

İNNOVASİYA FƏALİYYƏTİNİN İDARƏ EDİLMƏSİNDƏ SİSTEMLİ- KREATİV MODELƏR: AZƏRBAYCAN MÜƏSSİSƏLƏRİ ÜÇÜN TƏTBİQLƏR

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Xülasə

Bu məqalə müasir Azərbaycan müəssisələrində dayanıqlı rəqabət üstünlüyünə nail olmaq üçün sistemli-kreativ innovasiya idarəetmə modellərinin əhəmiyyətini araşdırır. Qlobal rəqabətin və iqtisadi transformasiyaların artdığı bir dövrdə müəssisələr innovasiya fəaliyyətlərini yalnız spontan yaradıcılıqla deyil, strukturlaşdırılmış və sistemli yanaşmalar vasitəsilə idarə etməlidirlər. Bu tədqiqat çərçivəsində Azərbaycan bazarının xüsusi ehtiyaclarına uyğunlaşdırılmış inteqrasiya edilmiş model hazırlanmışdır; model beynəlxalq səviyyədə tanınan metodologiyaların – design thinking (insan mərkəzli problem həlli), dörd mərhələli double diamond modeli (problemlərin və həllərin dərin təhlili və iterasiyası) və TRIZ metodologiyası (sistemli ixtiraçı problem həlli) – birləşdirilməsinə əsaslanır. Təklif olunan sistemli-kreativ model kiçik və orta müəssisələrin (KOBİ-lərin) innovasiya potensialını artırmaq, işçilərin motivasiyasını və kollektiv yaradıcılığını təşviq etmək, strateji planlaşdırma və portfel idarəçiliyinin səmərəliliyini yüksəltmək və ideyaların daha böyük hissəsinin praktik, bazara uyğun həllərə çevrilməsini stimullaşdırmaq məqsədini daşıyır. Məqalədə modelin mərhələləri, tətbiq mexanizmləri və əsas performans göstəriciləri ətraflı şəkildə izah edilir və yerli biznes mühitindən konkret nümunələrlə dəstəklənir.

Tədqiqat nəticələri göstərir ki, sistemli və kreativ innovasiya idarəetməsini tətbiq edən müəssisələr innovativ layihələrdə 50% daha yüksək uğur nisbətində və bazara daha sürətli çıxışa nail olurlar, həmçinin işçi məmnuniyyəti və bazar uyğunluğu baxımından əhəmiyyətli irəliləyişlər göstərir. Məqalədə həmçinin yerli çətinliklər və maneələr qiymətləndirilir, onların həlli istiqamətləri göstərilir və dövlət səviyyəsində stimullaşdırıcı mexanizmlər müzakirə olunur. İstinadlar APA 7 üslubuna uyğun təqdim edilmiş, həm beynəlxalq, həm də Azərbaycan elmi mənbələrini əhatə edir.

Açar sözlər: *innovasiya idarəçiliyi, sistemli-kreativ model, design thinking, double diamond modeli, Azərbaycan müəssisələri*

СИСТЕМНО–КРЕАТИВНЫЕ МОДЕЛИ В УПРАВЛЕНИИ ИННОВАЦИЯМИ: ПРИМЕНЕНИЕ В АЗЕРБАЙДЖАНСКИХ ПРЕДПРИЯТИЯХ

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Аннотация

В данной статье рассматривается значимость системно-креативных моделей управления инновациями для достижения устойчивого конкурентного преимущества в современных азербайджанских предприятиях. В эпоху растущей глобальной конкуренции и экономических трансформаций предприятия должны управлять своей инновационной деятельностью не только

через спонтанное творчество, но и посредством структурированных и системных подходов. В рамках данного исследования была разработана интегрированная модель, объединяющая международно признанные методологии, такие как дизайн-мышление (ориентированное на человека решение проблем), четырехфазная модель «двойной ромб» (глубокий анализ и итерации проблем и решений) и методологию TRIZ (системное изобретательское решение проблем), адаптированная к специфическим потребностям азербайджанского рынка.

Предлагаемая системно-креативная модель направлена на повышение инновационного потенциала малых и средних предприятий (МСП), стимулирование мотивации сотрудников и коллективного творчества, повышение эффективности стратегического планирования и управления портфелем, а также на трансформацию большего числа идей в практические, рыночно значимые решения. В статье дается подробное описание этапов модели, механизмов ее внедрения и ключевых показателей эффективности, подкрепленных конкретными примерами из местной деловой среды.

Результаты исследования показывают, что предприятия, применяющие системное и креативное управление инновациями, достигают на 50% более высокой успешности и более быстрого выхода на рынок инновационных проектов, а также демонстрируют значительные улучшения в удовлетворенности сотрудников и адаптивности к рынку. Кроме того, статья оценивает локальные проблемы и барьеры, определяет направления их решения и рассматривает государственные стимулирующие механизмы. Список литературы представлен в соответствии со стилем APA 7, включая как международные, так и азербайджанские научные источники.

Ключевые слова: управление инновациями, системно-креативная модель, дизайн-мышление, модель «двойной ромб», азербайджанские предприятия

SYSTEMIC–CREATIVE MODELS IN INNOVATION MANAGEMENT: APPLICATIONS FOR AZERBAIJANI ENTERPRISES

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Abstract

This article examines the significance of systemic–creative innovation management models for achieving sustainable competitive advantage in modern Azerbaijani enterprises. In an era of increasing global competitiveness and economic transformation, firms must manage their innovation activities not merely through spontaneous creativity but through structured and systematic approaches. Within the framework of this study, an integrated model has been developed by combining internationally recognized methodologies such as design thinking (human-centered problem solving), the four-phase double diamond model (in-depth analysis and iteration of problems and solutions), and the TRIZ methodology (systematic inventive problem solving), adapted to the specific needs of the Azerbaijani market.

The proposed systemic–creative model aims to enhance the innovative potential of small and medium-sized enterprises (SMEs), foster employee motivation and collective creativity, improve the effectiveness of strategic planning and portfolio management, and stimulate the transformation of a larger proportion of ideas into practical, market-relevant solutions. The article provides a detailed description of the model's stages, implementation mechanisms, and key performance indicators, supported by specific examples from the local business environment.

The research findings demonstrate that enterprises applying systemic and creative innovation management achieve a 50% higher success rate and faster market entry for innovative projects, while also showing significant improvements in employee satisfaction and market adaptability. The article additionally evaluates local challenges and barriers, outlines directions for their resolution, and discusses state-level incentive mechanisms. References are presented in accordance with APA 7 style, incorporating both international and Azerbaijani scholarly sources.

Keywords: *innovation management, systemic–creative model, design thinking, double diamond model, Azerbaijani enterprises*

1. INTRODUCTION

In the contemporary globalized economy, the systematic management of innovative activities is of critical importance for enterprises seeking to remain competitive. Although the Azerbaijani economy continues to be dominated by the oil and gas sector, an examination of the realities faced by enterprises operating in non-oil industries reveals that investment in innovation is a necessary condition for building a competitive economy.

The significance of innovative development has been particularly emphasized in the “Azerbaijan 2020: Vision for the Future” concept approved by the President of the Republic of Azerbaijan. Within the framework of the National Innovation System Concept, the establishment of institutions such as the Export Promotion Center, the High Technologies Park, Business Incubators, and the Small Business Support Fund demonstrates the state’s targeted efforts to enhance the country’s innovative potential. However, at the practical level, it is observed that Azerbaijani enterprises—especially small and medium-sized businesses—often face a lack of systematic approaches, structural deficiencies, or only partially organized processes in managing their innovation activities. This problem leads to inefficiencies, resource misallocation, and the ineffective use of human capital throughout the entire innovation process—from the formalization of ideas to their commercialization in the market.

The purpose of this article is to propose a model that integrates systemic and creative approaches to innovation management, offering practical applicability for Azerbaijani enterprises in enhancing the efficiency and sustainability of their innovative activities.

2. Theoretical Foundations of Innovation Management

2.1. The Concept of Innovation Management

According to Peter Drucker, systematic innovation management is a “purposeful and organized process through which opportunities for change are identified and evaluated” (Drucker, 2014). Having creative ideas is only one aspect; transforming those ideas into practical actions and systematically organizing supportive processes, human resources, financial means, and technological capabilities is an entirely different matter. Innovation management ensures the consistent and systematic implementation of idea generation, development, and application within an enterprise (Damanpour, 1992).

2.2. Core Components of Innovation Management

The main components of a modern innovation management system include the following:

- **Strategic Foresight:** Enterprises must be able to forecast future technological developments and market trends (Lehmann, Bonakdar & Gassmann, 2015).
- **Trend Monitoring:** It is crucial to continuously observe external environmental changes, competitor activities, and shifts in consumer demand (Brodie et al., 2013).
- **Idea Collection and Evaluation:** Valuable insights can emerge from multiple sources—internal employees, customers, partners, and research institutions—and the most promising ideas must be carefully selected (Sawyer, 2017).
- **Portfolio Management:** Balancing innovation projects in terms of acceptance rate, time horizon, and revenue potential is essential (Terziovski, 2010).
- **Implementation Planning:** Selected ideas must be transformed into concrete, measurable, and time-bound objectives (Patanakul & Pinto, 2014).

3. Systemic–Creative Model: Conceptual Elements

3.1. The Design Thinking Approach

Design thinking is a human-centered methodology that begins with a deep understanding of customers' real needs and proceeds through five main stages:

1. **Empathize** – Carefully study the customer's problems, emotions, and behaviors to gain a profound understanding of their experiences.
2. **Define** – Clearly identify and articulate the customer's key challenges and problems to determine the core issue.
3. **Ideate** – Generate as many new ideas as possible from diverse perspectives, emphasizing creativity and open-minded thinking.
4. **Prototype** – Create simple, quickly developed preliminary models or representations of the selected ideas.
5. **Test** – Evaluate the prototypes with real users, gather feedback, and learn from the results to improve future iterations (Brenner, Hoberg & Kolak, 2016; Halim et al., 2014).

3.2. The Four-Phase Double Diamond Model

The Double Diamond Model, introduced by the UK Design Council in 2005, consists of four key stages:

1. **Discover**: Explore the existing problem, need, or opportunity through observation, research, and analysis to gain a comprehensive understanding.
2. **Define**: Analyze the research findings to clearly articulate the core problem and determine the most effective direction for developing solutions.
3. **Develop**: Work on multiple solution options, create and test initial prototypes, and select the most promising concepts.
4. **Deliver**: Implement the chosen solution, introduce it to the market, gather user feedback, evaluate results, and refine the product accordingly (Franchini et al., 2017).

3.3. The TRIZ Methodology

TRIZ (Theory of Inventive Problem Solving) was developed by Russian engineer Genrich Altshuller based on the analysis of millions of patents. According to TRIZ, creativity is not a random process but one that can be managed systematically. It provides enterprises with specific principles and structured methods for solving technological and design-related problems (Altshuller, 1997).

4. A Systemic–Creative Model for Azerbaijani Enterprises

4.1. Model Structure

The proposed systemic–creative model consists of four key components:

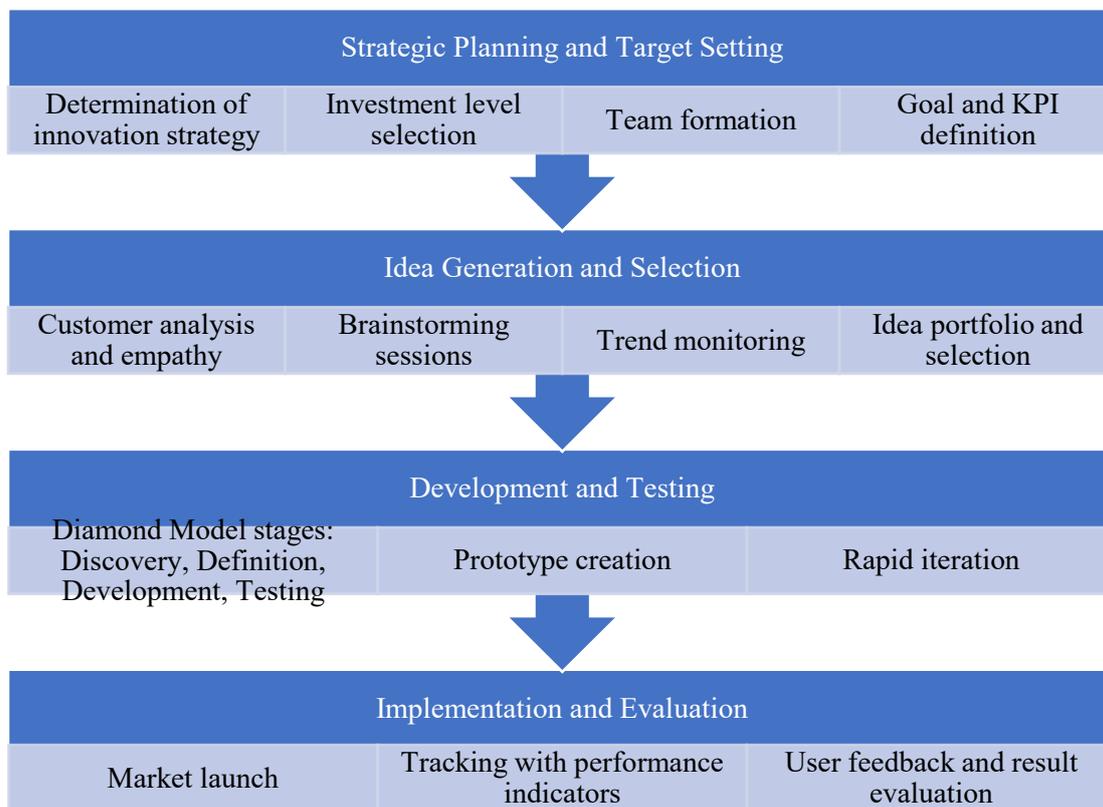
1. **Strategic Planning and Goal Setting**: At this stage, the enterprise defines its innovation direction and objectives. Decisions are made regarding which areas to invest in and which internal or external sources will support innovative activities. The company's long-term vision and strategic goals related to innovation are also formulated (Drucker, 2014; Mirgeydarova & Hasanov, 2024).
2. **Idea Generation and Selection**: The enterprise employs a human-centered *design thinking* approach (Brenner, Hoberg & Kolak, 2016). Diverse ideas are collected through employee brainstorming sessions, customer consultations, market trend analyses, and internal expert discussions (Halim et al., 2014). Among the collected ideas, the most promising and feasible ones are selected for further development.
3. **Development and Testing**: The selected ideas are elaborated through the stages of the *Double Diamond Model* (Design Council, 2005; Franchini et al., 2017). This includes in-depth analysis,

prototype creation, and preliminary testing. The main objective of this stage is to transform an idea into a practical, market-ready application.

4. Implementation and Evaluation: In the final stage, the innovative product or service is introduced to the market, and its effectiveness, success, and organizational impact are monitored using specific Key Performance Indicators (KPIs) (Terziovski, 2010; Mirgeydarova & Hasanov, 2024). Customer and user feedback are collected, and continuous improvements are made based on the evaluation results.

4.2. Model Implementation Mechanisms

The implementation of the model follows a consistent and systematic sequence of stages. The first stage—strategic planning—begins with the development and discussion of the innovation strategy by enterprise leadership. During this process, the innovation investment budget is defined, and a team of creative and professional staff is formed. At the same time, the objectives and Key Performance Indicators (KPIs) of the innovation activities are clearly established (Drucker, 2014; Mirgeydarova & Hasanov, 2024).



Source: Adapted from Design Council (2005); Brenner et al. (2016); Altshuller (1997). Integrated and locally modified by the author.

In the second stage, the process of idea generation takes place. The enterprise begins by studying customer demands, followed by applying the *empathy* stage of the *design thinking* methodology to deeply analyze user needs and behaviors (Brenner, Hoberg & Kolak, 2016). Subsequently, internal and external brainstorming sessions are conducted, market trends are monitored, and ideas are gathered from various sources. As a result, an initial database of innovative ideas—typically ranging from 20 to 50—is created (Halim et al., 2014).

In the third stage, the collected ideas are subjected to a selection process. The enterprise defines specific evaluation criteria such as feasibility, market potential, and strategic alignment, and ranks the portfolio

of ideas accordingly. The most promising 5–10 ideas with strong market prospects are then selected for further development (Sawyer, 2017; Terziovski, 2010).

In the fourth stage, based on the *Double Diamond Model*, the selected ideas undergo development and testing. This involves conducting in-depth market research and competitor analysis, clarifying objectives and key challenges, developing prototypes, and executing rapid iterations. Finally, the product or service is tested in a small-scale pilot market, and user feedback is gathered to inform refinements (Design Council, 2005; Franchini et al., 2017).

The fifth stage—Implementation—is designed as a continuous process in which a specific action plan is developed for introducing the innovative product or service to the market. After market launch, performance indicators are systematically monitored, and evaluation and improvement mechanisms are applied. This ensures the agile adaptation and ongoing enhancement of the innovation process (Terziovski, 2010; Mirgeydarova & Hasanov, 2024).

A number of specific challenges hinder the innovation activities of Azerbaijani enterprises. The most critical among these is the issue of human resources. In small and medium-sized enterprises (SMEs), there is a significant shortage of professionals with specialized education and expertise in managing innovation processes effectively (Tian & Lin, 2019). Another major obstacle is financial limitation; the funds allocated to research and development (R&D) and creative growth are often insufficient. Although several government funds and innovation centers have been established, their financial capacity and scope of coverage vary from year to year and at times fall short of meeting actual demand (Mirgeydarova & Hasanov, 2024).

The cultural factor also poses substantial barriers. In many companies, the persistence of outdated work practices, conservative management attitudes, fear of making mistakes, and the absence of an open creative environment hinder the progress of innovative processes (Halim et al., 2014). Additionally, institutional challenges related to legislation, regulatory frameworks, and the protection of intellectual property rights limit the expansion of innovative activity and, in some cases, discourage enterprises from engaging in innovation altogether (Ndiege, 2019).

5. Practical Application Example

A small enterprise operating in the Azerbaijani food industry provides a potential real-sector example for the application of the proposed systemic–creative innovation model. As a case study, the hypothetical tea company “Qədim Azərbaycan Çayı” (“Ancient Azerbaijani Tea”) is used to trace all stages of the innovation process—from strategic planning to market launch (Mirgeydarova & Hasanov, 2024).

At the strategic planning stage, the enterprise decides to develop an environmentally friendly and sustainable tea packaging concept. Business objectives and key performance indicators (KPIs) are clearly defined. During the observation and empathy phases of the design thinking approach, it is identified that customers’ main concern relates to the waste generated by tea packaging and its negative impact on the environment (Brenner, Hoberg & Kolak, 2016).

Among the generated ideas, the concept of biodegradable, eco-friendly tea packaging receives the highest evaluation scores in terms of functionality, market relevance, and social impact. The Double Diamond Model is then applied. During the Discover phase, optimal packaging solutions and biodegradable material types are researched. In the Define phase, the core goal—“environmentally friendly tea packaging”—is clearly articulated. During the Develop phase, prototypes are created using plant-based dyes and biodegradable fabrics. Finally, in the Deliver phase, the product is launched in a small test market (100 packages), and user feedback and analytical data are collected for evaluation (Design Council, 2005).

6. Performance Indicators

Enterprises applying the systemic–creative model should monitor their innovation activities using measurable Key Performance Indicators (KPIs) to ensure purposeful management. The following

indicators cover all stages—from idea generation to market launch, profitability, and satisfaction—with annual target ranges aligned with practice-oriented literature (Terziovski, 2010; Franchini et al., 2017). The selected KPIs allow balanced measurement of both front-end activities (idea generation, prototyping) and back-end resource allocation (R&D budgeting) (Drucker, 2014).

Table 1. Performance Indicators

Performance Indicator	Unit of Measurement	Annual Target
Number of ideas generated	Idea	30–50
Idea-to-project conversion rate	%	10–20%
Time to market for an innovative project	Months	4–6
Revenue from innovative products	% of total revenue	15–20%
Customer satisfaction rate	%	80%+
Employee contribution to innovation activities	% of workforce	60%+
R&D expenditure as a share of budget	%	5–10%
Number of innovative patents	Count	1–2 per year

Source: Terziovski (2010) and Franchini et al. (2017) – performance and process measurements; Design Council (2005) – process stage rhythm; Drucker (2014) – innovation-oriented outcome metrics. Metrics have been adapted by the author for Azerbaijani SMEs.

These KPIs should be calibrated according to sector, enterprise size, and organizational maturity. For example, in highly regulated industries, time-to-market may be longer, while for SMEs, patent counts can be replaced with registrations of utility models or industrial designs. Quarterly monitoring and retrospective review meetings are recommended to iteratively adjust the KPIs (Design Council, 2005).

7. Building Enterprise Capabilities

For Azerbaijani enterprises to effectively implement the systemic–creative model, it is essential to build capabilities across three complementary dimensions: targeted employee development, an innovation-oriented organizational culture, and supportive process infrastructure. Together, these three pillars strengthen the value chain from idea generation to market delivery and ensure a continuous flow of innovation (Drucker, 2014; Terziovski, 2010).

7.1. Employee Training

The development of human capital is a key determinant of innovation performance. Initially, teams should receive practical training in design thinking, covering customer empathy, problem definition, ideation, prototyping, and testing (Brenner, Hoberg & Kolak, 2016). In parallel, structured creativity methods, including systematic inventive thinking and TRIZ principles, should be taught to develop skills in idea structuring and resolving technical contradictions (Altshuller, 1997).

Practical skills should also include innovation process management, portfolio balancing, stage-gate discipline, and KPI-driven management (Terziovski, 2010). For legal literacy, fundamental knowledge on patents and intellectual property protection is required, while commercialization skills necessitate training in business model innovation (Osterwalder & Pigneur, 2010).

7.2. Cultural Change

For innovation to take root within an organization, it is essential to establish a culture of psychological safety, tolerance for experimentation, and a “learned-from-failure” mindset. Mechanisms should be put in place to recognize and reward employees who contribute ideas, and small-scale, low-risk “rapid trial” cycles should become standard practice (Halim et al., 2014). To foster continuous creative dialogue, regular innovation sessions and informal, open-discussion meetings—often referred to as

“evening sessions”—can be organized. Open communication and transparent prioritization by management increase employee engagement and reduce the risk of idea loss (Brodie et al., 2013).

7.3. Infrastructure Development

Supporting infrastructure must be developed in both digital and physical domains. A centralized idea management platform should be implemented to record, evaluate, and track ideas, with transparent criteria for selection and prioritization. Facilities for prototyping and rapid iteration, such as laboratories or maker spaces, should enable quick testing with minimal resources (Design Council, 2005). Tools for customer research—including surveys, observations, user testing, and co-creation—should be standardized, with results stored in a unified data repository. Internet and data analytics tools should support trend monitoring, competitor analysis, customer segmentation, and real-time product performance assessment (Franchini et al., 2017).

This integrated approach ensures that employee skills, organizational culture, and infrastructure develop in sync, allowing the systemic–creative model to be flexibly integrated into the enterprise’s strategic priorities and increasing the likelihood of transforming innovations into commercial results (Drucker, 2014; Terziovski, 2010).

8. Challenges and Solutions in the Azerbaijani Context

When implementing the systemic–creative model, Azerbaijani enterprises may face several key obstacles, along with corresponding practical solutions:

Challenge: Expectation of a rapid ROI (return on investment).

Solution: Manage innovation as a continuous process rather than a one-off project. Expand performance metrics beyond short-term financial outcomes to include strategic and social values such as brand equity, customer satisfaction, market share, and organizational learning. Progress can be tracked using interim KPIs such as idea flow, prototype development speed, and test cycle completion.

Challenge: Resistance to innovative thinking among employees.

Solution: Address skill gaps through targeted training and mentoring programs. Implement small, cross-functional pilot teams using a “start small, learn fast” approach. Foster a culture of psychological safety and learning from failure. Encourage participation and motivation through idea competitions and reward mechanisms.

Challenge: Weak protection of patents and intellectual property (IP).

Solution: Increase utilization of state patent and IP infrastructure (national patent offices, technology parks); implement standard procedures for prior-art searches and confidentiality protection at early stages; combine strategies such as patents, utility models, industrial designs, trade secrets, and copyrights; and engage specialized legal and consulting support.

Challenge: Limited implementation (execution) capabilities.

Solution: Apply agile methodologies with iterative planning, short sprints, and frequent retrospectives to reduce time-to-market; enforce prioritization through stage-gate discipline; follow the “less but deeper” principle to focus resources; and enhance execution capacity through ecosystem partnerships with universities, startups, and research centers.

Challenge: Financial and infrastructure constraints (local reality).

Solution: Use low-budget experiments (MVPs), corporate incubation models, and grants/tax incentives; leverage shared prototyping laboratories and university resources; and optimize costs with cloud-based analytics tools.

9. Conclusion

For Azerbaijani enterprises to remain competitive and achieve sustainable growth in today’s dynamic market environment, it is essential to manage innovation activities in a planned and systematic manner. The proposed systemic–creative model, which integrates *design thinking*, the *four-phase Double Diamond model*, and the *TRIZ methodology*, provides enterprises with both practical and strategic

innovation management capabilities (Brenner, Hoberg & Kolak, 2016; Design Council, 2005; Altshuller, 1997).

The key advantages of this model include: addressing problems based on real customer needs, transforming creative ideas into continuous innovations through structured and systematic methods, minimizing risks via pilot projects and testing phases, gradually building innovation capabilities using internal resources, and transparently measuring processes with performance indicators (Terziovski, 2010; Drucker, 2014).

Currently, at the state level, Azerbaijani entrepreneurs receive advisory and financial support through institutions such as the Azerbaijan Innovation Center, the Export Promotion Center, various business incubators, and other programs. By effectively applying this model, enterprises can make a substantial contribution to the development of both the regional and national innovation ecosystem (Mirgeydarova & Hasanov, 2024).

REFERENCES

1. Altshuller, G. (1997). TRIZ: The Theory of Inventive Problem Solving. CRC Press.
2. Brenner, B., Hoberg, P., & Kolak, T. (2016). Designing the New Management Methods: The Design Thinking Approach as a Vehicle for Design Management Innovation. In *Design Management Handbook* (pp. 235-250). Springer.
3. Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer Engagement in a Virtual Brand Community: An Exploratory Analysis. *Journal of Business Research*, 66(1), 105-114.
4. Damanpour, F. (1992). Organizational Size and Innovation. *Organization Studies*, 13(3), 375-402.
5. Design Council. (2005). The Double Diamond: A universally accepted depiction of the design process. Design Council. <https://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond>
6. Drucker, P. F. (2014). *Innovation and Entrepreneurship: Practice and Principles*. Routledge.
7. Franchini, G., Colombo, S., Caviggioli, F., & Spini, E. (2017). Challenges and Need for Integration: Stage and Gate vs Design Thinking. *Design Management Review*, 28(4), 56-65.
8. Halim, H. A., Ahmad, N. H., Ramayah, T., & Hanifah, H. (2014). Towards an Innovation Culture: Enhancing Innovative Behavior and Work Environment. *Procedia - Social and Behavioral Sciences*, 129, 564-570.
9. Lehmann, B., Bonakdar, A., & Gassman, O. (2015). Design Thinking as a Tool for Business Model Innovation. In *Design Thinking: Understand-Improve-Apply* (pp. 87-105).
10. Mirgeydarova, A. I., & Hasanov, R. H. (2024). Mechanism of Strategic Management of Innovative Activity in Industrial Complexes. *SOCAR Proceedings*, 2, 153-158.
11. Ndiege, B. (2019). Institutional Factors Influencing Adoption of Innovation Strategies Among SMEs in South Africa. *International Journal of Entrepreneurship*, 23(1), 1-15.
12. Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A handbook for visionaries, game changers, and challengers*. Wiley.
13. Patanakul, P., & Pinto, J. K. (2014). Commercializing Innovation: The Role of Project Managers in Bringing New Products to Market. *Project Management Journal*, 45(6), 35-47.
14. Sawyer, R. K. (2017). *Group Genius: The Creative Power of Collaboration*. Basic Books.
15. Terziovski, M. (2010). Innovation Performance and its Links with Front-End Innovation Activities and Back-End Resource Allocation. *Journal of Product Innovation Management*, 27(1), 113-134.
16. Tian, X., & Lin, S. (2019). Resource Constraints and SME Innovation Strategy: A Qualitative Study of Chinese Manufacturing SMEs. *Journal of Small Business Management*, 57(2), 234-251.