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Article

A Conceptual Model and Methodological Principles for the Innovative Development of the Service Sector

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Abstract: *Services now generate almost half of the gross value added in Uzbekistan, yet the conceptual tools used to steer innovation were designed mainly for manufacturing. This article develops a conceptual model of the innovative development of the service sector and formulates the methodological principles on which such development should rest. The study is conceptual in nature and draws on an integrative review of 25 sources, including international theoretical work on service innovation, studies by Uzbek scholars, and national legal and statistical documents. Five theoretical streams – the technology-centred view, the characteristics-based approach, service-dominant logic, dynamic capabilities, and the open and systemic view of innovation – are compared, and the element that each contributes to an integrated model is identified. The resulting model consists of six interrelated components: drivers, ecosystem actors, resources and capabilities, the innovation process, multi-level outcomes, and a monitoring and learning loop, all embedded in an institutional and policy environment. Seven methodological principles are derived from the model, and four research propositions are put forward for empirical testing. The model can serve as a framework for sector development programmes, for the design of support instruments, and for the selection of indicators used to monitor innovation in services.*

Keywords: *service sector, service innovation, innovative development, conceptual model, methodological principles, value co-creation, dynamic capabilities, service ecosystem.*

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1. Introduction

The structure of Uzbekistan's economy has shifted steadily towards services. According to preliminary data of the National Statistics Committee, services accounted for 48.6 per cent of gross value added in 2025, and the value added created in the sector grew by 8.5 per cent over the year. Information and communication services expanded fastest, by 23.9 per cent, and small businesses generated 47.2 per cent of the sector's value added [1]. Growth in the wider economy therefore depends increasingly on how quickly service providers renew what they offer and how they deliver it.

Public policy has set explicit targets in this area. In the Global Innovation Index 2026, Uzbekistan ranked 77th among 139 economies, and the Presidential Decree of 16 February 2026 sets the goal of bringing the country into the group of the 60 leading innovative economies by 2030 [2], [3]. The Law "On Innovation Activity" provides the legal basis for these efforts [4]. Reaching such targets in an economy where services dominate is hardly possible unless innovation in services is treated as a subject in its own right.

Here a conceptual difficulty arises. The notions and measurement tools of innovation theory were shaped by the experience of industrial firms. Although the 2018 edition of the Oslo Manual generalised the definition of innovation to all sectors , much of what is new

in services is not captured by research expenditure or patents, and for a long time the sector was described as a mere adopter of technologies developed elsewhere [5-6]. Research in Uzbekistan reflects a similar situation. Fayziyeva notes that local studies have concentrated on general theoretical aspects of innovation activity in services, while Berdiyev observes that a unified model for assessing innovation activity in the sector has not yet fully taken shape[7]. What is missing is an integrated view that shows which elements make up the innovative development of the service sector, how they are connected, and on which principles their management should be built[8].

The purpose of this article is to develop a conceptual model of the innovative development of the service sector and to formulate its methodological principles. Three research questions guide the study:

1. Which theoretical ideas should a model of innovative development of the service sector draw on, and what does each of them contribute?
2. What components should the model include, and how are they related to one another?
3. Which methodological principles follow from the model, and what do they imply for practice?

From technology adoption to a service-specific view. Early research explained innovation in services through the diffusion of technology. Barras proposed the "reverse product cycle", in which information technology is first used to make existing service processes cheaper, then to improve quality, and only at the final stage to create entirely new services [9]. The model was one of the first theoretical accounts of innovation dynamics in services, but it tied novelty to technology and left organisational change out of sight. Coombs and Miles later described three positions in the debate – assimilation, demarcation and synthesis [10]. Supporters of demarcation stressed the peculiarities of services. Hipp and Grupp showed that measurement concepts designed for manufacturing understate innovation in services and argued for service-specific concepts and typologies [11]. Gallouj and Savona, reviewing the debate, concluded that the less visible, non-technological part of service innovation is precisely the part that conventional indicators miss.

Integrative approaches. Gallouj and Weinstein offered a common analytical frame for goods and services by describing any product as a system of final characteristics, technical characteristics, and the competences of the provider and the customer; innovation is then any change in one or more of these vectors [12]. Service-dominant logic, introduced by Vargo and Lusch, went further: service is the basis of all exchange, and value is not delivered by the producer but co-created with the customer [13]. Building on this logic, Lusch and Nambisan defined service innovation as the rebundling of resources and explained it through three notions – service ecosystems, service platforms and value co-creation [14]. Barrett and co-authors showed that digital technologies have widened the boundaries of service innovation, while noting that the field remains theoretically fragmented [15].

Capabilities, openness and systems. Den Hertog described service innovation along four dimensions – a new service concept, a new client interface, a new delivery system and technological options [16] – and, with colleagues, later identified the dynamic capabilities needed to manage it, including sensing user needs, conceptualising, co-producing and scaling [17]. These ideas are consistent with Teece's view that sustained performance rests on the capacity to sense opportunities, seize them and transform the organisation accordingly [18]. Chesbrough argued that firms innovate more effectively when they combine internal and external ideas rather than rely on closed, in-house development [19]. At the level of the wider system, Etzkowitz and Leydesdorff explained innovation through the interaction of universities, industry and government [20].

Studies by Uzbek scholars. Local research has examined the issue mainly from the standpoint of sector development and efficiency. Pardayev and Mamayunusov emphasise that innovation activity in services "covers not only technological but also organisational, managerial and marketing areas" (as cited in). Berdiyev finds that the introduction of innovations in service enterprises is often not linked to strategic planning, and names staff potential, the level of use of digital technologies and a strategic approach to management as the key success factors; in an earlier paper he points to the growing contribution of small business to the sector. Umurova proposes organisational and economic mechanisms for the innovative development of services – incentives for research investment, public–private partnership, financing, protection of intellectual property and infrastructure – and notes that developing countries face shortages of infrastructure, human capital and finance[21].

Fayziyeva argues that in no country has a national innovation system been formed by the private sector alone and that the state plays the leading role in coordinating its elements; in her assessment, the tax mechanisms intended to stimulate innovation in Uzbekistan are still insufficiently developed. Zarikeyeva and Muratbayeva link the possibility of applying innovative methods to the resource base of the enterprise. Shaislamova and Shayzoqova, studying telecommunication companies, include digitalisation among the generalised indicators of the effectiveness of innovation activity, and Maxmatqulov substantiates the need for a system of indicators and econometric models for the innovative development of trade services.

Taken together, the literature reveals two gaps. First, international theories each illuminate one side of the phenomenon – technology, service characteristics, co-creation, capabilities or systemic interaction – but they are rarely brought together in a single model that can guide sector-level policy. Second, local studies address particular mechanisms, such as support measures, resources or evaluation, without placing them in a common conceptual frame. The present article seeks to fill both gaps.

2. Materials And Methods

The study is conceptual: it does not collect primary empirical data but builds a model by analysing and synthesising existing knowledge. The work was carried out in three stages.

At the first stage the source base was formed by purposive selection. A source was included if it dealt directly with the nature, management or evaluation of innovation in services, or with the systemic conditions of innovation, and if it had been published in a scientific journal, conference proceedings or by an academic publisher. The final set comprises 25 sources published between 1986 and 2026: 14 international works, seven publications by Uzbek authors, two legal acts, and two official statistical and ranking releases.

At the second stage each scholarly source was examined for three things: its central idea about how innovation in services arises, the elements it treats as essential, and the relations it assumes between them. The ideas were grouped into theoretical streams and compared, and for each stream the element that it adds to an integrated model was recorded. Analysis and synthesis, induction and deduction, comparison and scientific abstraction were used at this stage.

At the third stage the model was constructed on the basis of the systems approach: the innovative development of the service sector is treated as an open system with inputs, a transformation process, outputs and feedback, operating within an institutional environment. The methodological principles were then derived deductively, each from a specific component or relation of the model. Official statistics for 2025 are used to describe the context of Uzbekistan and to show the practical relevance of the problem, not to test

the model. This defines the main limitation of the study: the model and the propositions that follow from it have not yet been validated on enterprise-level data.

3. Results

Theoretical building blocks of the model

The comparison of theoretical streams shows that they are complementary rather than competing: each explains a different part of the same process (Table 1).

Table 1. Theoretical streams and their contribution to the conceptual model

Theoretical stream	Central idea	Element contributed to the model
Technology-centred view	Innovation in services is triggered by the adoption of information technology and moves from process to product	Digital technologies as a driver of innovation
Characteristics-based approach	A service is a system of characteristics and competences; innovation is a change in any of them	Multi-dimensional object of innovation: concept, interface, delivery system, technology
Service-dominant logic	Value is co-created with the customer within a service ecosystem	The customer as an actor; value in use as an outcome
Dynamic capabilities	Performance depends on the capacity to sense, seize and transform	Capabilities as the link between resources and the innovation process
Open and systemic view	Innovation results from the interaction of firms with external partners, science and government	Ecosystem of actors; institutional and policy environment
Studies by Uzbek scholars	Innovation in services depends on state support, the resource base, staff potential and strategic management	Policy instruments and resource constraints specific to the national context; monitoring

Two observations follow from the table. None of the streams alone covers the whole chain from the conditions of innovation to its results. At the same time, the elements they contribute do not contradict one another, which makes it possible to combine them in one model.

The conceptual model

The proposed model presents the innovative development of the service sector as an open system of six components embedded in an institutional and policy environment (Figure 1).

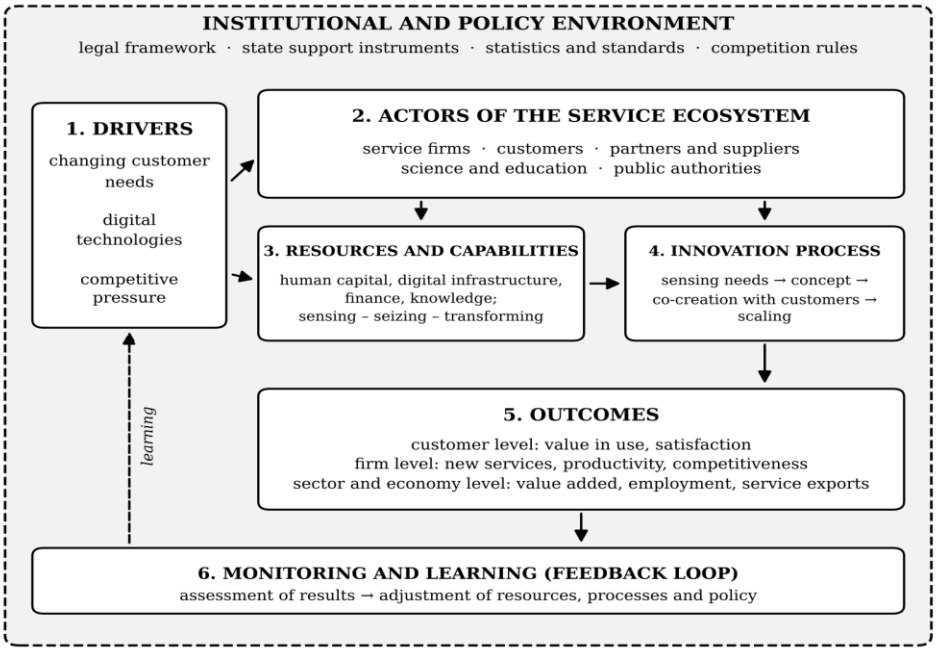


Figure 1. Conceptual model of the innovative development of the service sector
Source: developed by the author.

Drivers. Three groups of forces set the system in motion: changes in customer needs, the spread of digital technologies and competitive pressure. They act on service firms directly and, through them, on the other actors.

Actors of the service ecosystem. Innovation in services is not the product of a single firm. It involves customers, who take part in creating value; partners and suppliers, who provide technology and complementary services; science and education, which supply knowledge and skills; and public authorities, which shape the rules and offer support. In the context of Uzbekistan, where nearly half of the sector's value added is created by small businesses, this component is particularly important: small firms rarely have research units of their own and depend on what they can obtain through such relationships[22].

Resources and capabilities. Human capital, digital infrastructure, finance and knowledge form the resource base. Resources by themselves do not produce innovation; they have to be mobilised through the capabilities to sense customer needs and technological options, to seize them and to transform the organisation. This distinction matters for policy, because support that expands resources without strengthening capabilities may yield little.

Innovation process. The process runs from sensing needs through the development of a service concept and co-creation with customers to scaling. In services, the stages often overlap and a considerable share of novelties emerges in day-to-day practice rather than in planned projects, which is consistent with Berdiyev's finding that innovation in service enterprises is frequently not tied to strategic planning [8]. The object of innovation is multi-dimensional: it may be the service concept, the client interface, the delivery system or the underlying technology[23].

Outcomes. Results appear at three levels. For the customer, it is value in use and satisfaction; for the firm, new or improved services, productivity and competitiveness; for the sector and the economy, value added, employment and exports of services. Treating these levels separately prevents the frequent reduction of innovation results to financial indicators alone.

Monitoring and learning. The final component closes the loop. Assessment of outcomes feeds back into decisions on resources, processes and policy. Without this loop the model would describe a one-off act of innovation, not development.

Institutional and policy environment. All components operate within the legal framework, the system of state support, statistical standards and competition rules. This

environment does not belong to any single component; it conditions them all. As Fayziyeva stresses, the coordinating role here belongs to the state[24].

Methodological principles

Seven methodological principles are derived from the model. Each corresponds to a particular component or relation and carries a practical implication (Table 2).

Table 2. Methodological principles of the innovative development of the service sector

No.	Principle	Content	Practical implication
1	Systemic integrity	Drivers, actors, resources, process and outcomes are treated as one system; a change in one component affects the others	Development programmes should address all components, not finance or technology in isolation
2	Customer centrality	The customer is a co-creator of value, not only its recipient	Customer participation in the design and testing of new services should be planned and recorded
3	Unity of technological and non-technological innovation	Organisational, managerial and marketing changes are as significant as technological ones	Support criteria and statistics should cover non-technological innovation on an equal footing
4	Priority of capabilities over resources	Resources produce results only through the capabilities to sense, seize and transform	Staff training and management development should accompany investment in equipment and software
5	Openness and partnership	Innovation draws on external knowledge and on cooperation among firms, science and government	Platforms, clusters and public–private partnerships should be encouraged, especially for small firms
6	Multi-level evaluation	Outcomes are assessed at the level of the customer, the firm, and the sector and economy	Indicator systems should combine customer, enterprise and macro-level measures
7	Continuous learning and adaptation	Results of monitoring are fed back into resources, processes and policy	Programmes should include regular review and adjustment rather than fixed multi-year targets only

Source: developed by the author.

The principles are interdependent. Customer centrality cannot be realised without openness, because the customer is one of the external sources of knowledge; multi-level evaluation in turn supplies the information on which continuous learning relies. For this reason they should be applied as a set, not selectively.

Research propositions

To make the model testable, four propositions are formulated. They are stated as expectations to be examined in future empirical work, not as established findings.

- **P1.** The effect of resources on innovation outcomes in service enterprises is mediated by dynamic capabilities: with comparable resources, enterprises with stronger capabilities achieve better outcomes.
- **P2.** The degree of customer involvement in the innovation process is positively related to customer-level outcomes and, through them, to firm-level outcomes.
- **P3.** For small service enterprises, cooperation with external partners is more strongly related to innovation outcomes than for large ones.
- **P4.** Enterprises and regions in which monitoring results are regularly used to adjust decisions show more stable growth in innovation outcomes over time.

4. Discussion

The model belongs to the synthesis tradition in service innovation research. It does not set services apart from manufacturing: drivers, resources and outcomes are common to any sector, whereas the role of the customer and the weight of non-technological change are more pronounced in services. In this respect the model follows the logic of Gallouj and Weinstein and of service-dominant logic, but shifts the level of analysis from the individual firm or exchange to the sector, which is the level at which development programmes are designed[25].

Compared with existing frameworks, the model differs in three ways. Den Hertog's framework, describes in detail what changes in a service and which capabilities are required, but it leaves the institutional environment and sector-level outcomes outside its scope. The triple helixexplains systemic interaction, yet it does not include the customer as an actor, although in services the customer is often the main source of new ideas. The model proposed here combines these perspectives and adds an explicit feedback loop.

The model is also consistent with the conclusions of Uzbek scholars and places them in a common frame. The mechanisms proposed by Umurova and the support measures examined by Fayziyeva correspond to the institutional and policy environment; the resource base emphasised by Zarikeyeva and Muratbayeva and the success factors named by Berdiyev correspond to the component of resources and capabilities; the evaluation approaches of Shaislamova and Shayzoqova and Maxmatqulov relate to monitoring and learning. What the model adds is the set of relations among these elements, in particular the idea that resources lead to results only through capabilities.

Several limitations should be stated openly. The model is conceptual and has not been tested empirically; the direction and strength of the relations it assumes may differ across service industries, which are highly heterogeneous. The source base was selected purposively and does not claim to be exhaustive. Some elements of the model, such as customer involvement and dynamic capabilities, are not covered by current official statistics, so their measurement would require special surveys. Finally, the model was developed with the conditions of Uzbekistan in mind, and its applicability to other economies needs separate examination.

In practical terms, the model can be used in three ways: as a checklist when sector development programmes are drafted, to make sure that no component is overlooked; as a basis for designing support instruments aimed at capabilities and partnerships as well as at resources; and as a guide for selecting indicators at the customer, firm and sector levels. Future research should operationalise the components, test the propositions on a sample of service enterprises, and compare the results across industries and regions.

5. Conclusion

First, the main theoretical streams in service innovation research are complementary. The technology-centred view, the characteristics-based approach, service-dominant logic, dynamic capabilities and the open, systemic view each explain one part of the process, and their elements can be combined in a single model.

Second, the innovative development of the service sector can be represented as an open system of six components – drivers, ecosystem actors, resources and capabilities, the innovation process, multi-level outcomes, and monitoring and learning – operating within an institutional and policy environment. The key relations in the model are the mediation of resources by capabilities, the participation of the customer in the process, and the feedback from outcomes to decisions.

Third, seven methodological principles follow from the model: systemic integrity, customer centrality, unity of technological and non-technological innovation, priority of

capabilities over resources, openness and partnership, multi-level evaluation, and continuous learning and adaptation.

On this basis, the following recommendations are made:

- to use the six-component structure when drafting programmes for the development of the service sector at national and regional levels;
- to extend support instruments from the financing of technology to the development of staff skills, management capabilities and partnerships, with particular attention to small service enterprises;
- to supplement statistical observation of innovation activity with indicators of customer involvement and non-technological innovation in services;
- to test the proposed propositions empirically and refine the model in the light of the results.

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