

**ЦЕНТР СОЦИАЛЬНО-ЭКОНОМИЧЕСКИХ ИССЛЕДОВАНИЙ –
ФИЛИАЛ ИНСТИТУТА ЭКОНОМИКИ КОМИТЕТА НАУКИ МНВО
РК В Г.АСТАНА
ЕВРАЗИЙСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ
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КОММЕРЦИЯНЫҢ ИНСТИТУЦИОНАЛДЫҚ ОРТАСЫН
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Ц 42 Цифрландыруды дамыту және электрондық коммерцияның институционалдық ортасын қалыптастыру: трендтер, мәселелері және шешу жолдары = Развитие цифровизации и формирование институциональной среды электронной коммерции: тренды, проблемы и пути решения = The development of digitalization and the formation of the institutional environment of e-commerce: trends, problems and solutions. -Халықаралық ғылыми-тәжірибелік конференция/ Международная научно-практическая конференция. – International scientific-practical conference. - Астана: Центр социально-экономических исследований – филиал Института экономики Комитета науки Министерства науки и высшего образования Республики Казахстан, 2024. 378 с.- қазақ, орыс және ағылшын тілдерінде.

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В сборник включены научные доклады отечественных и зарубежных экономистов-исследователей, вузовских работников, специалистов-практиков, докторантов и магистрантов, представленные на международной научно-практической конференции «Развитие цифровизации и формирование институциональной среды электронной коммерции: тренды, проблемы и пути решения». Конференция проведена в рамках реализации научных исследований по проекту грантового финансирования МНВО РК «Формирование институциональной среды рынка электронной коммерции в Казахстане, ее оценка и разработка механизма развития» (ИРН: AP14871419).

Материалы и рекомендации конференции предназначены для практического использования субъектами бизнеса, государственными органами, научными работниками, преподавателями и обучающимися высших учебных заведений.

Жинаққа «Цифрландыруды дамыту және электрондық коммерцияның институционалдық ортасын қалыптастыру: трендтер, мәселелері және шешу жолдары» атты халықаралық ғылыми-тәжірибелік конференциясына ұсынылған отандық және шет елдік экономист-зерттеушілердің, жоғарғы оқу орындары қызметкерлерінің, маман-практиктердің, докторанттардың және магистранттардың ғылыми баяндамалары мен ұсыныстары енгізілген. Конференция ҚР ҒЖБМ «Қазақстандағы электрондық коммерция нарығының институционалдық ортасын қалыптастыру, оны бағалау және дамыту тетігін әзірлеу» гранттық қаржыландыру жобасы бойынша (ЖТН: AP14871419) ғылыми зерттеулерді жүзеге асыру шеңберінде өткізілді.

Конференцияның материалдары мен ұсыныстары бизнес субъектілерінің, мемлекеттік органдардың, ғылыми қызметкерлердің, жоғары оқу орындарының оқытушылары мен студенттерінің тәжірибелік пайдалануына арналған.

The collection includes scientific reports by domestic and foreign economists-researchers, university employees, practitioners, PhD students and undergraduates, presented at the international scientific and practical conference «Development of digitalization and the formation of an institutional environment for e-commerce: trends, problems and solutions».

The conference was held as part of the implementation of scientific research under the grant funding project of the MSHE RK «Formation of the institutional environment of the e-commerce market in Kazakhstan, its assessment and development of a development mechanism» (IRN: AP14871419).

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IMPLEMENTING NEW PRODUCT DEVELOPMENT (NPD) TECHNIQUES TO ENHANCE INNOVATION PROJECT MANAGEMENT

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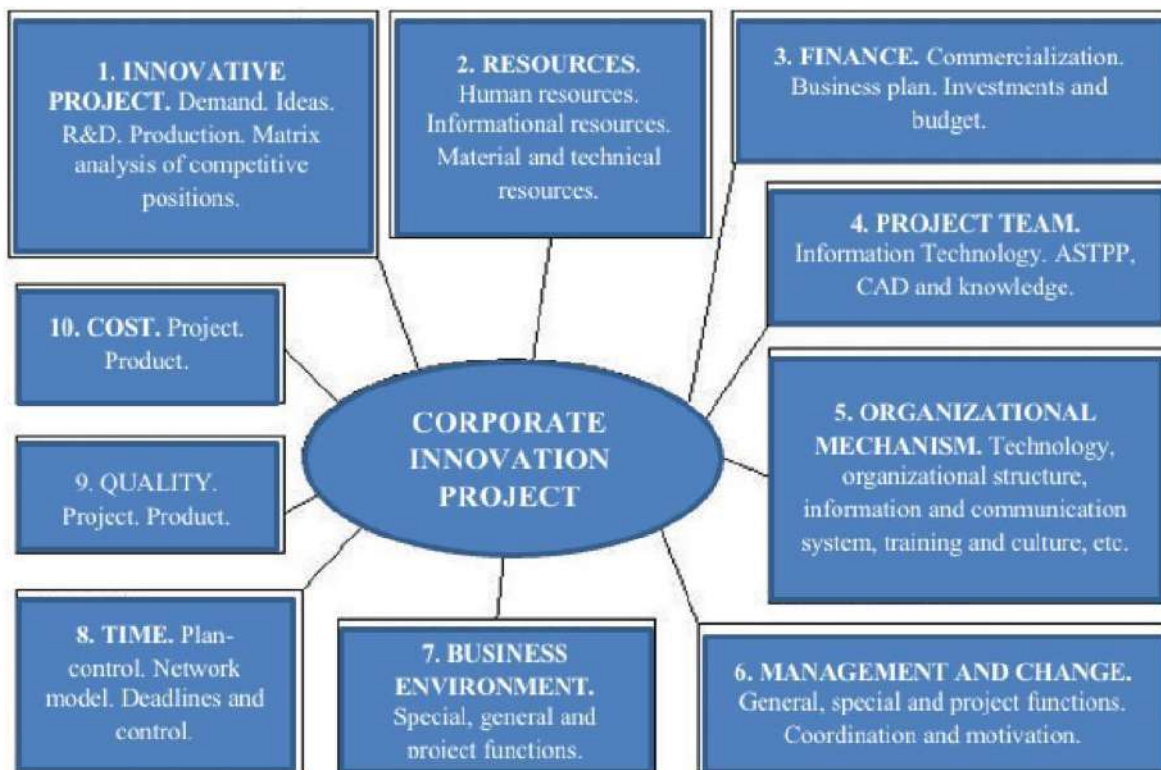
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The Kazakh economy has to accelerate technical and inventive growth in the context of the current political and economic landscape of the world. Its resolution is intricate and multifaceted. Developing a viable plan for inventive development, creating a strong national innovation system, and putting in place efficient organisational, financial, fiscal, and legal policies to encourage and promote innovation are all vital at the national level. The implementation of a strategy for the sustainable development of industries, industrial complexes, and regions [1], the application of the "smart specialisation" model to the management of regional development, and the establishment and operation of creative territorial production clusters [2, 3] are all associated with the mesoeconomic level solution to this problem.

Ultimately, the ability of economic entities to innovate, develop new goods, get them to the mass production stage, and carry out creative initiatives is what ultimately determines the micro level answer to the problem of inventive development. This article focuses on the examination of the management of innovative projects and the potential for improvement via the use of contemporary NPD (new product development) methodologies.

The research's findings. The process of developing a new product (NPD) involves a number of intricate steps and close collaboration across the enterprise's functional divisions, including R&D, production, finance and investment management, human resources, marketing, and sales. New product development (NPD) is the cornerstone of an organization's strategic development since it enables them to investigate untapped markets, extending their life cycle and generating significant economic returns on investment.

An inventive project is a multifaceted, equally complicated category. These consist of the project's substance (an inventive product or management solution that must be put into practise), project limitations (time, money, quality), resource provision (people, money, materials, and technology), and other components [4]. Figure 1 depicts the innovation project's organisational structure.



Note: Created by authors

Figure 1 – Corporate Innovation Project Structure.

Nowadays, the majority of creative projects involve developing, enhancing, and releasing goods and services onto the market. In this sense, it is possible to integrate the management of projects and products under a single set of guidelines. Standard procedures and methods that can be applied as project management tools are part of the current NPD methodology. These consist of the Booz Allen Hamilton model, the Stage-Gate method, and the ExPD model (product research development).

There are notable parallels between project and product management concerning the flow of actions. Every one of these management activity branches entails putting a methodical procedure into place. Logical correspondence characterises typical stages of project management (initiation, planning, implementation, monitoring, completion) and NPD (research/launch, planning, execution, verification/control, release) [5].

The management of the changeover from one project stage to the next is one of the methodological issues with project management. When a stage is deemed finished, there are a number of questions that need to be answered, including what criteria and standards may be used to determine it, what adjustments to the stakeholder composition should be made, and how to carry out the project's phased resource provision. The stage-gate framework is one of the instrumental ways of NPD that may be used to tackle this issue.

A conceptual and functional action plan for advancing a project to produce a new product from idea to launch is the Stage-Gate system. Before getting management clearance to go on to the next step, cross-functional teams must successfully finish the predetermined cross-functional tasks at each stage. The model operates on the

following concept. The process of creating a new product starts with a concept and concludes with its successful launch. You may think of any activity that takes place between these two places as a dynamic process [6]. This process is divided into two categories under the Stage-Gate model: decision points/gate and action group/stage.

Corporations that integrate NPD and project management technologies create a roadmap for creative projects and strike a balance between the three primary project constraints: project budget, project schedule, and work volume and quality. Achieving the ideal values of the project parameters in terms of quality, timeliness, and money is the need in this case to advance to the next level [7].

Based on a synthesis of the Stage-gate model and the traditional project management methodology, the authors presented a 5-stage, step-by-step technique for managing an innovative project including the creation of a new product.

Stage 1: Exploration-discovery.. First, it becomes clear whether the project is in line with the enterprise's general development plan. The new product must to concentrate on markets that show promise and be predicated on the existence of notable competitive advantages that will enable the business to capture the required market share. The time between an idea's conception and its readying for the official development process is encompassed in the first stage. A proposal may not receive formal approval until after two or three strength checks have been performed on the business concept by certain organisations.

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Two key ideas need to be considered at this point in order to guarantee the product's technical and commercial success:

1. How to make the product
2. How to market and sell it.

This one's interface could have standard NPC tools like Quality Function Deployment (QFD) and compliance diagrams. With the help of these tools, you may sift through ideas, select the finest ones, and notify the project team. Additionally, the original data should be converted into project characteristics, such as scope, goals, and hazards, in compliance with the project management approach.

Stage 2: Planning the business case. The following step involves planning how the project will proceed and determining its key characteristics and performance measures. Estimating costs and revenue is done, along with evaluating the resources required to carry out the project. The following are the determined performance metrics

for the investment project: internal rate of return (IRR), payback time (PP), ROI (return on investment), profitability index (IP), and net present value (NPV). The project's economic rationale is based on these indicators [8].

Project management approach presupposes a systematic and well-defined planning of the tasks required to develop a product, market it, and accomplish project objectives. The WBS tool (Hierarchical Structure of Work) can help with this task's execution. It entails breaking the project down into intermediate results and creating a plan with precise steps to reach each one. A project budget and a strategy for managing resources and communications are created using the work breakdown structure (WBS). Stakeholder accountability and obligations are defined with the use of a resource management plan. Delivering the appropriate information to the right people at the right time is made possible by the project's communications management plan. The volume, time, and cost constraints are the fundamental project restrictions that are established for certain planned activities and serve as key performance indicators (KPIs) to evaluate the project's efficacy.

Risk assessment should get extra consideration since innovative ventures are often marked by a high level of uncertainty. Risks must be categorised according to their nature, likelihood that they will occur, and potential severity of harm. A risk response plan must also be developed, and the quantitative influence of risks on project parameters must be evaluated.

Stage 3. Development-execution. During the development phase, it's critical to finish the product's design, ascertain all technical details, and produce a working prototype that satisfies the client's needs as much as feasible. The tools "Design for Production and Assembly" (DFMA) and "Analysis of types and consequences of structural failures" (DFMEA) can be used to accomplish these procedures. At this point, it's critical to evaluate the developed product's maximum performance, service life, and other technical specs and quality standards. Some businesses ask for feedback from customers who test their products after supplying them with prototypes.

The guidelines for action at this point are straightforward from the perspective of the project management methodology: carry out the second stage as scheduled. Understanding how resources are utilised, if there is a departure from anticipated expenditures, and whether there is a resource shortfall is crucial in addition to satisfying the set standards for the quality of the output. The project's business processes can be reengineered and the parameters adjusted as needed.

Stage 4. Verification-control. At this point, the product, staff, technology, and equipment are all examined to make sure they are ready for production to begin. Numerous variables, such as industry standards, client requirements, product performance characteristics, and others, affect the process of product verification. Customers test products in certain situations; this is common in the automobile sector. A production inspection comes after the product inspection to make sure the product can be produced in the necessary quantities, quickly, and with the necessary quality. Pilot testing is done, along with technological preparation for manufacturing and design.

Stage 5. Release-completion. The beginning of the product's serial manufacturing is known as the release stage. The success of sales processes and marketing policies determines a lot of this. Currently, the problem of locating marketing middlemen and setting up ideal logistics is being resolved. To improve the product's and the company's standing with customers, an efficient system of technical assistance, warranty service, and after-sales service must be established.

Following the product's release and deployment, it is essential to evaluate the project's outcomes, determine how much the real parameters deviate from the ones that were originally expected, correct mistakes, and institutionalise the knowledge that was acquired.

Conclusion. The study's findings support the notion that project management and new product development (NPD) methodologies may work well together. New and improved project management techniques (NPD) may be enhanced by using tools like QFD, WBS, DFMEA, DFMA, and Stage-gate framework. Because this approach entails continuous monitoring of the fulfilment of requirements for quality, timing, and cost of the project, as well as a clear distribution of functions among stakeholders and a focus on achieving key performance indicators, the development of a new product, when implemented on the basis of the project approach, becomes more structured and purposeful.

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