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IOT BUSINESS-MODEL ANALYSIS

Internet of Things (IoT) services market – an organized and interconnected set of activities necessary to create and deliver to consumers a certain group of products or services that are of value to them.

An analysis of research on IoT services market showed that five types of activities can be distinguished in the sequence of activities to create added value in this market [1, p. 74].

A. Manufacture, supply, maintenance of network and end devices of the Internet of things.

B. Providing access to the communication network for the purpose of connection and data transmission for the provision of Internet of Things services.

C. Development, delivery, maintenance of industrial and consumer applications based on IoT platforms.

D. System integration of hardware, software and business processes in order to provide Internet of Things services.

E. Providing Internet of Things services.

Some organizations perform only one type of activity, and some – several, including operational activities for the provision of services. Two types of activities (A and D) are irregular, performed at the beginning of the provision of IoT services, and the remaining three (B, C, E) are regular, provided throughout the life cycle of the service.

Thus, firstly, the provision of Internet of Things services is characterized by a regular nature, and secondly, the greatest value in the value chain is created by activities that are also characterized by the regular nature of their provision.

The operator of the Internet of things services, by definition, must perform the fifth activity. At the same time, he can also perform other types of activities in various combinations. A conceptual description of a set of interrelated activities performed by the operator of the Internet of Things aimed at providing IoT service is understood as the business model of the operator of Internet of Things services.

Combining in all possible ways the existing 5 types of activities performed, we get 16 basic models of the production activities of IoT operators. Models containing types B, C and E involve long-term interaction with the consumer of services and, accordingly, building long-term relationships with him. List them in Table 1.

The difference between the models depends on the types of activities that are performed by the operators in accordance with the model. The company will take its place in Internet of Things services market based on its value proposition. Value proposition – a set of goods and services that meet the needs of a specific consumer segment.

Model number	Types of value-added activities	Model name
1	**2**	**3**
1	E	Pure
3	C, E	Platform-centric
4	B, E	Network-centric
7	B, C, E	Integrated

Table 1 Set of production activity models of IoT operators

Source: [2].

So, when the operator of the services of the Internet of Things performs activities of type D, the main value propositions are based on the services of the Internet of Things. Such value propositions can be, for example, the implementation of regulatory control, preventive maintenance and repair, remote diagnostics, control and automation of operations [3]. At the same time, the operator of such services provides only management services based on the Internet of Things, and the consumer himself provides communication between the devices of the Internet of Things.

Under the network-centric model, based on access services in the communication network for the purpose of connection and data transmission for the provision of IoT services, IoT service operators provide additional value to the consumer.

With the platform-centric model, IoT service operator operates with the capabilities of IoT platform, which, for example, has the ability to interact with several telecom operators. Such a feature can be offered as a value proposition for services where communication reliability is critical.

The choice of a particular model or the transition to a new one must be made on the basis of an analysis of an existing model of production activity, market development trends, possible investment volumes and options for the development of services provided. The expansion of the activities of IoT operators expands the range of services provided, that is, offers, but at the same time increases the amount of resources spent and the time of service provision, therefore, the feasibility of these activities and their economic efficiency should be assessed in advance.

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