurting the entrepreneurship spirit in employees.
- 5) Student recruitment dept automated their process through CRM, but other depts will stay with their own inefficient approaches.

The risk mitigation strategy should include:

- Iterative approach to the automation of use cases;
- Thoroughly analyse efficiency of each process before automation, simplify if possible;
- Develop onboarding assets for newcomers in the department, to guarantee consistent and in-time onboarding to CRM-based processes;
- Clearly define Product Owner role in team and make sure it's backed up;
- For the student recruitment team to become advocates of process automation and advertise it to other departments to get buy-in for further automation of UCU Student Journey.

5.7 Conclusions

Based on the analysis of UCU student recruitment process, the following conclusions were made:

- 1) Methodology for CRM analysis in this project is based on preliminary market analysis resulted into shortlist, clustering the shortlisted CRM solutions to 3 scenarios:
 - a) Niche CRM designed specifically under HighEd
 - b) CRM market leader
 - c) In-house CRM Development
- 2) Framework for analysis of 3 selected scenarios was built on top of Infosys evaluation framework and Total Cost of Ownership calculation for the analysis of Commercial Impact. "CRM market leader" got the highest

score based on this framework. HubSpot and Salesforce solutions from this category were analysed in more detail.

- 3) High-level roadmap and risk mitigation strategies were shared for the scenario with the highest score.

6 CONCLUSIONS

HighEd as an industry is going through a massive transformation. For this project it was important to study not only the current state of HighEd, but also what it's going to be like within the next 5-10 years and the role of technology in this new edition. The main drivers of domain transformation are adoption of customer-focused and “lifelong learning” paradigms, availability of big data for decision making, COVID reality. IT starts playing a more significant role in higher institutions, it's role is supposed to be switched from support function to a Tech Transformation role.

The project was structured as a management consulting project and that brought some challenges related to time and scope constraints, lack of good domain and organisation's understanding by the author of this work. Thus the first project stage required more efforts on research and communication with stakeholders, then it might require from a Subject Matter Expert.

UCU, unlike many other higher educational institutions, has clearly defined and consistent organisational assets such as mission statement, vision, strategy 2025 cascaded to strategic projects and goals. Those assets along with insights from interviews with stakeholders allowed us to analyse the value of Student Cross-life-Cycle CRM integration for UCU and how it might contribute to the UCU business prosperity.

UCU student recruitment process targets clearly defined audiences, top talents from school graduates. The major pain of the student recruitment department is the manual nature of most processes. First attempts in process automation are taken with iCube software developed specifically under UCU, with its pros and cons. iCube software doesn't cover all the min functionality needed for an effective student recruitment process. Thus the alternative scenarios are considered in this project.

As a result of market research and 25+ CRM solutions analysis, three scenarios were synthesized and evaluated, one recommended for the next steps. It was important in this project to now just do a one-time analysis and share findings, but deliver

reusable frameworks for scenario analysis. In case of some significant changes in internal or external factors, the in-house working group would be able to adjust the evaluation analysis under their needs.

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APPENDIX 1

Category	Criteria	Weight	SCENARIOS					
			Niche CRM designed specifically under HighEd		Cross-Life-Cycle CRM, market leader		In-house CRM development	
		1-10	Score (1-5)	Total	Score (1-5)	Total	Score (1-5)	Total
FITMENT OF FEATURES	Do the applicable components have features specific to your business requirements?	7	4	28	4	28	5	35
	Try before you buy. Do you have the opportunity to validate feature fitment without any payment?	8	1	8	5	40	2	16
	Do you need all the components offered by the packaged CRM?	4	4	16	3	12	5	20
PLATFORM FLEXIBILITY	Is the UI flexible and customizable?	4	3	12	3	12	5	20
	Is the code customizable?	6	3	18	4	24	5	30
SET UP AND INFRASTRUCTURE	What is the Time-to-Market for CRM deployment?	7	3	21	4	28	2	14
	Is iterative deployment process possible? Or the whole solution is to be set up at once?	7	1	7	4	28	4	28
	Is your current infrastructure enough to support the application, or does it need upgrades?	5	3	15	3	15	3	15
	How much data needs to be migrated? Does the packaged CRM have import options?	6	4	24	4	24	4	24
	Does the application meet your organization's security standards?	7	4	28	4	28	4	28

	Is single sign-in possible? What is the version of Active directory used?	7	5	35	5	35	5	35		
SMAC – SOCIAL, MOBILE, ANALYTICS, CLOUD	Does the application have Social CRM capabilities?	7	5	35	5	35	5	35		
	Is the application extensible to mobile and tablet as well?	5	3	15	3	15	3	15		
	Does the CRM application have analytics to provide dashboards or reports for decision-making?	9	4	36	5	45	4	36		
	Is the application required in the Cloud platform?	6	5	30	5	30	5	30		
COMMERCIAL IMPACT	Total Cost of Ownership	10	2	20	4	40	2	20		
	Training Cost. What are my training and change management costs?	5	4	20	4	20	4	20		
	Staffing Cost. Do I need to recruit new staff for the application maintenance?	8	5	40	3	24	2	16		
UPGRADE AND SUPPORT	What is the impact of supporting software upgrade?	7	4	28	4	28	3	21		
	What is the packaged CRM application upgrade cycle?	5	4	20	4	20	3	15		
	Application Support	5	4	20	4	20	2	10		
MISC	Reputation on the market, proven track record on successful integrations	6	3	18	5	30	2	12		
	Control over software	5	2	10	2	10	5	25		
TOTAL:						494		581		495