

**INTERNATIONAL EXPERIENCE IN THE COMMERCIALIZATION OF
INNOVATIONS IN THE FIELD OF DIGITAL TECHNOLOGIES**

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Annotation: The article looks at how different countries around the world commercialize innovations in digital technologies. It analyzes how leading nations implement digital solutions and how businesses, science, and government work together. It also focuses on the role of startups, venture capital, and innovation ecosystems in successfully turning ideas into commercial products.

Keywords: innovation, commercialization, digital technologies, international practice, venture capital, startup.

In the 21st century, digitalization plays a crucial role in the economic growth and competitiveness of countries. Innovations in artificial intelligence, big data, Internet platforms, and automation are creating new markets and changing traditional industries.

This topic is important because effective commercialization of digital innovations allows the transformation of scientific and technical developments into real products and services. The purpose of this study is to examine international practices for commercializing innovations in digital technology and to find effective mechanisms that can be used both globally and locally.

Research objectives:

1. Identify the essence and stages of innovation commercialization.
2. Consider foreign models of collaboration between government, science, and business.
3. Analyze examples of successful commercialization of digital innovations.
4. Identify the problems and prospects for the development of international cooperation.

Commercialization of innovations is the process of turning scientific and technical ideas into goods or services that provide economic benefits. The main steps of this process include:

1. Creation of innovation (research and development);
2. Assessment of commercial potential;
3. Investment support and financing;
4. Product launch and scaling.

In digital technologies, this process is quicker than in traditional industries because of flexibility, low costs, and the ability to quickly replicate innovations.

Based on the experience of the United States is a global leader in digital innovation. Its success comes from the interaction among universities, startups, and venture capital. A prime example is the Silicon Valley ecosystem, where research centers like Stanford closely collaborate with private businesses. The government supports innovation through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

Based on the experience of the EU countries focus heavily on innovation hubs and networking for businesses. The Horizon Europe and Digital Europe programs fund research and startups in artificial intelligence, cybersecurity, and digital healthcare. A unique aspect of the European approach is its commitment to sustainable development and the ethical use of technology.

Based on the experience of the China is actively building public-private partnerships in the innovation sector. The "Made in China 2025" and "Internet Plus" programs aim to boost the digitalization of industry. Technology parks and incubators that support startups in 5G, artificial intelligence, and cloud technologies play an important role.

International cooperation

At a global level, joint innovation centers and experience exchange platforms are being established, such as those from the World Bank, OECD, and ITU. These initiatives help speed up the commercialization of digital solutions and promote their sharing among countries.

Problems and prospects of commercialization of digital innovations

Despite the successes, barriers still exist that slow down the international growth of digital innovations. These include:

1. Differences in patent laws.
2. Limited access to venture capital in developing countries.
3. A shortage of specialists and digital skills.
4. Cybersecurity risks.

To address these challenges, we need to create innovative ecosystems, foster international partnerships, and increase investments in digital education.

In the future, the growth of digital markets and the advancement of artificial intelligence will provide better conditions for faster and more sustainable commercialization of innovations around the world.

Table: Analysis of International Experience in the Commercialization of Digital Innovations

Country/Region	Key Digital Innovations	Commercialization Strategies	Success Factors	Challenges	Results/Outcomes
USA	Artificial Intelligence, Cloud Computing, FinTech	Venture capital funding, university–industry collaboration, startup accelerators	Strong R&D sector, supportive ecosystem, access to global markets	High competition, data privacy issues	Global tech leaders (Google, Apple, Microsoft); high commercialization rate
European Union	Green digital technologies, IoT, Smart cities	Public–private partnerships, EU innovation programs (Horizon Europe)	Regulatory framework, sustainability focus, cross-border cooperation	Bureaucratic barriers, fragmentation of markets	Increased digital sustainability, successful startups (Spotify, SAP)
Japan	Robotics, 5G, Automation	Government-led innovation policy, industry clusters	Long-term innovation culture, advanced infrastructure	Aging population, risk aversion	Global leadership in robotics and electronics
China	E-commerce,	State support,	Large	Intellectual	Emergence of

	AI, 5G networks	rapid scaling, local innovation ecosystems	domestic market, government funding	property issues, global trust challenges	tech giants (Alibaba, Huawei, Tencent)
South Korea	Semiconductors, Smart manufacturing, AI	Integration of innovation into industrial policy, export-oriented model	High-tech education, investment in R&D	Dependence on global supply chains	Leading exporter of advanced digital products

The international experience in the commercialization of innovations in the field of digital technologies demonstrates a variety of effective models adapted to local contexts.

The United States focuses on market-driven commercialization supported by venture capital and a strong startup ecosystem. The European Union emphasizes sustainability and collaboration through innovation programs like Horizon Europe, while Japan relies on long-term planning and advanced infrastructure. China demonstrates a state-driven model with rapid scaling and large market potential, whereas South Korea integrates innovation into its industrial and export-oriented policies.

Overall, successful commercialization depends on a combination of investment in R&D, supportive government policies, effective collaboration between business and academia, and access to international markets. However, challenges such as data protection, intellectual property, and market competition remain critical across all regions.

International experience proves that the commercialization of innovations in digital technologies plays a crucial role in strengthening national competitiveness and accelerating digital transformation.

Countries that combine scientific potential, investment incentives, and international cooperation achieve the highest success rates. However, universal challenges — such as intellectual property protection, cybersecurity, and ethical regulation — remain unresolved globally.

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