UDC 33 **DOI: 10.34670/AR.2023.70.92.030**

New business model of the Chinese company Huawei, which is under US sanctions

Yicheng Zhang

Graduate Student,
Peoples' Friendship University of Russia,
117198, 10/2, Miklukho-Maklaya str., Moscow, Russian Federation;
e-mail: 1132215765@rudn.ru

Ekaterina V. Nezhnikova

Doctor of Economics, Professor,
Peoples' Friendship University of Russia,
117198, 10/2, Miklukho-Maklaya str., Moscow, Russian Federation;
e-mail: nezhnikova-ev@rudn.ru

This paper has been supported by the RUDN University Strategic Academic Leadership Program.

Abstract

The relevance of the topic of the article is due to the fact that in 2018 the US authorities accused Huawei of industrial espionage and the introduction of bookmarks in telecommunications equipment. A total of 23 charges were filed. According to political scientists and economists, the roots of the problem go much deeper than the official accusations. Huawei has become a hostage in the confrontation between the US and China for dominance in the technology market. The company, which created equipment for 5G networks, overtook its closest competitor, Cisco, by 12-18 months. Japan, Australia, New Zealand, Canada, under the imposed sanctions, abandoned Chinese products. Other countries are looking for compromise solutions. On the example of Huawei, we have witnessed a direct confrontation between the state and business, when the decision of the President of the United States actually prohibits the activities of one of the largest manufacturers of telecom equipment, a real competitor to American Cisco. American sanctions against Huawei can completely change the usual picture of the world. It is a mistake to believe that behind them lies only one desire to regulate the presence of a very large competitor on the local market. And even more so, not only Huawei poses a threat to a single government. Today's sanctions against Huawei are not caused by the alleged "bookmarks" in the equipment that threaten national security, but by the possible technological lag of its own IT giant and unwillingness to lose its position in the international arena.

For citation

Yicheng Zhang, Nezhnikova E.V. (2023) New business model of the Chinese company Huawei, which is under US sanctions. *Ekonomika: vchera, segodnya, zavtra* [Economics: Yesterday, Today and Tomorrow], 13 (2A), pp. 329-336. DOI: 10.34670/AR.2023.70.92.030

Keywords
Sanctions, business model, competition, confrontation, telecommunications equipment.

Introduction

The result of US sanctions was extremely harsh. In the first six months of 2021, Huawei's revenue decreased by almost 30% compared to the same period in 2020. This is the largest drop in revenue in the history of the company. Huawei's traditional business has been virtually undermined, so today the company's technology group is trying to "reinvent itself" [Huawei decided…, www]. This is a refusal to develop and sell smartphones and telecommunications equipment, which are being replaced by other directions. These areas will be less dependent on the import of semiconductors: cloud services and software for smart cars. Today, Huawei has doubled its own research and development, which may give the company a chance to avoid the effect of US sanctions. With this investment, Huawei has every chance of becoming a leader in emerging 6G technologies. Thanks to these technologies, other companies will depend on the company's patents, and Huawei itself will get rid of technology imports from the United States. Today, Huawei is transforming into “a huge collection of startups” [ibid.].

At stake is not only the fate of one of China's most famous and successful companies, but also the overall outcome of the technological struggle between Beijing and Washington. The Chinese leadership believes that Huawei has been a vital part of the country's entire innovation network. And the company's survival took on the significance of a national mission.

The U.S. sanctions on Huawei hit two of Huawei's key businesses the hardest: smartphones and network equipment. In the first half of 2021, smartphone sales fell by more than 47%. As a result, according to the research group Canalys, Huawei's component stocks are already running out and their volumes will decrease every quarter [USA and Huawei…, www]. Now the smartphone division has gone to the Chinese domestic market, and the company's presence in Europe has plummeted.

In the network equipment business, the downturn is slower because there are longer production cycles. A report from research firm Dell'Oro showed that Huawei has lost the ability to purchase specialized components for telecommunications equipment, but the company assured analysts that it has enough inventory to support this direction in the next few years. In response to the losses incurred, the company first stepped up its software development, and in this sector, dependence on external competitors is much less. While China is now actively working to develop its own, independent semiconductor industry, it will take a very long time for the company to completely solve its supply problems.

The main direction in which Huawei software solutions are implemented is cloud services. Some tasks in telecommunication networks traditionally performed by base stations can be delegated to software technologies in the cloud infrastructure. Huawei is actively developing next-generation cloud services, offering services to commercial companies and government departments. The company announced its plans for 2022-2024 to invest $100 million in the development of solutions for small and medium businesses in Huawei Cloud. According to Canalys, Huawei's cloud business grew by 116% in the first quarter of 2021, the company managed to capture 20% of the industry's Chinese market, behind Alibaba Cloud but ahead of Tencent. Although 90% of this business is in China, Huawei Cloud has a more prominent presence in Latin America and Europe, the Middle East and Africa compared to Alibaba Cloud and Tencent Cloud [What conclusions follow from the US sanctions against Huawei, www].

However, the effects of US sanctions are also having an effect here. Industry experts say that the supply of processors remains a big problem for the Chinese company. As in the telecommunications industry, cloud service providers like Amazon and Google are trying to improve performance through software optimization. If Huawei manages to achieve the same effect, then the need for processors will become less acute.

Unlike the consumer segment, where the availability of the latest chips is a critical factor, cloud services are more inert. By investing in software development, you can continue to run your business and even achieve some growth. Intel and AMD release new processors every year, but most cloud service providers run processors that are 2 to 5 years old. Income here is provided by new services and artificial intelligence tools, even when working on old components. But over time, you still have to update platforms.

One area where Huawei can start new business relatively easily is in the digitalization of industries that are lagging behind in the adoption of new technologies. The company offers telecommunications, information and software tools to Chinese companies in sectors such as coal mining and port operations, which allows them to reduce costs and improve security. Thanks to these areas, Huawei managed to increase corporate business revenue by 23% in 2020 and by 18% in 2021 [Huawei's profit in the first quarter of 2022 decreased by 67%, www]. Analysts at Counterpoint Research claim that the company's revenue in this segment will increase annually by up to 15% over the coming years. However, according to Huawei, this is still not enough to offset the losses associated with the consumer business - and even in a 10-year perspective, this may not be enough.

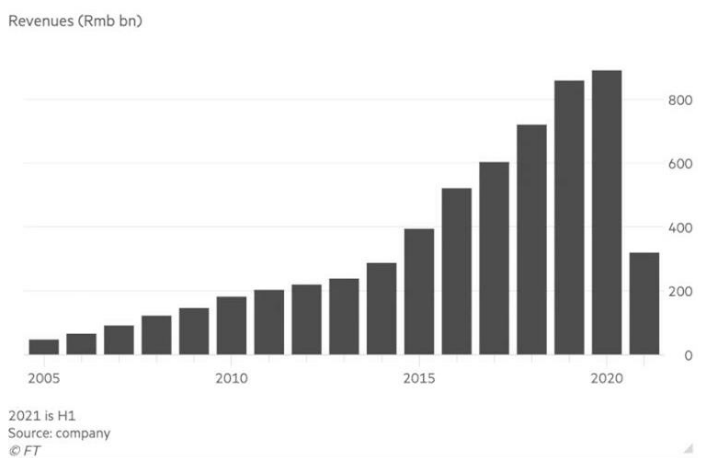

Figure 1 - A sharp drop in Huawei's revenue during the introduction of US sanctions [ibid.]

Disappointed in its core markets, Huawei is betting on areas that are fundamentally new to itself. One of the largest is electric vehicles and autonomous vehicles. The company began work in this direction back in 2014, however, under the conditions of US sanctions, the company began intensive development: in 2021, the staff in research and development grew to 5,000 people, and investments reached $ 1 billion. The company has no plans for its own auto production, however its engineers are now studying almost every other aspect.

A new model from Chinese automaker Beiqi was unveiled at the 2021 Shanghai Auto Show, a fully integrated electronic solution developed by Huawei. In this project, the company used the experience gained over the years in telecommunications. For example, in the production of base stations with protection from extreme weather conditions, which is also relevant in the automotive industry.

Most of the semiconductor products needed in automotive electronics are produced without using advanced manufacturing processes, and there is no need to import at all, since most of the solutions are available in China.

But Huawei has goals far beyond sustaining business in the near future: the company aims to be a technology pioneer. Huawei engineers will work exclusively in basic science, exploring opportunities to make a technological breakthrough even without a clear idea of how it can be applied in business. The HiSilicon Research Group, the company's chip manufacturing arm, continued its scientific research even as US sanctions made it impossible for the Shenzhen-based company to produce cutting-edge products. In 2021, Huawei invested 141.9 billion yuan ($22 billion) in research and development, which is almost 16% of its total revenue [Founder of Huawei urges…, www].

The driving force behind this trend is Huawei's desire to gain independence from foreign technology and lay the foundation for the growth of royalties for intellectual property. In 5G technologies, Huawei holds one of the largest patent portfolios. And thus, competitors Ericsson and Nokia are forced to make certain payments in favor of Huawei, even taking into account the fact that the company has lost 5G contracts in many Western countries. Therefore, now Huawei is actively working on 6G technologies in order to seize the patent front in a timely manner and be sure that Huawei will not depend on anyone when they enter the market. In addition to conventional telecommunication capabilities, 6G will be able to be used in various sensors and detectors and open up new opportunities for a variety of areas from healthcare to surveillance [Huawei named…, www].

Huawei's aspirations led to the emergence of a "startup collecting" strategy. This strategy, according to Huawei, will cause a mentality adjustment among Huawei employees working in the research field.

Therefore, Huawei has no shortage of research projects, and is well aware that some projects may fail in the short term.

Methods

In the study, the authors used some methods such as analysis and synthesis, induction and deduction, historical and logical, abstraction and concretization.

Results

Huawei was founded in 1987 in Shenzhen by former officer, deputy head of the engineering corps of the Chinese People's Liberation Army, Ren Zhengfei. Its authorized capital was only 20,000 yuan [ibid.].

Huawei's name consists of two parts "Hua" and "Wei", which can be translated as "great action" or "Chinese achievement". According to some sources, the name was invented by Ren himself and it is nothing more than just a beautiful combination of sounds.

The purpose of the creation of Huawei was to develop Chinese telecommunications technologies in order to oust imported companies from China, whose share was 100%. In the 1980s, this was the goal of the entire Chinese government. Over time, Huawei has expanded its business to include consumer electronics, service and consulting.

Due to US sanctions against Huawei, the company's profit in the first quarter of 2022 decreased by 67%. The company has been under US sanctions for the third year. Restrictions around the world prevent U.S. and foreign companies from supplying U.S. technology and software to Huawei.

The Huawei report indicates that the company's profitability in the first quarter of 2022 was 4.3% (in 2021 this figure was 11.1%). Also, the net profit of the Chinese electronics manufacturer declined by 67% year on year. From 16.9 billion yuan ($2.58 billion) in 2021 to 5.6 billion yuan ($855 million) in 2022 [ibid.].

It follows from the company's report that Huawei's revenue amounted to 131 billion yuan ($19.8 billion), which is 13.9% less than in the same period in 2021, and more than 27% lower than in the fourth quarter of 2021. Huawei's actual sales have fallen for the sixth consecutive fiscal quarter.

Huawei explained that the significant decline in the company's profits is primarily due to active and large own investments in research and development of its own technologies, which Huawei needs to offset the effects of US sanctions and start developing on its own technologies.

In 2021, the company allocated 21% of its annual revenue to research and development. According to a company representative, Huawei in the first quarter again increased its investment in scientific activities.

Huawei previously said it had nearly doubled its R&D budget over the past five years to $22.1 billion in 2021. That's more than any company outside the US. Research spending accounts for 22.4% of its sales, nearly double that of Amazon and Alphabet, Google's parent company [ibid.].

Due to sanctions and huge spending on research and development, Huawei lost almost a third of its revenue in 2021. However, at the same time, investment in research has increased the company's patent portfolio. So, in 2021, Huawei received more than 9 thousand patents, their total number reached 110 thousand. In 2021, 107 thousand employees of the company (more than half of the state) were engaged in research and development (R&D). For comparison, according to Microsoft's annual report, about 60 thousand employees of the company (a third of their total number) are engaged in similar work [ibid.].

Recommendations and conclusions

Today, the Chinese company Huawei has switched to "survival mode" by the decision of its management and personally CEO Ren Zhengfei. The CEO of the company believes that Huawei has fallen on very difficult times, representing a real threat to its existence.

In an address to Huawei employees, Ren Zhengfei said the company needs to focus on profit and quality in order to survive. Focusing on money and product quality alone will not be enough to ensure Huawei's continued existence. Along with this, the company needs to stop prioritizing its growth and scaling.

The head of the company sees a threat to Huawei not in specific countries and their authorities, despite the fact that the United States has regularly interfered with its business for more than four years as part of a trade war with China. Today, the threat is all over the world, in the entire global economy, which in the very near future will face a recession. 2023-2025 will be the most difficult years for the entire economy of the world, and during this period, Huawei needs to focus on survival.

The company's management believes that Huawei definitely needs to freeze complex projects with a high risk of failure [Huawei announces…, www]. The company also needs to reduce its investment in research and development in a number of areas, including electric vehicles, and abandon plans that are unlikely to make a profit from the implementation of which is not high.

In addition to this, Huawei is likely to curtail its activities in some countries around the world. Huawei's business in them will either be reduced or completely closed.

An important point for Huawei is the issue of personnel. While there is no data, whether the company intends to arrange a mass reduction of staff. Most likely the company will decide on repatriation in the near future. It implies the recall of Chinese employees of Huawei, working in other countries, to their homeland.

Huawei plans to concentrate primarily on customer service. Also, the company's management plans to develop it in the field of IT infrastructure. The company's management sees this area as very promising for Huawei.

It is also worth noting that the reasons that led to the decline in Huawei are the economic consequences of the COVID-19 coronavirus. While the whole world is waiving all covid restrictions, the Chinese authorities continue to arrange lockdowns for their population, closing production and shops.

Huawei has been leveraging China for US authorities for more than three years. Former US President Donald Trump began using her in this vein back in the spring of 2019, depriving her of access to Google services and thereby bringing down sales of her Android smartphones.

All this directly affects the stability of Huawei.

Today, under restrictions from the United States, Huawei tacitly supports the sanctions imposed on Russia by the American authorities together with the European ones. The company halved the import of its mobile equipment to Russia and completely stopped deliveries of telecom equipment, in particular, base stations.

Along the way, Huawei removes the software of Russian banks from its AppGallery app store, closes offline stores and fires staff, besides massively. At the beginning of August 2022, the Huawei branded online store also stopped its work.

Ways to survive in the face of sanctions from the United States, Huawei executives named on March 28, 2022, during the reporting conference following the results of 2021. Guo Ping, chairman of the board of the corporation, said that the company needs to increase the volume of strategic investments.

According to Guo, Huawei needs to develop in three directions – theoretical breakthroughs, architectural reconstruction, and software reconstruction. The company's management noticed that Huawei is going through a new stage of industrial reconstruction in order to adapt to current trends in digital and intelligent research [How Huawei will produce smartphones under sanctions, www].

“The problems we are facing are not yet resolved, and Huawei will continue to strive for survival and development,” Guo stated [History of Huawei, www]. The top manager of the company noted the importance of achieving carbon neutrality, a deeper study of the relationship between technology and medicine, and supporting automakers involved in the production of smart cars.

Huawei Technologies founder Ren Zhengfei called on the company's employees to "lead the world" in software. In his speech at the conference, he said that the company needs to focus on software, because future developments in this area "are outside the control of the United States." Huawei should focus on building software ecosystems such as Harmony OS, Mindspore cloud AI system, and other products [US attack on Huawei heralds a change in global trade, www].

The company's management says that the promotion of the software will depend on finding the right business model; the company must distribute open source software. The Welink business communication platform developed by Huawei relied on traditional software licensing and that such a format is not suitable for cloud computing, which made Welink inferior to the competing Alibaba product [Technological cold war…, www].

Given the complexity of operating in the US, the company should strengthen its position at home in China. “When we dominate Europe, the Asia-Pacific region and Africa, the United States will not be able to enter our territory if they are closed to us and their standards do not match ours” [History of Huawei, www].

References

1. *Founder of Huawei urges the company to focus on software development to circumvent US sanctions.* Available at: https://habr.com/ru/news/ [Accessed 12/12/2022]
2. *History of Huawei.* Available at: https://huawei-msc.ru/ [Accessed 12/12/2022]
3. *How Huawei will produce smartphones under sanctions.* Available at: https://mobile-review.com/ [Accessed 12/12/2022]
4. *Huawei admitted that now it just needs to survive*. Available at: https://www.ixbt.com/ [Accessed 12/12/2022]
5. *Huawei announces “survival mode”.* Available at: https://www.cnews.ru/ [Accessed 12/12/2022]
6. *Huawei decided to completely rethink the business model in order to survive under the sanctions.* Available at: https://www.ft.com/ [Accessed 12/12/2022]
7. *Huawei has developed a strategy to combat US sanctions.* Available at: https://4hw.ru/ [Accessed 12/12/2022]
8. *Huawei named a way to survive under sanctions.* Available at: https://lenta.ru/ [Accessed 12/12/2022]
9. *Huawei's profit in the first quarter of 2022 decreased by 67%.* Available at: https://habr.com/ [Accessed 12/12/2022]
10. *Technological cold war: what is happening with Huawei and why the US and Europe are in conflict with it.* Available at: https://vc.ru/ [Accessed 12/12/2022]
11. *US attack on Huawei heralds a change in global trade*. Available at: https://finance.rambler.ru/business/ [Accessed 12/12/2022]
12. *USA and Huawei: sanctions and prospects.* Available at: https://club.dns-shop.ru/ [Accessed 12/12/2022]
13. *What conclusions follow from the US sanctions against Huawei*. Available at: https://vc.ru/ [Accessed 12/12/2022]

Новая бизнес-модель китайской компании Huawei, которая находится под санкциями США

Чжан Ичэн

Студент,
Российский университет дружбы народов,
117198, Российская Федерация, Москва, ул. Миклухо-Маклая, 10;
e-mail: 1132215765@rudn.ru

Нежникова Екатерина Владимировна

Доктор экономических наук, профессор,
Российский университет дружбы народов,
117198, Российская Федерация, Москва, ул. Миклухо-Маклая, 10;
e-mail: nezhnikova-ev@rudn.ru

Аннотация

Актуальность темы статьи обусловлена тем, что в 2018 году власти США обвинили Huawei в промышленном шпионаже и внедрении закладок в телекоммуникационное оборудование. Всего было предъявлено 23 обвинения. По мнению политологов и экономистов, корни проблемы гораздо глубже официальных обвинений. Huawei стала заложником противостояния США и Китая за доминирование на рынке технологий. Компания, создавшая оборудование для сетей 5G, обогнала ближайшего конкурента Cisco на

12-18 месяцев. Япония, Австралия, Новая Зеландия, Канада в условиях введенных санкций отказались от китайской продукции. Другие страны ищут компромиссные решения. На примере Huawei мы стали свидетелями прямого противостояния государства и бизнеса, когда решение президента США фактически запрещает деятельность одного из крупнейших производителей телеком-оборудования, реального конкурента американской Cisco. Американские санкции против Huawei могут полностью изменить привычную картину мира. Ошибочно полагать, что за ними стоит только одно желание регулировать присутствие очень крупного конкурента на местном рынке. И уж тем более не только Huawei представляет угрозу для единого правительства. Сегодняшние санкции против Huawei вызваны не якобы угрожающими национальной безопасности «закладками» в оборудовании, а возможным технологическим отставанием собственного IT-гиганта и нежеланием терять свои позиции на международной арене.

Для цитирования в научных исследованиях

Чжан Ичэн, Нежникова Е.В. New business model of the Chinese company Huawei, which is under US sanctions // Экономика: вчера, сегодня, завтра. 2023. Том 13. № 2А. С. 329-336. DOI: 10.34670/AR.2023.70.92.030

Ключевые слова

Санкции, бизнес-модель, конкуренция, противостояние, телекоммуникационное оборудование.

Библиография

1. Founder of Huawei urges the company to focus on software development to circumvent US sanctions. URL: https://habr.com/ru/news/
2. History of Huawei. URL: https://huawei-msc.ru/
3. How Huawei will produce smartphones under sanctions. URL: https://mobile-review.com/
4. Huawei admitted that now it just needs to survive. URL: https://www.ixbt.com/
5. Huawei announces “survival mode”. URL: https://www.cnews.ru/
6. Huawei decided to completely rethink the business model in order to survive under the sanctions. URL: https://www.ft.com/
7. Huawei has developed a strategy to combat US sanctions. URL: https://4hw.ru/
8. Huawei named a way to survive under sanctions. URL: https://lenta.ru/
9. Huawei's profit in the first quarter of 2022 decreased by 67%. URL: https://habr.com/
10. Technological cold war: what is happening with Huawei and why the US and Europe are in conflict with it. URL: https://vc.ru/
11. US attack on Huawei heralds a change in global trade. URL: https://finance.rambler.ru/business/
12. USA and Huawei: sanctions and prospects. URL: https://club.dns-shop.ru/
13. What conclusions follow from the US sanctions against Huawei. URL: https://vc.ru/