

**ИНСТИТУТ БИЗНЕСА И ДЕЛОВОГО
АДМИНИСТРИРОВАНИЯ**

**ФАКУЛЬТЕТ МЕЖДУНАРОДНОГО БИЗНЕСА И ДЕЛОВОГО
АДМИНИСТРИРОВАНИЯ**

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The analysis of the Russian market of temperature and appliance control devices as a part of smart home market has led us to understanding that the sector remained undeveloped till the middle 2000s when it began to expand quite considerably. To begin with, it is worth mentioning that our sector comprises a meteorological sensor, self-learning thermostat which automatically regulates electro-power consumption depending on environmental conditions changes, drains warming, ventilation system, underfloor heating control, and wireless control panels.

According to Russia's Internet market of things 2016-2020 forecast, the Russian smart home market will increase by an average of 21.3% per year and, by 2020, will reach \$9 billion. Our sector is not an exception here, since heating and temperature regulation devices are especially on the rise in Russia. According to statistics, Russia is 5 years behind the developed world in technical matters, so big positive changes in “smart home” market are yet to come. Therefore, the small percentage of market penetration, which is just 3% for 2017, should not look frightening but should rather be an indicator of the promising market. For now, 55% of people surveyed demonstrated great interest in the idea of installing smart home technologies in their houses in future which exceeds the global rate of merely 47%.

Nevertheless, introduction of smart houses on the Russian market faces several limitations. Firstly, smart technologies are very expensive, then, our population is very conservative in terms of introducing new technologies. Also, things which add up to the slow development of "smart house" technologies are the lack of a sufficient number of qualified workers to install and maintain smart systems. Moreover, smart home systems are still unknown to an average consumer.

Having analyzed a number of reliable sources, we have found out that major suppliers of temperature and appliance control devices to the Russian market are such companies, as: Schneider Electric (France), ABB (Switzerland), Gira and Merten (Germany), Vimar (Italy), Crestron (USA). Also, some Russian manufacturers like SMARTON are also in the list.

Generally speaking, IoT market is one of the most promising in the world. And South Korea is no exception to this list. It ranks second in revenue in the segment (us \$ 282 million as of 2017), second only to the United States (us \$ 1 billion 565 million for the same period). In General, the segment of smart homes in South Korea is estimated at about \$ 1 billion for the current year. However, analysts predict that by 2024 the market may grow by 5 times and reach \$ 5 billion.

The growth of the global smart home market is mainly due to such factors, as the significantly growing IoT market, cost-cutting measures provided by home automation systems, the large number of manufacturers expanding their product portfolio, and the increasing importance of home monitoring from remote locations.

The key factors stimulating the development of the smart home market in South Korea are: government policy and support in the promotion of smart home technology in the country; the desire for remote monitoring of home management; the development of technologies in the segment and the emergence of new players (it is worth noting that South Korean market is home to one of the most technologically advanced companies in the world developing smart home technologies: Samsung, LG, SK Telecom, KT corp, Hancom MDS); significant savings due to the economy of electric energy due to IoT technologies (South Korea occupies one of the highest positions of expensive electricity).

According to the fact that we have been analyzing two separate niches - niche of heating control devices and niche of appliance control devices - it would seem logical to analyze these niches independently, if possible. For example, the former is, in fact, a part of HVAC technology (Heating, ventilation, and air conditioning) - a technology which is strongly present in Asia. Korea is one of the biggest HVAC markets in Asia with sales amounting to \$1.1 Billion. Judging by the figures, Korea seems to be a profitable market for the technology which may be caused by a combination of several factors: strong interest of the population, accessibility of the technology and variability of the products offered.

As for the appliance control devices niche, it, in turn, represents control and connectivity technology. For the year 2017 the revenue of this niche in South Korea stood at \$219.2 mln which makes up 16% of the total revenue of the industry. According to research provided by Statista in October 2017, the revenue is expected to reach \$474 mln by 2022, which is more than a doubling over a period of merely 5 years. The share of Korean smart homes with the installed control and connectivity technology amounts to 8.7% of the total number of private households in Korea. These figures look especially impressive when compared to those of the Russian market, where the revenue of the niche equaled \$31.7 mln in 2017 with the penetration rate of 0.6%.

Also, there is an interesting trend concerning the age of the target audience in both countries. According to Statista, the dominating age group in Russian smart home market is represented by people aged 35-44, whereas the key customers of smart home products in Korea tend to be quite older, from 45 to 54 years old, to be exact. This discrepancy might provide some major Russian companies in the industry with a valuable hint that there is a promising yet almost completely unpenetrated segment of 45+ year-olds.

However, the Korean market of smart home technology does have its shortcomings for local companies willing to break into it. One of the major problems a business might face when considering to enter the niche is a language barrier which ultimately results in a data gap, since much of the world's research is in English. A Korean company pursuing AI must create its own natural language technology which is rather a costly process for a relatively small market of 50 million South Koreans.

All things considered, it should be noted again that the smart home market is one of the most developing technologies nowadays. This fact is recognized by many reputable publications and supported by statistical data. However, the growth rate of this technology, as we have seen in the study, directly depends on the level of technological development of the country. Technological development of South

Korea, in turn, is highly linked to the activity of major players in the technology market such as Samsung, LG and many others. High per capita income also contributes to the high level of development of the smart home segment. Another determining factor in the development of the segment is the government's policy to promote IoT. For example, South Korea is engaged in active construction of smart cities, in which a lion's share of homes will be equipped with systems of smart home technologies. Moreover, South Korea soon plans to be the first country in the world to launch a 5G network for the IoT. This is expected to give an additional impetus to the development of smart home technologies and, equally important for us, equipment of temperature and appliance control. In the case of Russia, in order to improve its overall situation on the market of smart home technologies, in particular with heating and appliance control devices, some active support from the state is required as the industry is especially on the rise nowadays, and governmental promotion of energy-effective technologies would be a great help to the industry since it would allow to significantly increase the share of consumers. In addition to that, major companies operating in the industry in Russia could provide special training courses for electricians and other maintenance staff to raise their understanding of the peculiarities of the technology and, therefore, increase the number of qualified workers.

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