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ВЕСТНИК

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В 2016 году для развития и улучшения качества жизни казахстанцев был создан частный Благотворительный фонд «Халык». За годы своей деятельности на реализацию благотворительных проектов в областях образования и науки, социальной защиты, культуры, здравоохранения и спорта, Фонд выделил более 45 миллиардов тенге.

Особое внимание Благотворительный фонд «Халык» уделяет образовательным программам, считая это направление одним из ключевых в своей деятельности. Оказывая поддержку отечественному образованию, Фонд вносит свой посильный вклад в развитие качественного образования в Казахстане. Тем самым способствуя росту числа людей, способных менять жизнь в стране к лучшему – профессионалов в различных сферах, потенциальных лидеров и «великих умов». Одной из значимых инициатив фонда «Халык» в образовательной сфере стал проект *Ozgeris powered by Halyk Fund* – первый в стране бизнес-инкубатор для учащихся 9-11 классов, который помогает развивать необходимые в современном мире предпринимательские навыки. Так, на содействие малому бизнесу школьников было выделено более 200 грантов. Для поддержки талантливых и мотивированных детей Фонд неоднократно выделял гранты на обучение в Международной школе «Мирас» и в *Astana IT University*, а также помог казахстанским школьникам принять участие в престижном конкурсе «*USTEM Robotics*» в США. Авторские работы в рамках проекта «Тәлімгер», которому Фонд оказал поддержку, легли в основу учебной программы, учебников и учебно-методических книг по предмету «Основы предпринимательства и бизнеса», преподаваемого в 10-11 классах казахстанских школ и колледжей.

Помимо помощи школьникам, учащимся колледжей и студентам Фонд считает важным внести свой вклад в повышение квалификации педагогов, совершенствование их знаний и навыков, поскольку именно они являются проводниками знаний будущих поколений казахстанцев. При поддержке Фонда «Халык» в южной столице был организован ежегодный городской конкурс педагогов «*Almaty Digital Ustaz*».

Важной инициативой стал реализуемый проект по обучению основам финансовой грамотности преподавателей из восьми областей Казахстана, что должно оказать существенное влияние на воспитание финансовой

грамотности и предпринимательского мышления у нового поколения граждан страны.

Необходимую помощь Фонд «Халык» оказывает и тем, кто особенно остро в ней нуждается. В рамках социальной защиты населения активно проводится работа по поддержке детей, оставшихся без родителей, детей и взрослых из социально уязвимых слоев населения, людей с ограниченными возможностями, а также обеспечению нуждающихся социальным жильем, строительству социально важных объектов, таких как детские сады, детские площадки и физкультурно-оздоровительные комплексы.

В копилку добрых дел Фонда «Халык» можно добавить оказание помощи детскому спорту, куда относится поддержка в развитии детского футбола и карате в нашей стране. Жизненно важную помощь Благотворительный фонд «Халык» оказал нашим соотечественникам во время недавней пандемии COVID-19. Тогда, в разгар тяжелой борьбы с коронавирусной инфекцией Фонд выделил свыше 11 миллиардов тенге на приобретение необходимого медицинского оборудования и дорогостоящих медицинских препаратов, автомобилей скорой медицинской помощи и средств защиты, адресную материальную помощь социально уязвимым слоям населения и денежные выплаты медицинским работникам.

В 2023 году наряду с другими проектами, нацеленными на повышение благосостояния казахстанских граждан Фонд решил уделить особое внимание науке, поскольку она является частью общественной культуры, а уровень ее развития определяет уровень развития государства.

Поддержка Фондом выпуска журналов Национальной Академии наук Республики Казахстан, которые входят в международные фонды Scopus и WoS и в которых публикуются статьи отечественных ученых, докторантов и магистрантов, а также научных сотрудников высших учебных заведений и научно-исследовательских институтов нашей страны является не менее значимым вкладом Фонда в развитие казахстанского общества.

С уважением, Благотворительный Фонд «Халык»!

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FURTHER IMPROVEMENT OF EDUCATIONAL PROGRAM IT MANAGEMENT AT ASTANA IT UNIVERSITY

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Abstract. This paper is devoted to the analysis of existing IT Management undergraduate educational program and suggestions of upgrading university’s program at Astana IT University (AITU) in highly competitive field of higher education. The programs from different countries were reviewed for understanding current landscape. The applied methodology for research is comparative qualitative analysis of existing “IT Management” educational programs in universities and educational institutions which is gathered from open sources and official websites. The drawn conclusions are the validated hypotheses based on research and analysis of other similar to “IT Management” educational programs which claims the change of existing curriculum at AITU and attract more professionals from industry as instructors to specialized courses at university.

Keywords: educational program; higher education, IT management; IT project manager; IT manager

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ASTANA IT UNIVERSITY-ДЕ “АТ-МЕНЕДЖМЕНТ” БІЛІМ БЕРУ БАҒДАРЛАМАСЫН ОДАН ӘРІ ЖЕТІЛДІРУ

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Аннотация. Бұл мақала IT-менеджмент бакалавриатының қолданыстағы білім беру бағдарламасын талдауға және жоғары бәсекеге қабілетті жоғары білім беру саласында Астана IT Университетінде (АТУ) университет бағдарламасын жетілдіру бойынша ұсыныстарға арналған. Қазіргі ландшафтты түсіну үшін әртүрлі елдердің бағдарламалары қаралды. Зерттеудің қолданбалы әдістемесі – ашық дереккөздерден және ресми веб-сайттардан жиналған университеттер мен оқу орындарындағы қолданыстағы «IT-менеджмент» білім беру бағдарламаларының салыстырмалы сапалы талдауы болып табылады. Жасалған қорытындылар АИТУ-дағы қолданыстағы оқу жоспарының өзгеруін және университеттегі мамандандырылған курстарға нұсқаушы ретінде өндірістен көбірек мамандарды тартуды талап ететін «IT-менеджмент» білім беру бағдарламаларына ұқсас басқа да зерттеулер мен талдауларға негізделген дәлелденген гипотеза болып табылады.

Түйін сөздер: білім беру бағдарламасы; жоғары білім, IT менеджмент; IT жоба менеджері; IT менеджері

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ДАЛЬНЕЙШЕЕ СОВЕРШЕНСТВОВАНИЕ ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЫ «ИТ-МЕНЕДЖМЕНТ» В ASTANA IT UNIVERSITY

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Аннотация. Данная статья посвящена анализу существующей образовательной программы бакалавриата «ИТ Менеджмент» и предложениям по модернизации университетской программы в Astana IT University (АИТУ) в высококонкурентной сфере высшего образования. Были рассмотрены образовательные программы из разных стран для понимания текущей ситуации. Выбранная методология исследования – сравнительный качественный анализ существующих образовательных программ «ИТ Менеджмент» в ВУЗах и образовательных учреждениях, собранных из открытых источников и официальных сайтов. Сделанные выводы являются обоснованными гипотезами, основанными на исследованиях и анализе других образовательных программ, аналогичных «ИТ Менеджменту», которые предполагают изменение существующей учебной программы в АИТУ и привлечение большее количество специалистов из индустрии в качестве преподавателей на профилирующие дисциплины в университете.

Ключевые слова: образовательная программа; высшее образование, ИТ менеджмент; менеджер ИТ проектов; ИТ менеджер

Introduction

Nowadays our country is realizing state programs on implementation of Industry 4.0 that aims to the concept of production's organization, where additional value is provided through the integration of physical objects, processes and digital technologies (Official Information Source of the Prime Minister of the Republic of Kazakhstan, 2020). *The relevance of research* is the intersection of management and business-related studies and technology that is a huge driving force for innovation, state economy growth and positive societal impact on digital literacy and technology introduction.

Moreover, the use of project management in an enterprise allows to avoid a number of negative factors (increased costs and time for creation of a finished product) and increase the positive effects of its use (increased efficiency,

improved investment climate, ensuring innovation, modernization equipment and technologies). In today's world project management has become one of the most powerful tools for managing the creation of new services and products not only for an individual enterprise, but also for the whole socio-economic system of the state. Therefore, it could be stated that currently almost no company (public or commercial) does without the practice of applying the methods and means of project management.

Development of educational programs in higher education system for IT managers should include essential elements of project management and has undergone substantial changes in recent years in response to the challenges of dynamic economy, job market and technological revolution.

There is a multi-level system of higher education at the University, consisting of a Bachelor's degree, a Master's degree and a Doctoral degree. Thus, the first Bachelor's degree in IT Management was graduated in 2022. In 2021 the training of specialists of the highest qualification through the scientific and pedagogical master degree program Project Management has begun. In 2023 the first enrollment in the doctoral program of educational program Project Management has been realized.

For the purposes of this research, the key hypotheses are: H1) "IT Management" educational program of AITU is unique and offers to students developed skills and competencies necessary to work in interdisciplinary projects in industry"; H2) "IT Management" educational program of AITU requires amendment to the existing curriculum and introduce few disciplines on Finance, FinTech and Blockchain Technology". While doing the research, authors aim to validate these two and draw conclusions and develop recommendations on AITU IT Management program.

Materials

In recent years, there is an increase in the influence of the use of both technological and organizational management led to the improvement and development of project management. Also, improvement of project management methods and techniques affects awareness of the need to improve the quality of work, reduce production costs, reduce project implementation time. This leads to the expansion of theoretical knowledge and the creation of new requirements in the system of standards preparing future IT managers.

In view of new and relevant changes in the global and digital world with the rapid development of information technologies, the importance of the need for the presence of IT specialties and specialists in all sectors of the economy is increasing. This contributes to the continued increase in demand for IT professionals around the world, and Kazakhstan is no exception.

The relevance of the educational program plays a key role in the preparation of highly qualified specialists. At the university, all educational programs related to IT technologies require constant modernization due to the rapid pace of development of IT technologies.

Higher education nowadays is seen not only as a tool of delivering professionally educated human resources to the society. Sady et al. suggested that university curricular should be adjusted to also train skills related to ‘social responsibility and sustainability as well as providing multiple possibilities for the social and ecological engagement of students’ (Sady et al., 2019). The convergence model of education, proposed by Deev et al. (2021), provided sustainability transferring to digital economy identifies 3 states of the educational program: creation or modernization, implementation, and update along with the assessment of educational programs following the ‘requirements of the innovative and digital economy, employers, new professional and educational standards...’. Daneykin et al. (2016) reported that top universities ranked in the Times Higher Education-QS 2013–2014 QS offer wide range of offer not only Bachelor’s and Master’s programs in Sustainable Development, but also shorter trainings like summer workshops or certificate courses that cover wide range of sustainable development elements from technical aspects to narrower fields like smart architecture. Thus, there is a clear trend in educational programs development at universities worldwide towards the sustainability issues.

Despite the acknowledgement of the need for modernization of educational programs, there are challenges to implementing this strategy at universities. For example, Budrina established that most of IT related educational programs in universities of the Perm region in Russia had a focus either on professional skills of the IT industry, or training scientists in the IT field, with low rates of covering general professional and cultural competencies (Budrina et al., 2020). This poses additional difficulties for students who might be changing their educational path at tertiary level or career plans after graduation. According to Tuchina et al. (2020), almost a quarter of the first-year Bachelor level student respondents of Kharkov University Foreign Language educational program chose their major due to ‘the necessity of having some diploma’. This means that having chosen a certain educational path, students do not train sufficiently skills useful in all professional areas such as teamwork, creativity, communication, and negotiation competencies.

In modern conditions, especially with slow recovery of modern economy from COVID-19, the use of IT project management plays an important role in the development of the country. IT project management helps optimally use available resources, reduce production costs and increase the competitiveness of companies. There is growing interest in this activity. However, a significant disadvantage there is a shortage of specialists who can practically apply knowledge. The use of IT project management allows to observe positive dynamics not only in certain industries, but for the country as a whole.

In Kazakhstan, all educational programs are created based on National system of qualifications (NSQ), which is an essential set of legal and institutional demand and supply of qualifications that ensure the connection of industries, the labor market and the system of vocational education and training. NSQ consists of

following elements: National Qualifications Framework; Industry Qualifications Framework (IQF); Professional Standards (PS); Educational Programs; Specialist Certifications. Educational Programs developed based on Professional Standards. National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” approved 582 PS (as of October 2021), of which 31 PS are initiative, 5 PS developed as part of the financing of the European Bank for Reconstruction and Development and 546 PS within the framework of the Project of the Ministry of Labor and Social Protection of the Republic of Kazakhstan (National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken”, 2022).

Thus, any university in Kazakhstan that has Bachelor programs for IT Management should create educational programs taking into account existing professional standards for this program. Table 1 shows necessary competences required for IT projects and managers.

Table 1 - Profession card “IT project manager”

Code	2512-1-003	
Group Code	2512-1	
Profession	IT project manager	
Other possible job titles:	-	
Classification level according to IQF:	5	
The main purpose of the activity	Defining a group of processes in the project being developed	
Labor functions	Mandatory labor functions	1. Interaction between management process groups
		2. Resource management for project implementation
	Additional labor functions	-
<i>Source:</i> National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken”		

Moreover, management education needs not only hard skills but also soft skills. Some Business Schools tried to implement the United Nations Principles for Responsible Management Education (PRME). However, PRME is more like a desired state than the reality. Fundamental rethinking of existing educational programs should be considered (Millar & Price, 2018).

In addition, modern managers should have emotional intelligence. Emotional state of the team affects productivity of the project. Thus, students need to understand these impact emotions on the teams especially when these teams are virtual (Bushuyev et al., 2020).

Astana IT University was founded in 2019 and from the beginning it was decided that the university will be preparing Bachelors in IT field. These educational

programs for preparation included IT Management. This undergraduate program needs constant improvement based on changing requirements from business environment through preparation for professional industry certifications.

Methodology

Higher Education Institutions (HIE) need to adapt their educational programs based on rapid development of technologies. Authors chose comparative qualitative analysis for evaluating undergraduate educational program “IT Management” at Astana IT University. This approach was chosen for understanding better existing situation and comparing current program with professional standards and competences as well as with programs from other HEIs described in reviewed articles. All the secondary data for research was gathered from open sources such as university websites.

IT Management is relatively new profession. Thus, this preliminary study tries to highlight evolving nature of this profession. Existing educational program “IT Management” at Astana IT University was analyzed and compared with existing programs and professional standards. Analysis was mainly content based due to limitations of access to some documents and recent development of such programs. Before taking educational program for review, completeness of the program was checked based on similarity of different educational programs “IT Management”.

Educational program “IT Management” provides students with a deeper understanding of the tools and methods of project management in relation to process improvement projects with the help of IT. The program is based on the industry standard for existing certifications for project management such Project Management Institute (PMI) and International Project Management Association (IPMA). It offers best practices for planning, scheduling, budgeting, human resources, quality, procurement, communication, and risk management. Companies are in demand of IT project managers who can connect business stakeholders and developers to ensure IT projects are completed before the deadlines, minimum required costs and highest quality. IT project managers run project from imitation till completion with transferring ownership to customers. They participate in developing budgets, calculating resources, organize teams, manage development and implementation, and communicate with stakeholders to ensure project objectives are aligned with their needs (Astana IT University, 2022).

Results and discussion

Currently, project management is considered a recognized methodology for investment activities. Due to the continuous development of information technology, there is a constant creation and implementation of IT projects, both in corporations, medium and small businesses. At the same time, several IT projects can be implemented simultaneously in the company (Shamsutdinov, 2006).

Despite the need for IT managers, the educational program IT Management appeared relatively recently, due to the rapid development of the IT industry. It is not so easy for existing universities to change and add new majors to the curriculum

due to the inertia of academic education and the slow speed of decision-making, which must be formalized according to existing requirements.

Comparison of this program relied more on foreign universities due to the fact that development in this specialty abroad began much earlier. International University of Applied Sciences offers Bachelor in Business and IT degree, which is similar to the discussed program. This program benefits include flexibility of online and on campus classes, duration of studying, accreditation from German Accreditation Council and practice-oriented studies (International University of Sciences, n.d.).

Another assessment of the similar program is local educational program that trains Innovation Managers at International University of Information Technology. The program was approved in 2020. Under this program, innovation managers are trained. According to the program, this is a specialist who determines innovative solutions for the implementation of business strategies and forms business requirements for the development of new products, advises and instructs projects, accompanies the launch of the product and controls its quality, analyzes the market, promotes the product and manages expectations consumers, ensures their satisfaction, calculates the effectiveness of investments and conducts financial analysis, presents the product at various venues (exhibitions), and also promotes a cooperative innovation culture in the company. The educational program “Innovation Management” allows you to train specialists at the intersection of management, information technology, economics, marketing and finance (International University, n.d.).

This Educational program “Innovation Management” teaches students the theory and practice of managing innovative processes and solutions. Key areas are new product development, strategic marketing, sales and after-sales management, business intelligence, open innovation and entrepreneurship. The object of research is a new process of product and business development with common elements of information systems architecture, development of common abilities to select and develop a technology for the implementation and further commercialization of the results of scientific research development with an emphasis on corporate and financial development.

The educational program “Innovation Management” was developed on the basis of an analysis of the labor functions of specialists in the field of innovation management.

Due to the fact that IT Management implies existing management experience, some universities offer doctoral programs in this specialty which shows a slow adaptation to a rapidly changing business environment (Steenkamp, 2010). This particular program highlights the benefits of the program through flexible schedules, a standardized research process, and the quality of the learning process.

The analysis carried out shows that IT Management undergraduate educational program has the potential for development and should respond more

quickly to changes in the business environment.

According to AITU program, ITM graduate must be able to create and read project documentation in order to act as a link in the project team. More often he plays the role of PM (project manager) of the project and he is held responsible for the success of the project. Future graduates of this specialty can play the roles of a business analyst, system architect, product manager, sales force consultant, and sales force developer. If the graduate gets the required IPMA certification, it gives a narrow understanding of IT projects. Based on the characteristics of an IT project, a specialist must know and be able to apply various approaches such as SCRUM, Kanban, XP and other agile frameworks and practices.

As part of a project team, a graduate can work as a PM software or IT operation manager. Depending on this, some disciplines could be added to the educational program. Suggested new course is “Digital Economy” that will give a knowledge about working on online platforms with AI Technologies, Blockchain and Cryptocurrencies, Internet of Things IoT, Digital Startups. Such course will prepare new specialists for government program “Digital Kazakhstan” (Digital Kazakhstan, n.d.).

Moreover, an IT specialist must master numerous skills and abilities of an IT professional. One of the successful skills is the ability to create any IT strategy, which is designed in accordance with the development of the enterprise and its main goals. The success of an IT project is based on measurable performance indicators of the enterprise. Since the field of information technology is complex, an understanding of the levels of management associated with the use of information technology is necessary for the successful and correct implementation of an IT strategy. Therefore, the change and development of the IT strategy is reflected in the entire activity of the company.

The main activities of the IT strategy are: increasing production efficiency by increasing automated processes; cost reduction; ensuring compliance of information technologies with business processes, reliability and safety of their use.

When the development process has come to work on the main functionalities of the IT project and its team may have the following composition: a project manager; a business analyst with a wider range of tasks than a manager has; UX/UI designer; developers; development team leader (Team Lead); system architect who develops the product structure; testing specialist; DevOps-liasion between development and operations, worked with the network and product deployment.

Out of these eight roles in the team mentioned above, five roles can be played by an ITM specialist, due to his or her versatility and preparedness for these roles. The IT project manager is the person on whom all communications, decisions, final and phased responsibility and reporting on the project are delegated.

Each of the stages of the implementation of an IT project, starting with the relationship with the business sector and design, implementation, control, analysis,

the ITM specialist must competently and functionally interact with all project stakeholders based on standardized approaches.

Therefore, university can improve the educational program, depending on the specialization, by adding the “ITIL Foundation” course. ITIL stands for IT Infrastructure Library (an information technology infrastructure library with subsequent certification in this subject. It expands the uniformity of IT services in helpdesk systems that support the ITSM approach (Stein et al., 2005).

Apart from adding new courses for the students, it is recommended to stimulate instructors for achieving advanced training and pass exams with successful professional certifications such as IPMA certification for teaching staff of the ITM department (72 hours); 2. ITIL foundation certification (72 hours); COBIT foundation certification (72 hours). This approach would encourage teaching staff to prepare ITM students for industry accepted certifications and it will give competitive edge to students of AITU on the global market.

Conclusion

Regardless of the name of the IT Management educational programs, most undergraduate programs last from 3 to 4 years of study and consist of general education and major disciplines, which include disciplines related to information technology and business management.

Based on the analysis, authors consider it necessary to introduce some additional courses of FinTech: such as Digital economy, Blockchain and Quantum computing, Financial Technology Platforms, Payment Systems and Networks, Virtual Currencies. These courses will increase employability of future ITM graduates of Astana IT University. To preserve the three-stage system of higher education, integration between the ITM educational program and the postgraduate program Project Management is further required.

Another recommendation is that starting from the first year, university should help students in the development of interdisciplinary projects, with the participation of students of all specialties, for the implementation of full-fledged projects for participation in Hackathons and Olympiads for residency in the Astana Hub.

Instructors with industry recognized certificates will teach best practices to their students and prepare their respective courses with relevant and updated knowledge. This tactic will allow university to keep its ITM educational program viable and attractive for new applicants and IT companies.

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МАЗМҰНЫ

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