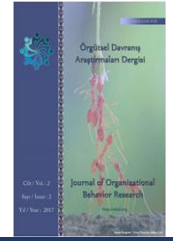




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## ORGANIZATIONAL BEHAVIOR OF STEEL MARKET PLAYERS IN THE CONTEXT OF A PANDEMIC

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### ABSTRACT

*In 2020, all sectors of the world economy faced the need to restructure the established business processes, search for new labor organization methods, and develop new options to motivate employees. The reason was the global pandemic, in which most economic entities were forced to switch to work in the "online" mode. This problem also affected major steel market players, who, among other things, were forced to work out options to develop in the face of a sharp decline in prices for the industry products. At the same time, the behavior of most steel producers was not systematic, was built spontaneously, and did not enable the company to overcome emerging difficulties. At the same time, a number of large corporations were able to quickly adapt to new conditions and prevent the decline of their companies thanks to well-established organizational strategies. In general, this experience has become an important tool for flexible corporate management during the period of the need to restructure the business format. Lockdowns are periodically repeated around the world, and the experience to work under these conditions becomes an opportunity to minimize losses and confirms the relevance and need to study organizational behavior of steel market players in a pandemic.*

**Keywords:** Organizational behavior, Pandemic, Management, Steel market, Corporations, Remote technologies.

### INTRODUCTION

Studying organizational behavior shown by steel market players over the pandemic period enables identifying the main options to manage enterprises in the context of economic crisis, which are common to each modern company, prevent a failure in the systemically developed organizations, and provide it with the possibility to neutralize the emerging threats.

**The aim of the article** is was to study organizational behavior trends peculiar to steel market players in the face of the pandemic.

**The research objectives** were:

- ~ to identify organizational problems in the context of the pandemic;
- ~ to study the positive experience of the world steel producers in building organizational behavior processes in the face of the pandemic;
- ~ to systemize long-term solutions to diversify organizational behavior in the context of the pandemic.

### MATERIALS AND METHODS

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The research was based on statistics on world market players obtained during the 2020 pandemic, including Russian corporations and Chinese representatives. The analysis was carried out based on open sources that publish indicators of steel market production, price fluctuations, and efficiency of the industry under consideration. The materials of forums and conferences attended by steel industry representatives who described their organizational behavior experience over the pandemic were also studied. The results of the author's individual observations were also used. At the same time, a comparative historical method, regression and visual data analysis, comparison and analog method, questionnaires, empirical data statistical analysis, expert-analytical method, and others were used.

## RESULTS AND DISCUSSION

Organizational behavior is the subject of study for many contemporary researchers. The works of scientists are emphasized like the works by Gallardo-Gallardo *et al.* (2013), Lazarov and Caligure (2001), and Yan *et al.* (2002) devoted to organizational behavior in the context of international business, including reducing staff turnover due to crisis.

When determining a corporate organizational behavior, Gallardo-Gallardo, *et al.* (2003) defined two complex approaches - objective and subjective. The first approach considers the company and its behavior processes as employee characteristics and includes the signs of motivation and desire to achieve the company's success, time leadership, decisions made in a crisis. As part of a subjective approach, organizational behavior is considered as corporate management capital. In this regard, managers treat the company's personnel as a valuable corporate asset, which enables balancing the key organizational processes and forming the most proper trend in the corporate organizational behavior.

In the works by Thunnissen *et al.* (2013) and Ariss *et al.* (2014), these approaches are viewed more broadly. From the authors' point of view, organizational behavior is an exceptional characteristic of the actions performed by one or more employees, that is, it is considered exclusively, and the employee behavior system can be in general presented as corporate strategic development.

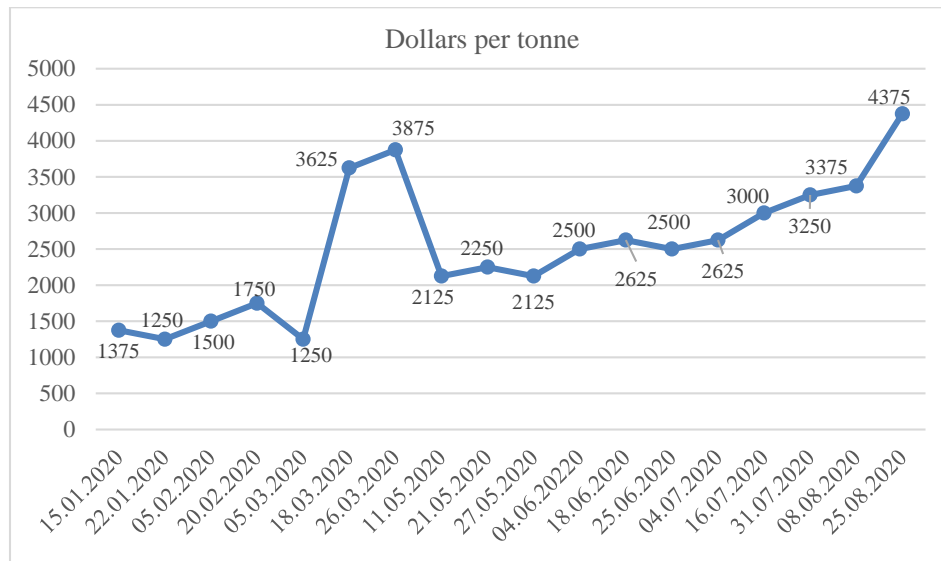
In general, we can agree with the authors, since corporate organizational behavior must meet the corporate strategic needs, and, accordingly, quickly refocus on the result and potential to take "strategic market objects." This approach is relevant for developing organizations, because, formally, all workplaces are a strategic and actual capacity of each employee is clearly seen.

At the same time, it is worth noting that the unstable external environment poses many challenges to Russian and foreign companies, dealing with which requires a significant adjustment of the established corporate organizational behavior patterns. Thus, the pandemic "COVID19" was a test for many world steel market players and the Chinese manufacturers were the first to "feel" its influence deeply (Magomedova *et al.*, 2020). As a result of a total lockdown in China, demand for all consumer goods fell sharply, respectively, steel production across the country was reduced, which, in turn, marked the beginning of a series of negative consequences for the global economy in general.

A month later, the same consequences overtook Russia, Europe, and the United States (Siyal *et al.*, 2020). The closure of many plants and transportation restrictions around the world disrupted important supply chains - from raw materials to end products. In this context, the steel



industry suffered from the so-called "domino effect": the pandemic blocked the automotive industry, engineering, instrument manufacture, construction almost all over the world. As a result, the demand for steel decreased significantly, which led to a remarkable decrease in prices and output volumes produced by these companies. To prove this, price fluctuations for steel fittings in 2020 should be given (**Figure 1**).



**Figure 1.** Price fluctuation for steel fittings in 2020, USD/ton

Source: <https://monitoring.rosfirm.ru/chart/armatura-pmc594.htm> (Date of access: 21.01.2021)



**Figure 1** shows that after peaking to the highest metal prices in March 2020, the market dropped significantly in May. After prices for fittings plunged in May, they began to recover only by mid-June 2020.

At the same time, starting from July 2020, there has been a significant increase in prices for fittings, which was associated with delayed demand for products in other industries and with the opening of a number of transport corridors across the globe. This was a new "test" for market players who had rebuilt their business processes and slightly reduced sales by that time.

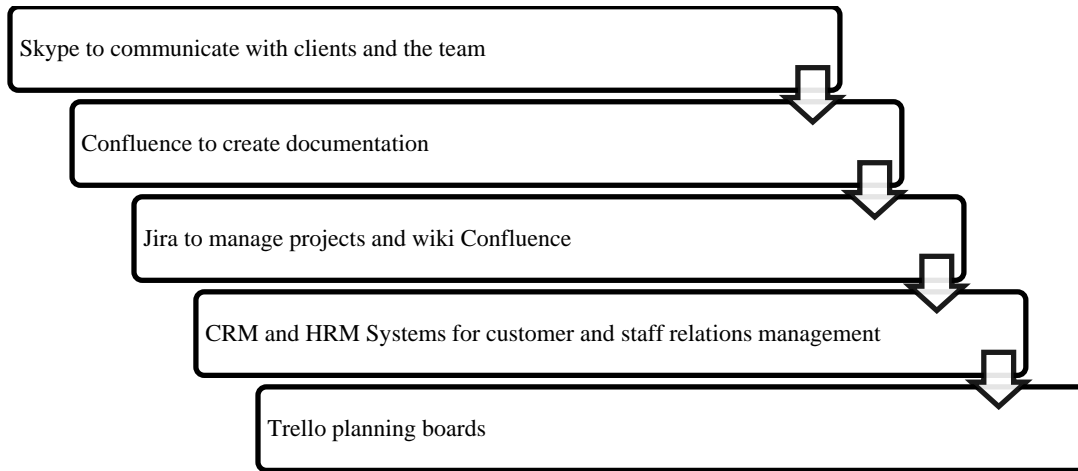
The facts presented above evidence significant steel market transformations in 2020, which caused the need to restructure the organizational conditions for the largest companies to operate in the industry around the world.

In general, these changes affected the following factors:

- the need to change a working mode for a large number of employees to a remote one;
- reduced production volumes and surplus in steel product stock;
- failure of logistics channels and transport corridors to move products around the world;
- delays in supply of components and materials due to the closure of borders between most states;
- a spike in steel prices, which entailed difficulties in making any forecasts and the inability to predict the situation for the near future.

Accordingly, other processes were deformed, one way or another associated with the problems that overtook the market.

To study corporate organizational behavior in the pandemic period and the challenges it caused, examples of positive experiences in solving emerging difficulties should be further considered. Analyzing the positive experience to adapt employees to remote working with no loss in quality shown by the largest market player Rusal, a number of technologies that were used to transfer employees to a new working mode should be emphasized (<https://hrlider.ru/posts/rusal/>). These technologies are shown in **Figure 2**.



**Figure 2.** Remote technologies Rusal used when transferring employees to a remote working mode

Source: Compiled by the author

**Table 1** summarizes the mentioned technologies and the impact they produce on employee performance.

**Table 1.** Remote technologies to be used when transferring employees to remote working

Technology	The objective of using	Impact on work quality
Skype	Communication with clients and the team	When holding general meetings, all members of the group must be presentable, which leaves no opportunity to relax when being informed of such events more frequently.
Confluence	Documentation creation	Accelerated process of transferring documents from one user to another and its processing quality
Jira to manage projects and wiki Confluence	Project management	Clear distribution of processes and responsibilities among staff involved in specific projects
CRM and HRM systems	Customer and staff relations management	Quick reporting on online meetings and calls to customers, results of the actions performed, getting in touch with regular customers
Trello planning boards	Business scheduling	Enables distributing responsibilities accurately and clearly among all employees and clearly shows what must be

done by each employee and when it must be done. The employer can control an employee at any time via video communications		
Google Drive cloud disk	Information storage location	Enables generating a total document flow, accelerates data processing

Source: Compiled by the author

The use of the presented technologies enabled the corporation to build an effective process of work time management, to control the personnel while motivating them to work efficiently in the team (<http://www.up-pro.ru/library/strategy/management/sokraschenie-dlya-rosta.html>). It is the team approach used in remote working that turned out to be optimal since in case one employee doesn't want to do his duties, he let others down, which generally affects his decisions and as a result, he will accept such interaction conditions. At the same time, an effectively built organizational process made it possible to improve the key performance indicators of Rusal employees by 13%. This proved the ability to organize work of office employees into the "home office" mode, which was the reason to restructure other business processes in the corporate management structure. According to corporate experts, up to 30% of office staff were transferred to work in such a mode, which reduced the cost of renting offices and equipping them (<https://iz.ru/1016252/roza-almakunova/udalenka-ne-za-gorami-krupneishie-kompanii-dumaiut-sokhranit-rabotu-vne-ofisa>).

Proceeding with the study of Chinese steel manufacturer experience, it is worth noting that it is largely based on regularly held videoconferences, the participants of which are all employees of departments, employees transferred to remote work are divided into mini-groups (4-5 people), within which similar functions are performed and each of the employees depends on the results of the group members.

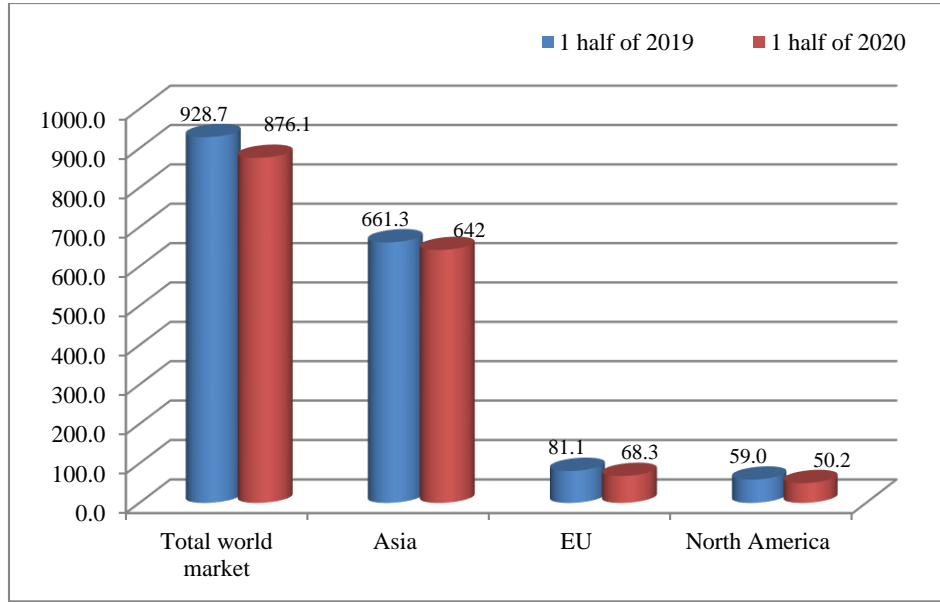
Thus during the lockdown, the Aluminum Corp of China introduced a new position of a special employee monitoring on-line meeting schedule and operating the results (<https://finrange.com/company/NYSE:ACH/industry-analysis>). Employees were able to evaluate the meeting on a five-point scale and formulate their wishes for the future. The problem to adapt Chinese steel producers was the Chinese set of mind, who had difficulties in switching to online communication with partners. Their business etiquette suggests face-to-face meetings. They cannot do without it - the residents of China have not yet developed another tool to "diagnose" people. That is why it was rather problematic to make employees conclude contracts with suppliers and customers online. Normally, this operation was necessarily combined with a tea party, when a corporation employee could understand whether he could benefit from cooperation with a company a representative of which is his partner.

Despite the crisis, Chinese metallurgists remained the key producers in the world steel market (<https://www.metalinfo.ru/ru/news/118102>). In the context of the pandemic, they began to filter the incoming requests. Attractive projects are processed during the first online communication. However, managers offer sharply inflated prices for technology development, industrialization, or preproduction. If a partner did not leave the meeting to "think it over," the dialogue continues and cooperation on the same financial terms is discussed. Thus, despite all visible difficulties, each market player adapted to current conditions in his own way.



Proceeding to the issue of "reduced production volumes and surpluses in steel product stock", it should be noted that virtually all market players faced it in April 2020.

Thus, according to the World Steel Association, world steel production in 64 countries amounted to 148.3 million tons in June 2020, which is 7.0% less than in June 2019. Some steel market indicators of the first half of the year are given in **Figure 3** (<https://www.worldsteel.org/>).



**Figure 3.** Steel production volume for the first half of 2020 compared to the previous period, mln tons.

Source: compiled by the author using World Steel Association website data

It can be seen that in the first half of 2020 (the pandemic peak), world steel production decreased by 6.0% compared to the same period in 2019. Moreover, if in Asia, the decrease was 3.0%, in the EU, it was 18.7%. Steel production in North America was significantly affected, having reduced by 17.6% compared to the same period in 2019.

Due to the inability to sell manufactured products, a number of plants in Europe closed production down. In general, more than 30% of EU capacities did not operate and the operation rate runs lower than during the 2008-2009 crisis. Due to extensive downtime, metallurgical companies experienced an acute shortage of liquidity, as a result of which metal products were sold at the lowest prices. At the same time, stocks are decreased significantly. Under these conditions, the EU governments came to aid European metallurgy. The ECE introduced quarterly quotas for steel imports recalculating them for the majority of importing countries, thereby adopting a policy promoting protectionism ([https://1prime.ru/state\\_regulation/20190117/829620807.html](https://1prime.ru/state_regulation/20190117/829620807.html)).

At the same time, a number of corporations adopted a production diversification policy, moving from complex production to expanding a primary product. Environmental production modernization is referred to, the focus on which was taken by the Russian Rusal, having protected itself from the impact of sanctions in the crisis context, since unlike high-tech

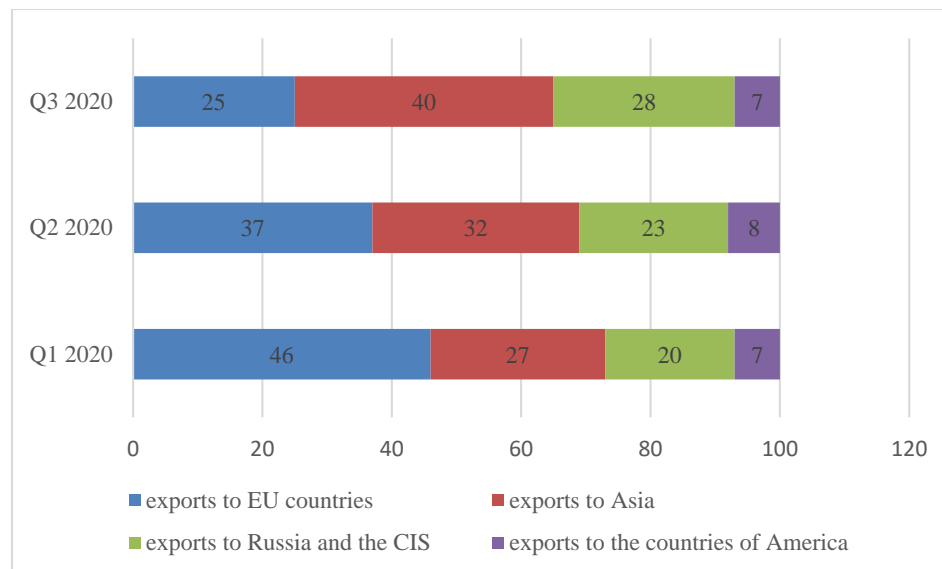


products, it is more difficult to impose sanctions on raw materials, it is easier to sell and is widely demanded globally (<http://www.fomag.ru/ru/news/companiespage.aspx?news=7159>).

The next issue that required restructuring the processes of steel producers organization was the failure of logistics channels and transport corridors to transfer products to different countries around the world. Since most borders were closed, and goods delivery time increased several times, many companies were faced with the need to find new suppliers and restructure supply chains that made it possible not to close production down.

To ensure stable supplies, Rusal diversified the logistics channels, which involved increasing the share of fast, though expensive, delivery methods. This reduced delivery time, resulting in substantial savings in working capital financing costs.

Spike in steel prices was a problem as well, which entailed difficulties in making any forecasts and the inability to predict the situation in the near future. Thus, an export flow pattern including key steel suppliers is shown in **Figure 4**.



**Figure 4.** Distribution of export flows including major steel suppliers in 2020, %

Source: compiled by the author using World Steel Association website data

**Figure 4** shows a non-sync flow of exported products globally. Thus, in the second quarter of 2020 and afterward, flows moved from Europe to Asian countries. This is due to China's withdrawal from the lockdown and PRC's economic recovery. However, such trends do not enable building the planned sales chains since the lack of stability reduces the likelihood of forecast precision. Under these conditions, a number of major steel manufacturers applied to the Scrum methodology, which promotes restructuring planning processes into a project-based approach

([https://finance.rambler.ru/other/44905888/?utm\\_content=finance\\_media&utm\\_medium=read\\_more&utm\\_source=copylink](https://finance.rambler.ru/other/44905888/?utm_content=finance_media&utm_medium=read_more&utm_source=copylink)).

Projects developed using these technologies are clear and more efficient to be implemented in a corporate operation. Transition to project-oriented planning took place in some UC Rusal (Russia) and Shougang Group (China) subsidiaries. This tool enabled redistributing investments,



forming more accurate flow movement, which in general did not reduce the amount of financing to investment projects and current corporate transactions.

## CONCLUSION

Thus, 2020 was a turning point for the organizational behavior of the majority of world steel producers. Given the sharp decline in demand and suspended production, they were forced to use new organizational mechanisms. In this context, new options for organizational processes were formed, including options to build remote working mode for steel producers, new logistics mechanisms, and options to use project technologies in planning financial and investment flows. The most feasible approach was the process approach, which made it possible to form the firmest work plan for each employee while strengthening control over their work and increasing labor productivity.

The corporate organizational structure software has also changed, contributing to accelerated adaptation to the use of remote technologies in company management.

Currently, the market is gradually recovering, most of the world's producers are beginning to operate steadily. Certain stable demand recovery occurred in July-August 2020.

In case market producers use the considered workflow technology successfully, a significant reduction in surplus of steel stock can be achieved, gradually reaching the balance and eliminating excess.

However, to a certain extent, all steel producers should reduce their production capacities, both current and planned.

At the same time, effective management of world steel producer organizational behavior will minimize losses and stabilize demand for products, gradually taking back their market positions with the same price range and sales volumes.

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