

# Legal and Executive Challenges of Utilizing Knowledge-Based Companies in Public Services

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## Abstract

Following World War II, the concept of public service provision by governments underwent a transformation. This shift meant that governments were no longer the sole providers of public services; rather, private individuals and entities could, in certain cases, replace governments in delivering such services. Knowledge-based companies, as private legal entities whose commercial activities are grounded in science and technology, are capable of responding to societal needs much more rapidly than other legal actors. Accordingly, governments can both downsize their structure and increase public acceptance by engaging knowledge-based companies in the provision of public services. However, the use of knowledge-based companies in public services is accompanied by legal and executive challenges. This article employs a descriptive-analytical method and relies on library sources. The objective is to answer the question: What legal and executive challenges exist in utilizing knowledge-based companies for public service delivery in Iran? The findings indicate that the legal challenges primarily stem from two issues: first, the lack of explicit legal provisions regarding the role of knowledge-based companies in public service provision; and second, the existence of multiple and parallel institutions whose decisions on supporting these companies are sometimes nullified. In the executive domain, several challenges were also identified.

**Keywords:** Public services, knowledge-based companies, legal challenges, executive challenges.

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## 1. Introduction

Following World War II, due to the inability of most governments to rebuild the ruins of war, a transformation occurred in the concept of public services. Governments' capacity to reconstruct their war-torn nations—either directly due to material and economic destruction or indirectly through inflation caused by currency devaluation and the burden of repaying international loans—led many to pursue downsizing and to facilitate the entry and operation of the private sector in their economies. The need to reconstruct and modernize large and heavy industries, such as the energy sector, road construction, and even national security, coupled with the rapid and extraordinary advancements by the two post-war superpowers, the Soviet Union and the

United States, in fields such as nuclear energy, outer space exploration, massive progress in military and warfare technologies like the Nash Equilibrium, as well as the emergence of nanotechnology and biotechnology, and all other technologies developing at remarkable speed, prompted commercial enterprises to increasingly invest their resources based on cutting-edge scientific knowledge. It was at this juncture that a new concept emerged: knowledge-based companies.

In Iran, the presence of a large number of educated and creative youth in search of employment opportunities facilitated the establishment and growth of knowledge-based companies within universities and government institutions, and subsequently through private sector initiatives. The necessity of rebuilding Iran after the imposed war, along with scientific advancement, led to a gradual shift in Iranian scientific research toward economic applications. This was especially evident in fields such as energy, oil and gas, refining, petrochemicals, civil engineering, nuclear technology, electronics, laser, biotechnology and life sciences, pharmaceuticals, and medicine—fields in which many young people were studying and working. At this point, the government was no longer the sole actor providing public services in economically significant sectors such as road construction and energy supply. As a result, the idea of utilizing the ideas, products, and services of knowledge-based companies began to take shape in the country's economic and legal landscape. However, despite the passage of over fifteen years since the enactment of the *Law on Supporting Knowledge-Based Companies and Institutions and Commercialization of Innovations and Inventions*, the use of these companies in public service provision continues to face legal and executive challenges. The authors' research indicates that the potential role of knowledge-based companies has been so neglected that not only has no article been published in Iran specifically addressing the legal and executive challenges of involving knowledge-based companies in public services, but very few articles have been written at all on the activities of these companies and their significant impact on the country's economic and legal landscape. Among the limited available literature, only two reports published by the Research Center of the Islamic Consultative Assembly (Parliament of Iran) are closely related to the subject of this study. The first is the report *Executive Challenges of Article 4 of the Law on Supporting Knowledge-Based Companies and Institutions and Commercialization of Innovations and Inventions (2010), regarding the transfer of non-sovereign research institutions to the non-governmental and cooperative sectors*, authored by Hossein Nasiri and colleagues in 2023. The second is the report *Participatory Knowledge-Based Economy: A Review of the Necessity of Participatory Governance in Knowledge-Based Business*, authored by Esmaeil Abdi and colleagues in 2024. While the first report addresses the executive challenges of knowledge-based companies, its focus is limited to the subject of Article 4 of the aforementioned law. The second report, on the other hand, concentrates on the issue of participatory governance. Therefore, the subject of this article is distinguished by its comprehensive approach to the activities of knowledge-based companies and its specific focus on innovative legal challenges.

## 2. Materials and Methods

This article employs a descriptive-analytical research method and draws upon library resources, including relevant laws and regulations in the field of the knowledge-based economy, the Constitution of the Islamic Republic of Iran, the general policies of the system regarding Article 44 of the Constitution, and reputable academic books and articles.

## 3. The Concept of Public Services and Its Relation to Knowledge-Based Activities

The term *public services* is one of the fundamental concepts in public law, particularly within the branch of administrative law. One jurist, based on the ultimate purpose of the term, has defined it as “public benefit activities from which all people benefit” (Hajzadeh, 2014). Another jurist defined public service as follows: “Public service refers to the notion that the primary objective of the administration and other administrative legal entities is to serve the public and society” (Abdipourfard & Momen, 2024). A third scholar referred to public service as “any public benefit activity aimed at meeting public needs, performed by administrative—rather than judicial or political—bodies and under public law—not private law” (Mousazadeh, 2011), introducing it as one of the central theories on the organization-based structure of administrative law (Hajzadeh, 2014). It appears that the common element across all definitions is that the core component of public services is the *public interest*. Therefore, understanding the concept of public services necessarily requires a thorough grasp of the concept of public interest.

The significance of understanding public interest becomes more evident upon reviewing the opinions of legal scholars and political scientists, who argue that interpretations of the concept of the state in various intellectual traditions have evolved based on the notion of public interest. This is because the state is regarded as the primary steward of public interest, and the public interest justifies the extent of governmental intervention. Some jurists, considering the concepts of public services and public interest, have defined the state as “an entity that exercises power to provide public services; services that are meant to best meet public interests” (Vaezi, 2024).

Should all matters that carry public interest be delivered as public services by the state? Some believe that while public interest constitutes one of the essential elements of public services, not all matters that serve the public interest necessarily qualify as public services. They identify two key characteristics that distinguish public interests which must be provided as public services by the state: *necessity* and *continuity*. In other words, public services are a category of actions that must be continuously and necessarily provided by the state and should never be interrupted (Hajzadeh, 2014).

“In the domain of administrative law, the concept of public interest is considered the rationale for the existence and main mission of the administration, a fundamental component of administrative contracts, a determining factor in establishing state liability and its scope, and ultimately, a determinant of the jurisdiction of administrative courts” (Vaezi, 2024). Based on this proposition, the delivery of public services by governmental agencies—or assessing the feasibility of delegating such services to the private sector, particularly knowledge-based companies—requires a more precise and thoughtful approach.

Two prevailing theories regarding the role of governments in the economy and social welfare transform the landscape of public service provision. In legal systems that adhere to the welfare state model, the government is seen as responsible for meeting the economic needs of its citizens and ensuring their well-being. Thus, administrative systems in such countries actively provide services like road construction, energy supply, and industrial expansion to help citizens achieve relative prosperity. Conversely, governments that endorse the free-market economy model follow the theory of a regulatory state, wherein the government’s role in the economy is confined to supervision. In these states, the administration is primarily responsible for providing core public services such as national defense, law and order, and justice (Hajzadeh, 2014).

Therefore, it is necessary to distinguish public services from two perspectives: the provider and the nature of the service. Certain public services are exclusively within the domain of the state, such as legislation, diplomacy, adjudication, law enforcement, and ensuring public security. These represent the essence of state sovereignty. Another category of public services can be delivered through partnerships between the state and non-state actors, while a third category comprises services in which the state plays no active role in provision but retains a supervisory function.

From the perspective of the nature and type of public services, different classifications can be made across societies. One category is *administrative public services*, which possess four core features distinguishing them from other forms of public services. The first is that such services are provided exclusively by the state. The second is that they are not profit-driven. The third is that they are delivered to meet public needs and maintain public order. The final feature is that they must comply with administrative regulations (Mousazadeh, 2011). Among these are public services aimed at protecting citizens’ fundamental rights and legitimate expectations from the state (Zeraei & Najarzadeh Hajani, 2017).

Generally, the economic perspective in public law, by prioritizing public interest and social considerations, seeks to balance individual economic objectives with the promotion of collective welfare. Key elements of public interest in the field of economic public law include market regulation and anti-monopoly policies, ensuring access to public goods, addressing systemic failures, facilitating public-private partnerships, promoting social welfare and equity, safeguarding natural resources, and advancing sustainable development. Public interest may be pursued through a *broad paradigm* involving active governmental intervention in social domains, protective policies for vulnerable groups, responses to market failures, or through a *limited paradigm*, emphasizing individual liberties, profit maximization, free markets, and minimal state interference—depending on the specific context and balance between individual freedoms and collective welfare (Abdipourfard & Momen, 2024). The performance of knowledge-based companies in delivering public services is thus inherently tied to the concept of public interest in economic public law.

The general policies of Article 44 of the Constitution, as proclaimed by the Supreme Leader, set forth the following primary objectives: “Accelerating national economic growth; expanding ownership among the public to ensure social justice; enhancing the efficiency of economic enterprises and optimizing the use of material, human, and technological resources; increasing

national economic competitiveness; expanding the share of private and cooperative sectors in the national economy; reducing the financial and managerial burden of the government in economic activities; increasing overall employment levels; encouraging public savings and investment; and improving household incomes.”

To this end, Clause C of the same provision on “policies for developing non-governmental sectors through the transfer of state activities and enterprises” stipulates: “In light of the necessity to accelerate economic development based on social justice and poverty eradication within the framework of the 20-year national vision plan; transforming the government’s role from direct ownership and management of enterprises to policymaking, guidance, and oversight; empowering and supporting the private and cooperative sectors to compete in international markets; preparing domestic enterprises for strategic engagement with global trade regulations; developing a human capital base with scientific and technical expertise; enhancing and aligning national standards with international quality assessment systems; and guiding privatization toward increased efficiency, competitiveness, and expanded public ownership.” Accordingly, based on a recommendation from the Expediency Discernment Council, Clause C of the general policies of Article 44 of the Constitution of the Islamic Republic of Iran, under Paragraph 1 of Article 110, permits the transfer of up to 80% of shares of state-owned enterprises listed under Article 44 to the private sector, public joint-stock cooperatives, and non-governmental public entities, as follows:

1. State-owned enterprises engaged in major mining, large industries, and mother industries (including major downstream oil and gas industries), except for the National Iranian Oil Company and crude oil and gas extraction and production companies.
2. State-owned banks, excluding the Central Bank of Iran, Bank Melli, Bank Sepah, Bank of Industry and Mine, Bank of Agriculture, Bank Maskan, and the Export Development Bank of Iran.
3. State-owned insurance companies, excluding the Central Insurance of Iran and Iran Insurance Company.
4. Airline and shipping companies, excluding the Civil Aviation Organization and the Ports and Maritime Organization.
5. Power supply enterprises, excluding main power transmission networks.
6. Postal and telecommunications enterprises, excluding core telecommunications networks, frequency allocation operations, and main mail sorting and distribution management services.
7. Military-affiliated industries, excluding essential defense and security productions as determined by the Commander-in-Chief.

In addition, the requirements for transferring these state enterprises and services to the private sector were outlined as follows:

- A) Share pricing must occur through the stock exchange.
- B) A public call with adequate notification must be made to encourage broad participation and prevent monopoly or privileged access to information.
- C) To ensure adequate profitability of the transferred companies, reforms related to markets, product pricing, and proper management in accordance with commercial law must be implemented.
- D) The transfer of shares should be carried out comprehensively, considering the structure of parent companies and subsidiaries.
- E) To improve management and efficiency, capable and experienced national managers should be recruited. Installment sales of up to 5% of shares to company managers and employees are allowed.
- F) In line with Clause C of the general policies of Article 44 and the redefinition of governance roles, the government must formulate and implement its new role in policymaking, guidance, and oversight of the national economy.
- G) Allocating a portion of the proceeds from privatization for investment in cutting-edge and high-tech sectors within the framework of sovereign responsibilities is permitted.

Moreover, Clause E of the policy document on “general governance and avoiding monopolies” stipulates the following:

1. Continuing the exercise of public sovereignty by the government after the entry of non-governmental sectors, through policymaking, legislation, and supervision—particularly in ensuring adherence to legal and religious standards in non-governmental banks.
2. Preventing foreign domination or influence over the national economy.
3. Preventing monopolies by non-governmental enterprises through the enactment and implementation of laws and regulations.

In effect, these general policies have established the framework for securing public interests through the provision of public services in the Islamic Republic of Iran, aimed at reducing government size, increasing private sector participation, and gradually transitioning from a state-run economy to a partnership-based model. These policies reflect the view of some political theorists that *public services* represent a *function* rather than a status, and thus cannot be inherently categorized as public or private. Furthermore, by retreating from direct administration, the government relinquishes many activities that were previously considered public services within the economic domain. In this context, the concept of public services evolves, and a new understanding of public services emerges. That is, if services previously provided by the state are now offered by the private sector, this shift does not alter the fundamental nature of the services as public functions—it merely changes the scope of authority and legal responsibility of the service provider (Zeraei & Najarzadeh Hajani, 2017).

It seems that based on the stipulative language of the note under Clause B of Article 1 of the *Knowledge-Based Production Surge Law*, which states, “Public non-governmental institutions and organizations are permitted to annually allocate a portion of their income or resources to complete value chains and produce strategic priority items, as referenced in Clause A of this Article, through partnership and cooperation agreements with knowledge-based companies and technology units located in incubators and science and technology parks,” the use of knowledge-based companies in the delivery of public services—at least in partnership with the public sector—is not legally prohibited in Iran’s public law domain and is indeed feasible.

#### **4. Knowledge-Based Companies and Institutions: A Platform for Growth and Development Based on Modern and Innovative Knowledge**

With the enactment of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions* on October 27, 2010, the concept of a knowledge-based company was introduced into Iran’s legal framework. Article 1 of this law defines a knowledge-based company as “a private or cooperative company or institution established with the aim of synergizing science and wealth, developing a knowledge-based economy, fulfilling scientific and economic objectives (including the expansion and application of inventions and innovations), and commercializing the results of research and development (including the design and production of goods and services) in high-tech fields with substantial added value, particularly in the production of related software.”

The article’s note explicitly states that the legal supports outlined in this law do not extend to “state-owned companies, public non-governmental institutions and organizations, or companies and institutions in which more than 50% of ownership belongs to state-owned companies or public non-governmental institutions.” However, this cannot be interpreted to mean that only companies established entirely by the private sector are to be considered knowledge-based. The note merely excludes such companies from support under this law and does not imply that only private sector companies can engage in knowledge-based activities.

Nevertheless, with the adoption of the *Bylaw on the Evaluation and Support of Knowledge-Based Companies and Institutions* by the Permanent Working Group of the Strategic Council for Knowledge-Based Technologies and Products, Article 1 of Appendix 2 of this bylaw stipulates: “According to the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions*, the group consisting of ‘state-owned companies, institutions, and organizations’ and companies with more than 50% of their ownership belonging to them are ineligible for recognition as knowledge-based companies.” Furthermore, Note 1 adds: “The Secretariat may verify the shareholders of the applicant company up to the second tier.” Accordingly, companies falling within this category cannot be approved as knowledge-based. Therefore, if public services intended to be outsourced to these companies are the same as those provided by state-owned entities, and if the knowledge-based companies in question are, according to Article 1 of Appendix 2 and its note, considered subsidiaries of state institutions (figuratively, ‘adopted children’ of state bodies), such outsourcing contradicts the original purpose of privatization.

More than 110 types of support have been defined by the Vice Presidency for Science, Technology, and Knowledge-Based Economy to empower knowledge-based companies to enhance technological capacity and innovation, strengthen the national innovation system, and contribute to public welfare and the development of a knowledge-based economy.



According to Article 2, Chapter Two (Criteria for Evaluation of Knowledge-Based Companies and Knowledge-Based Goods and Services) of the above-mentioned bylaw, knowledge-based companies are categorized into three types: (a) Startups, (b) Innovative, and (c) Technological.

In a report by the Education and Culture Studies Office of the Research Center of the Islamic Consultative Assembly, it is stated: “Clause 4 of Article 3 of the Constitution emphasizes the promotion of investigative, creative, and innovative spirit across scientific, technical, cultural, and Islamic fields through the establishment of research centers and encouragement of researchers. The Constitution’s emphasis on research indicates the vital role it plays in the country’s governance system. Research centers, as one of the core components of innovation systems worldwide, play a pivotal role in bridging the gap between basic and applied research. In this respect, they are not competitors to universities but rather their complementary agents in achieving research effectiveness” (Nasiri, 2023).

According to Article 4 of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions*, enacted on October 27, 2010, it is stated: “The Ministry of Economic Affairs and Finance, in line with the *Law on the Implementation of the General Policies of Article 44 of the Constitution* (enacted February 2008), is required to compile, within three months of the enactment of this law, a list of all governmental research centers and institutions with the cooperation of all state agencies and submit it to the Supreme Council of Science, Research, and Technology. This council is then obligated, within three months of receiving the list, to identify all non-sovereign research centers and institutions eligible for privatization, and the Ministry of Economic Affairs and Finance must then facilitate their transfer in accordance with the aforementioned law.” Thus, governmental research institutions involved in non-sovereign activities that are transferred to the private sector in the field of knowledge-based activities may be recognized as knowledge-based institutions or companies.

What characteristics must a private institution or company possess to be classified as knowledge-based, and which entity is responsible for verification? Articles 4 and 6 of the *Executive Bylaw of the Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions* (enacted November 11, 2012, with subsequent amendments) answer this question.

Article 4 (amended July 24, 2022) introduces a working group whose purpose is stated at the outset: “To implement the provisions of Article 2 of the Law and to establish the areas of knowledge-based activities and the criteria for identifying the cases of knowledge-based companies and institutions, a working group shall be formed under the chairmanship of the Vice President for Science and Technology and composed of the following members: (a) Vice President for Science and Technology (Chair), (b) Representative of the Ministry of Science, Research, and Technology, (c) Representative of the Ministry of Health, Treatment, and Medical Education, (d) Representative of the Ministry of Industry, Mine, and Trade, (e) Representative of the Ministry of Defense and Armed Forces Logistics, (f) Representative of the Ministry of Agriculture Jihad, (g) Representative of the Ministry of Information and Communications Technology, (h) CEO of the Innovation and Prosperity Fund, (i) Three experts in the field of knowledge-based companies appointed by the Chair, (j) One expert nominated by the Iran Chamber of Commerce, Industries, Mines, and Agriculture and appointed by the Chair.”

Due to implementation difficulties, this article was revised again on October 23, 2022, and authority was delegated to lower-level officials as follows (while retaining the July 2022 amendments): “To propose policies and executive actions and to develop mechanisms for the implementation of the law and relevant regulations, the working group shall include: (a) Vice President for Science and Technology (Chair), (b) Deputy Minister of Science, Research, and Technology, (c) Deputy Minister of Defense and Armed Forces Logistics, (d) Deputy Minister of Industry, Mine, and Trade, (e) Deputy Minister of Health, Treatment, and Medical Education, (f) Deputy Minister of Economic Affairs and Finance, (g) Deputy Minister of Information and Communications Technology, (h) Deputy Minister of Agriculture Jihad, (i) Deputy Minister of Education, (j) Deputy Head of the Planning and Budget Organization, (k) Deputy of the Central Bank of Iran, (l) Chair of the Innovation and Prosperity Fund, (m) Two experts in the field of knowledge-based companies and science parks appointed by the working group and confirmed by the Chair, (n) One expert nominated by the Iran Chamber of Commerce and appointed by the Chair.”

The legal challenges resulting from the delegation of authority to lower-level officials, compared to those listed in the July 2022 provision, are discussed in Section Three, Clause Two of this article.

Article 6 outlines the duties of the working group as follows: (a) Develop areas of knowledge-based activities, establish criteria for identifying cases, and supervise the evaluation of companies by the Vice Presidency; (b) Monitor the performance of government agencies and the Vice Presidency in evaluating and supporting knowledge-based companies and institutions,

and submit periodic reports to the council; (c) Identify obstacles and challenges to the development of knowledge-based companies and propose solutions to the council; (d) Develop mechanisms for implementing the law and relevant regulations; (e) Review existing support programs and design new ones in coordination with executive bodies in line with the objectives of the law, and submit proposals to the council; (f) Investigate violations concerning competition between knowledge-based companies and government ministries, organizations, and public non-governmental institutions, and report to the council; (g) Develop support programs to facilitate and remove barriers to the export of knowledge-based products, especially by directing foreign technical and credit assistance and developing required financial instruments in cooperation with relevant agencies; (h) Determine the scope of direct and indirect investment by economic enterprises, development organizations, banks, and financial institutions solely in knowledge-based projects, effective R&D, and innovative activities, and supervise R&D expenditures based on council-approved criteria; (i) Grant and revoke licenses, guide, and supervise the activities of research and technology funds, and approve regulations for their operations in accordance with their statutes and council resolutions.

Based on Clause (a) of Article 6, the *Bylaw on the Evaluation and Support of Knowledge-Based Companies and Institutions* was approved by the Permanent Working Group of the Strategic Council for Knowledge-Based Technologies and Products. The latest version (Eighth Edition) of the *List of Knowledge-Based Goods and Services* was released by the Evaluation and Qualification Working Group in spring 2021.

The preface of this list indicates that a range of domestic and international sources were reviewed in its development. These include experiences and categorizations from international technology transfer centers, such as the Asia-Pacific Center for Technology Transfer (APCTT), the Russian Technology Transfer Network (RTTN), the proposed framework of the World Intellectual Property Organization (WIPO), the European Union and United Nations sanctions lists, and national upstream documents in science and technology, such as the *National Master Plan for Science* (Supreme Council of the Cultural Revolution), the *National Research and Technology Policy Priorities* (2012), the *Industrial and Mining Zoning Plan* by the Ministry of Industry, Mine, and Trade, and the categorization used by the Industrial Development and Renovation Organization of Iran.

In its latest version, the list identifies seven main technological areas as the general classification framework for goods and services of knowledge-based companies: (1) Biotechnology; (2) Advanced materials and chemical-based technologies; (3) Electrical and electronic hardware, lasers, and photonics; (4) Advanced machinery and equipment; (5) Advanced pharmaceuticals; (6) Medical devices and supplies; and (7) Soft, identity-building, and cultural industries. Aerospace technologies are included in the categories of electrical and electronic hardware and advanced machinery, while advanced materials and petroleum, gas, and petrochemical industries are grouped under chemical-based technologies. This category includes ceramics, metals, polymers, chemical products, and nanotechnology-based materials. Due to the strategic importance of Iran's oil, gas, refining, and petrochemical sectors, specialized technical knowledge packages have been developed for these areas. The list contains 61 subcategories across nine main technology categories.

Moreover, according to Clause (b) of Article 10 of the *Knowledge-Based Production Surge Law*, enacted on May 1, 2022, "The Ministry of Science, Research, and Technology is obliged to annually publish a list of knowledge-based companies and institutions, technology units in incubators and science and technology parks, the Academic Jihad, Islamic Azad University Innovation Houses, and creative units and their products separately and with specialization. Central executive agencies are required to aggregate demands and plan and supervise procurement from the said list using their own budget lines." Thus, the responsibility for publishing the list of knowledge-based companies and institutions has been assigned to the Ministry of Science. Currently, more than 10,000 certified knowledge-based companies are operating in the country and benefiting from legal support.

One of the major legal challenges in the operations of knowledge-based companies is the overlapping jurisdiction of various governmental entities that issue licenses for these companies. These include the Ministry of Science, Research, and Technology; Ministry of Health, Treatment, and Medical Education; Ministry of Industry, Mine, and Trade; Vice Presidency for Science, Technology, and Knowledge-Based Economy; Innovation and Prosperity Fund; National Elites Foundation; and numerous "Knowledge-Based Economy Development Headquarters" operating under various titles.

## 5. Legal Challenges in Utilizing Knowledge-Based Companies in Public Services

As discussed in the first section, due to the transformations in the concept of public services in Iran—particularly following the issuance of the general policies for the implementation of Article 44 of the Constitution by the Supreme Leader, aimed at downsizing the government and increasing private sector participation in the national economy—it appears that the provision of certain public services by the private sector, and consequently by knowledge-based companies (the subject of this discussion), has become increasingly feasible. These types of public services fall within the domain of governmental administrative tasks and do not constitute the essence or sovereign functions of the state.

It is crucial to note that with the approval of the *Bylaw on the Evaluation and Support of Knowledge-Based Companies and Institutions* by the Permanent Working Group of the Strategic Council for Knowledge-Based Technologies and Products, Article 1 of Appendix 2 of the bylaw stipulates: “According to the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions*, the group consisting of ‘state-owned companies, institutions, and organizations’ and companies in which more than 50% of ownership belongs to them, are not eligible for recognition as knowledge-based companies.” Furthermore, Note 1 of this article states: “The Secretariat may examine the shareholders of the applicant company up to the second tier.” Based on these provisions, such companies and institutions are not eligible for approval as knowledge-based companies. Therefore, if the public services intended to be outsourced by such entities are the same as those traditionally provided by state-owned enterprises, and if these knowledge-based companies are considered subsidiaries of state institutions or enterprises—figuratively, “adopted entities” of government bodies—then outsourcing public services to them would defeat the intended purpose of privatization.

Accordingly, there appear to be at least two categories of legal challenges in employing knowledge-based companies for public service delivery. The first stems from the lack of explicit legislative provisions regarding the scope of activity of knowledge-based companies. The second arises from the presence of multiple overlapping institutions, whose regulations supporting such companies are occasionally subject to annulment.

### 5.1. Challenges Arising from the Lack of Legislative Clarity Regarding the Scope of Knowledge-Based Company Activities

As detailed in Section 2 of this article, the *Evaluation and Qualification Working Group for Knowledge-Based Companies and Institutions and Oversight of Implementation* is responsible for annually publishing a list of knowledge-based goods and services. In the most recent version of this list, published in Spring 2021, a total of 61 subcategories were identified across nine primary technological domains.

The legal provisions of the country do not contain specific regulatory frameworks for some of the listed subcategories. While certain fields, such as technological products in the oil industry and the health sector, have been addressed through dedicated regulations—such as the *Bylaw on Knowledge-Based Production and Job Creation in the Oil Industry* and the *Bylaw on Supporting Knowledge-Based Production and Job Creation in the Health Sector*—this is not the case for several other important subcategories in the list.

For instance, subcategories such as “advanced nuclear equipment,” “aerospace vehicles, equipment, and structures,” “cybersecurity for information exchange environments,” “communication, telecommunication, avionics, and aerospace equipment,” and “policy-making services” are not accompanied by detailed regulatory provisions that define the scope and jurisdiction of knowledge-based companies in these domains. It is important to recognize that many of the technological subcategories in the list involve goods and services that are fundamentally provided by state-owned and sovereign institutions.

### 5.2. Challenges Arising from the Existence of Multiple and Overlapping Institutions Whose Supportive Regulations Are Occasionally Annulled

One of the most legally problematic issues in the operation of knowledge-based companies is the jurisdiction of numerous governmental bodies that either issue activity licenses for these companies or adopt various guidelines, directives, or procedural documents to support their expansion. Among these bodies are the Ministry of Science, Research, and Technology; the Ministry of Health and Medical Education; the Ministry of Industry, Mine, and Trade; the Vice-Presidency for Science, Technology, and Knowledge-Based Economy; the Innovation and Prosperity Fund; the National Elites Foundation; and various “Knowledge-Based Economy Development Headquarters.” Two rulings from the General Board of the Administrative Justice Court confirm this issue.



In Ruling No. 918, dated December 12, 2017, the General Board of the Administrative Justice Court annulled Clause 11 of the “Instruction for Issuance of Establishment and Operation Licenses for Advanced Industries and Knowledge-Based Companies and Institutions,” approved by the Ministry of Industry, Mine, and Trade. The case file, registered as No. 96/68, originated from a request by the General Inspection Organization of Iran to annul the above-mentioned clause, arguing that the clause stated no environmental inquiry was needed from the provincial Department of Environment for issuing licenses to knowledge-based or advanced industries operating within or outside industrial parks. However, according to Article 13 of the *Law on the Prevention of Air Pollution* (enacted April 23, 1995), all such permits require consultation with the environmental authorities. Furthermore, Article 1 of the Cabinet Resolution No. 120997/T48608H (December 6, 2015) also binds the Ministry of Industry to comply with related laws. The court concluded that Clause 11 was inconsistent with the law and beyond the authority of the Minister of Industry, Mine, and Trade. Therefore, under Clause 1 of Article 12 and Article 88 of the *Law on the Organization and Procedure of the Administrative Justice Court* (2013), the clause was annulled.

Another relevant case is Ruling No. 918 of the same court, concerning the annulment of the “Guideline on Exemption from Customs Duties, Commercial Profits, and Charges for Knowledge-Based Companies,” issued by the Vice-Presidency for Science and Technology. This ruling stemmed from case No. 96/1506, initiated by a private complainant who challenged several regulations and guidelines, including: (1) the August 2013 statute of the Innovation and Prosperity Fund; (2) the above-mentioned customs exemption guideline; (3) the bylaw for evaluating and recognizing knowledge-based companies; (4) the guideline for selecting and operating intermediaries for the evaluation process; (5) the conscription facilitation guideline for knowledge-based company employees; and (6) Article 8 of the Fund’s statute—arguing that these were all enacted without the required approval from the Supreme Council for Science, Research, and Technology (ATF).

In its defense, the Legal and Parliamentary Deputy of the Vice-Presidency argued in a statement dated April 4, 2018, that the guidelines merely provided internal procedural clarification and contained no substantive new provisions, and were therefore not contrary to the law. Initially, the Economic and Financial Specialized Board of the Administrative Justice Court rejected the complaint, ruling in Judgment No. 283 (November 21, 2018) that the guidelines were not in violation of the law and were within legal jurisdiction.

However, the Supervisory and Inspection Deputy of the Administrative Justice Court, in Report No. 202/54978/9000 (December 2, 2018), raised a legal objection concerning the customs exemption guideline. The objection cited Article 22 of the *Executive Bylaw of the Law on Supporting Knowledge-Based Companies and Institutions*, which states that such customs and duty exemptions—outlined in Article 3 of the law—must be regulated through an executive directive jointly issued by the Ministry of Economic Affairs and Finance and the Ministry of Science, and approved by the ATF. Thus, the approval of the guideline solely by the Evaluation and Qualification Working Group was deemed *ultra vires*.

The President of the Administrative Justice Court, within the statutory time frame, lodged an objection specifically concerning the customs exemption guideline and the authority of the working group. As a result, the General Board of the Administrative Justice Court issued Ruling No. 918 on August 6, 2019, stating: “According to Article 10 of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions* (2010), any benefit, privilege, or facility under this law must be approved by the Supreme Council for Science, Research, and Technology. Since the contested guideline was approved without following legal procedures, and given that Article 22 of the Executive Bylaw requires such exemptions to be implemented through a directive from the Ministry of Economic Affairs and Finance in coordination with the Ministry of Science, the guideline was ruled invalid. Therefore, in execution of Clause (b) of Article 84 of the *Law on the Organization and Procedure of the Administrative Justice Court* (2013), and based on Clause 1 of Article 12 and Article 88 of the same law, the earlier ruling (Judgment No. 283) was overturned in part, and the customs exemption guideline was annulled due to lack of legal authority.”

Based on these two rulings by the General Board of the Administrative Justice Court, it is evident that one of the legal challenges faced by knowledge-based companies in providing public services is the involvement of multiple institutions that were originally established to support such companies but, in practice, operate with overlapping jurisdiction with other competent legislative bodies. This overlap has led to the annulment of certain supportive regulations, thereby undermining the legislator’s intent and obstructing the effective implementation of support mechanisms for knowledge-based companies.

## 6. Executive Challenges in Utilizing Knowledge-Based Companies in Public Services

In the implementation domain, knowledge-based companies and institutions face several challenges in delivering public services. Some of these challenges are shared by all private entities that have replaced former public providers through privatization and outsourcing of public services. These challenges can be inferred from Clause (c) of the general policies of Article 44 of the Constitution, as issued by the Supreme Leader.

For example, the privatization requirements set out in this clause indicate the Supreme Leader's concerns regarding the challenges encountered by the private sector in replacing the public sector in delivering governmental services. These requirements include: "a) Pricing of shares must be carried out through the stock exchange. b) Public announcements must be made with adequate information to encourage public participation and prevent monopoly and information asymmetry. c) To ensure appropriate returns for the companies subject to privatization, necessary reforms in the market, product pricing, and management in accordance with the Commercial Code must be implemented. d) Shares of these companies must be transferred through holding and subsidiary companies with comprehensive evaluations. e) To improve the management and efficiency of privatized enterprises, experienced, specialized, and competent managers must be recruited. A maximum of 5% of the shares of companies under Clause 'c' may be sold in installments to their managers and staff. f) Following the issuance of Clause 'c' and the redefinition of sovereign responsibilities, the government must define and implement its new role in policymaking, guidance, and supervision over the national economy. g) Allocation of a percentage of privatization revenues to high-tech sectors aligned with sovereign duties is permissible." These reflect prior experiences of executive challenges.

There are also implementation challenges specifically faced by knowledge-based companies and institutions in delivering public services. According to a report by the Education and Culture Studies Office of the Research Center of the Islamic Consultative Assembly, "The low efficiency and effectiveness of research institutions in solving national problems, despite receiving government funds; disregard for assigned missions; redundant activities; and failure to act as intermediaries between universities, industry, decision-making bodies, and executive agencies are among the main challenges of research centers in Iran. This has led the legislature to the conclusion that a significant number of research institutions affiliated with executive agencies, which benefit from public funds, do not have a positive impact across national sectors. On this basis, the legislature, in Article (4) of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions*, mandated the privatization of non-sovereign research institutions to the private and cooperative sectors. However, more than thirteen years after its enactment, this mandate remains unimplemented" (Nasiri, 2023).

According to Article 4 of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions*, enacted on October 27, 2010, "The Ministry of Economic Affairs and Finance is obliged, in line with the *Law on the Implementation of the General Policies of Article 44 of the Constitution* enacted in February 2008, to prepare a list of all governmental research centers and institutions within three months from the date of this law's ratification, in cooperation with all governmental agencies, and submit it to the Supreme Council for Science, Research, and Technology. The Council must, within three months of receiving this list, identify the non-sovereign research centers and institutions eligible for privatization and the Ministry of Economic Affairs and Finance shall facilitate their transfer in accordance with this law."

The same report identifies several implementation challenges in this area. Among them: "Another major reason for the law's non-implementation relates to the legal nature of research institutions. These entities often do not operate as companies; instead, they are structured as governmental, non-profit, or public non-governmental institutions. This creates a major legal challenge since the legislature used the term 'company' in Note 1 of Article (4), effectively considering research institutions as companies. However, the vast majority of such entities are not state-owned companies but rather operate under alternative legal frameworks. Another key issue is that many research centers and institutions are not profitable or are incapable of generating profits in the short term. As a result, investors may acquire them solely for their assets and real estate, neglecting their original missions to advance science, research, and solve national technical problems. Such developments could alter the essential nature of these institutions, contrary to the mandate of Note 1 of Article (4). This is one of the consequences of privatizing research institutions to the non-governmental sector" (Nasiri, 2023).

## 7. Conclusion

The concept and provision of public services have existed as long as governments themselves. Traditional theories of public service held that the legitimacy of governments depended on their fulfillment of public service duties. Public services comprise

various forms under public law. Since Iran's economy is based on a state-led model, many public services in the country are provided by the government under its administrative-economic role. The issuance of the general policies of Article 44 of the Constitution marked the formal beginning of privatization in Iran. Significant legislative efforts followed to increase private sector participation in national economic growth and service provision.

Knowledge-based companies and institutions, which emerged in the mid-2000s to commercialize scientific and technological innovations, presented strong potential to substitute the public sector in Iran's economy. This was particularly evident in upstream oil and gas industries, petrochemicals, electronics, nanotechnology, biotechnology, software industries, and information technology. The enactment of the *Law on Supporting Knowledge-Based Companies and Institutions and the Commercialization of Innovations and Inventions* provided the first legal foundation for such a transition. In practice, the implementation of its bylaw and the establishment of the Vice-Presidency for Science, Technology, and Knowledge-Based Economy enabled knowledge-based companies to contribute meaningfully to national development and market participation.

More than a decade after this law's passage and the adoption of related bylaws, the country has seen significant growth in the registration of knowledge-based companies and products. However, legal and administrative challenges persist. These include the absence of explicit legal provisions defining the scope of knowledge-based company activities, the presence of multiple and overlapping institutions whose supportive regulations are occasionally annulled, and executional inefficiencies within governmental structures. Together, these have hindered the optimal and effective use of knowledge-based companies in delivering public services.

Accordingly, it is essential, first, to draw upon international experiences where knowledge-based companies are recognized as key economic actors. Second, a review of domestic laws and regulations must address legislative gaps, particularly regarding the scope of such companies' operations. Third, comprehensive regulations should be enacted to govern the overlapping institutional structures intended to support knowledge-based companies, so that their decisions do not face annulment by the Administrative Justice Court for lack of legal authority.

Finally, without reforming the executive structure of the government, all legislative efforts aimed at downsizing and outsourcing public services to the private sector will continue to face obstacles. Therefore, internal reform of state institutions is a necessary prerequisite for economic growth based on the utilization of knowledge-based companies in the delivery of public services.

## **Ethical Considerations**

All procedures performed in this study were under the ethical standards.

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## **Conflict of Interest**

The authors report no conflict of interest.

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