

PROJECT-BASED MANAGEMENT OF DIGITAL TRANSFORMATION IN HIGHER EDUCATION: SUCCESS FACTORS AND PERFORMANCE EVALUATION

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Abstract: Digital transformation has become an important issue for higher education institutions seeking to improve their management processes, educational services, and interaction with students. However, introducing new technologies does not necessarily lead to the expected results. Digital initiatives may face difficulties related to unclear objectives, limited resources, insufficient staff preparation, and resistance to organisational change. This article examines how project management principles can support the planning, implementation, and evaluation of digital transformation in higher education. Based on an analysis of project management guidance and research on digital transformation in universities, the article proposes a conceptual six-stage model covering project initiation, planning, risk and change management, implementation, monitoring and control, and evaluation and sustainability. It also identifies four factors that may influence project success: strategic alignment, stakeholder engagement, risk and change management, and performance measurement. The article distinguishes between delivering a technological solution and achieving the intended organisational benefits. It argues that digital transformation should be managed as a structured organisational change initiative rather than as a purely technical task. The proposed model provides a practical starting point for universities planning digital transformation projects, although its effectiveness requires further empirical testing.

Keywords: digital transformation, higher education, project management, project life cycle, stakeholder engagement, risk management, performance evaluation.

Аннотация: Цифровая трансформация стала важным направлением развития высших учебных заведений, стремящихся совершенствовать управленческие процессы, образовательные услуги и взаимодействие со студентами. Однако внедрение новых технологий не всегда приводит к ожидаемым результатам. Цифровые инициативы могут сталкиваться с проблемами, связанными с недостаточно чёткими целями, ограниченными ресурсами, недостаточной подготовкой сотрудников и сопротивлением организационным изменениям. В статье рассматривается, как принципы проектного управления могут способствовать планированию, реализации и оценке цифровой трансформации в высшем образовании. На основе анализа рекомендаций по управлению проектами и исследований цифровой трансформации университетов предлагается концептуальная модель из шести этапов: инициирование проекта, планирование, управление рисками и изменениями, реализация, мониторинг и контроль, оценка результатов и устойчивости. Также выделяются четыре фактора, способных влиять на успешность проекта: соответствие стратегическим целям, вовлечённость заинтересованных сторон, управление рисками и

изменениями, а также оценка результатов. В статье проводится различие между внедрением технологического решения и достижением ожидаемых организационных результатов. Обосновывается необходимость рассматривать цифровую трансформацию как структурированный процесс организационных изменений, а не исключительно как техническую задачу.

Ключевые слова: цифровая трансформация, высшее образование, проектное управление, жизненный цикл проекта, заинтересованные стороны, управление рисками, оценка результатов.

Annotatsiya: Raqamli transformatsiya boshqaruv jarayonlari, ta’lim xizmatlari va talabalar bilan o‘zaro hamkorlikni takomillashtirishga intilayotgan oliy ta’lim muassasalari uchun muhim yo‘nalishga aylandi. Biroq yangi texnologiyalarni joriy etish har doim ham kutilgan natijalarga olib kelmaydi. Raqamli tashabbuslarni amalga oshirishda maqsadlarning yetarlicha aniq belgilanmaganligi, resurslarning cheklanganligi, xodimlarning tayyorgarligi yetarli emasligi va tashkiliy o‘zgarishlarga qarshilik kabi muammolar yuzaga kelishi mumkin. Maqolada loyiha boshqaruvi tamoyillari oliy ta’limda raqamli transformatsiyani rejalashtirish, amalga oshirish va baholashga qanday yordam berishi ko‘rib chiqiladi. Loyiha boshqaruvi bo‘yicha tavsiyalar va universitetlarda raqamli transformatsiyaga oid tadqiqotlar tahlili asosida olti bosqichdan iborat konseptual model taklif etiladi. Model loyihani boshlash, rejalashtirish, xavf va o‘zgarishlarni boshqarish, amalga oshirish, monitoring va nazorat, natijalarni hamda barqarorlikni baholash bosqichlarini qamrab oladi. Shuningdek, loyiha muvaffaqiyatiga ta’sir qilishi mumkin bo‘lgan to‘rtta omil aniqlanadi: strategik maqsadlarga muvofiqlik, manfaatdor tomonlarning ishtiroki, xavf va o‘zgarishlarni boshqarish hamda natijalarni baholash. Maqolada texnologik yechimni joriy etish bilan kutilgan tashkiliy natijalarga erishish o‘rtasidagi farq yoritiladi. Raqamli transformatsiyani faqat texnik vazifa emas, balki tizimli tashkiliy o‘zgarishlar jarayoni sifatida boshqarish zarurligi asoslanadi.

Kalit so‘zlar: raqamli transformatsiya, oliy ta’lim, loyiha boshqaruvi, loyiha hayotiy sikli, manfaatdor tomonlar, xavflarni boshqarish, natijalarni baholash.

1. Introduction

Digital technologies are changing how universities manage their activities and provide services. Learning management platforms, digital document workflows, student information systems, and data analytics can simplify administrative processes and improve access to information. However, introducing a new system does not automatically improve the way a university operates.

Problems may arise when project objectives are unclear, employees are not prepared for new procedures, or users continue relying on previous methods. Carmo et al. [1] identify organisational and management challenges as important parts of digital transformation in higher education. This means that technology needs to be considered alongside people, processes, and institutional priorities.

Project management offers a structured way to define objectives, allocate resources, assign responsibilities, manage risks, and evaluate results. ISO 21502:2020 provides general guidance applicable to projects of different types, sizes, and levels of complexity [2].

The purpose of this article is to examine how project management principles can support digital transformation in higher education and propose a conceptual model for planning, implementation, and performance evaluation.

Research question: How can a project-based management approach support the successful implementation and evaluation of digital transformation initiatives in higher education institutions?

2. Methodology and Theoretical Background

This article uses a conceptual, document-based approach. It draws on project management guidance and selected research on digital transformation in higher education, including work on institutional management and organisational implementation [1–3].

The analysis focuses on three questions: which project stages are relevant to digital transformation, which organisational factors should be considered during implementation, and how universities can distinguish project delivery from the benefits achieved after implementation.

Digital transformation involves more than converting paper documents into digital formats. It may require redesigning procedures, integrating information systems, changing responsibilities, and improving the services provided to students and staff. Mergel et al. [3] examine digital transformation in a higher education institution, providing a case-based perspective on the organisational context of such change.

Based on these considerations, the article proposes a six-stage model and identifies four factors to consider throughout the project life cycle: strategic alignment, stakeholder engagement, risk and change management, and performance measurement.

The model is conceptual. No original surveys, interviews, or empirical testing were conducted; therefore, its practical effectiveness remains to be evaluated.

3. Proposed Six-Stage Model

The proposed model connects project management activities with the organisational changes required for digital transformation.

Figure 1. Six-stage conceptual model

1. Project initiation
2. Project planning
3. Risk and change management
4. Implementation
5. Monitoring and control
6. Evaluation and sustainability

The model is not an official ISO framework.

Stage 1 — Project initiation. The university identifies the problem, defines the expected improvement, and establishes the project's preliminary scope and key stakeholders. For example, a university experiencing delays in processing student requests may consider introducing a digital request management system. The project should begin with the service problem, not with the selection of a particular technology.

Stage 2 — Project planning. The project team defines activities, responsibilities, resources, deadlines, deliverables, and performance indicators. Academic staff, administrative

employees, students, and technical specialists should be involved where their requirements affect the solution. Planning should also cover training and user support.

Stage 3 — Risk and change management. The team identifies technical risks, such as system incompatibility and data migration errors, as well as organisational risks, including limited user adoption and resistance to new procedures. Each significant risk should have an assigned owner and an appropriate response. Communication and training should continue throughout implementation.

Stage 4 — Implementation. The team develops, configures, tests, or introduces the digital solution. Where appropriate, a pilot in one department can help identify practical problems before wider adoption. The pilot should have clear objectives and criteria for deciding whether the solution should be expanded.

Stage 5 — Monitoring and control. The project team tracks progress against the approved plan, including schedule, budget, deliverables, risks, and testing results. Corrective actions should be taken when deviations threaten project objectives. The team should distinguish completed technical work from improvements in the service itself.

Stage 6 — Evaluation and sustainability. The university evaluates whether the project delivered the agreed outputs and whether the intended benefits are being achieved. It should also confirm who will maintain the system, support users, manage updates, and monitor performance after project closure. Evaluation findings can inform future projects.

4. Success Factors and Performance Evaluation

Four factors are particularly relevant to the proposed model.

Strategic alignment. The project should address a defined institutional need and support the university's objectives. Without a clear problem and expected benefit, a functioning digital solution may provide limited practical value.

Stakeholder engagement. Academic staff, administrative employees, students, and technical specialists may have different requirements. Their involvement helps identify these needs before implementation and gives users opportunities to report problems.

Risk and change management. Technical readiness alone is insufficient. Universities should consider organisational readiness, data protection, staff capacity, training, and support for new procedures throughout the project.

Performance measurement. Indicators should be defined before implementation. Where possible, the university should establish baseline values and compare them with results after implementation. Changes should be interpreted carefully rather than automatically attributed to the new technology.

Table 1. Suggested indicators for digital transformation projects

Dimension	Example indicator	Purpose
Schedule	Difference between planned and actual completion dates	Assess delivery against the schedule
Budget	Difference between approved and actual expenditure	Assess financial performance

Deliverables	Proportion of planned outputs completed and accepted	Verify project delivery
User adoption	Share of intended users actively using the solution	Assess adoption
Process efficiency	Time required to complete the targeted process	Examine operational improvement
User experience	Satisfaction or reported usability problems	Identify practical issues
Sustainability	Availability of assigned support and maintenance	Assess continued operation

The indicators represent different aspects of performance. For example, launching a digital request system is a project output, while reducing the time required to process requests is a potential outcome. A project may meet its schedule and budget without achieving the intended operational improvement.

Universities should therefore evaluate both delivery and outcomes. They should also review performance after implementation, since user adoption and operational benefits may take time to become visible.

The following comparison summarises the difference between focusing mainly on technology and managing transformation as a project.

Table 2. Technology-focused and project-based approaches

Aspect	Technology-focused approach	Project-based approach
Initial priority	Introduce a digital tool	Define the problem and expected outcomes
Planning	Focus on technical delivery	Include scope, resources, risks, and stakeholders
Staff involvement	May be limited to system users	Includes affected groups throughout the project
Evaluation	Focus on launch and system availability	Assesses delivery, outcomes, and sustainability

The comparison does not mean that every technology-focused initiative will fail. It illustrates how an explicit project management structure can help universities address organisational requirements alongside technical delivery.

5. Discussion and Practical Recommendations

The proposed model treats digital transformation as a managed organisational change rather than a technology installation. It combines project life cycle activities with strategic alignment, stakeholder engagement, risk management, and performance evaluation. This approach is consistent with the general project management guidance in ISO 21502:2020 [2] and with research identifying organisational challenges and success factors in higher education digital transformation [1; 3].

Universities applying the model should begin by defining the problem and expected benefits. They should then establish clear project responsibilities, involve affected users, assess risks, and provide training and support. Pilot implementation can be useful where uncertainty is high, provided that the pilot has measurable objectives and a clear decision point.

Evaluation should include both delivery measures and indicators linked to the original problem. A system's launch does not by itself demonstrate that services have improved. Institutions should also plan for maintenance, user support, and continued review after the project ends.

The model has limitations. It has not been empirically tested, and universities differ in size, resources, governance, and digital maturity. The model may therefore require adaptation to the scale and context of each initiative. Future research could apply it to a specific university project and examine implementation performance, stakeholder participation, user adoption, and post-implementation outcomes.

6. Conclusion

Digital transformation in higher education involves technology, people, institutional procedures, and organisational objectives. Introducing a digital solution does not automatically guarantee the expected improvement.

This article proposes a six-stage conceptual model covering project initiation, planning, risk and change management, implementation, monitoring and control, and evaluation and sustainability. It highlights four factors that should be considered throughout the project life cycle: strategic alignment, stakeholder engagement, risk and change management, and performance measurement.

The model offers a structured starting point for universities planning digital initiatives. However, it has not been empirically validated, and further research is needed to assess its practical value. Ultimately, the success of digital transformation should be judged not only by whether a system is delivered, but also by whether it improves the targeted process and can be sustained over time.

References

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