



E-ISSN: 3108-852X

APSSHS

Academic Publications of Social Sciences and Humanities Studies
2021, Volume 1, Page No: 20-25

Available online at: <https://apsshs.com/>

Journal of Applied Organizational Systems and Behavior

Organizational Behavior Of Steel Market Corporations Amid The Pandemic

Marco Rossi¹, Giulia Bianchi^{2*}, Paolo Conti¹, Matteo Greco²

1. Department of Organizational Behavior, School of Management, University of Milan, Milan, Italy.
2. Department of Individual Decision Sciences, Faculty of Economics, University of Padua, Padua, Italy.

Abstract

In 2020, the global pandemic compelled all sectors of the world economy to overhaul their existing business processes, explore novel approaches to labor organization, and devise new employee motivation strategies. Most economic entities had to transition rapidly to remote or "online" work modes. This shift notably impacted leading steel market players, who also faced the challenge of navigating a steep drop in industry product prices. For many steel producers, their response was largely uncoordinated and reactive, failing to effectively address the difficulties encountered. Conversely, several major corporations successfully adapted to the changing environment by leveraging well-established organizational strategies, which helped them avoid significant downturns. Overall, this experience has provided valuable insights into agile corporate management amid business restructuring needs. As lockdowns continue to recur globally, the ability to operate effectively under such conditions becomes critical for minimizing losses and highlights the importance of studying the organizational behavior of steel market participants during a pandemic.

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

How to cite this article: Rossi M, Bianchi G, Conti P, Greco M. Organizational behavior of steel market corporations amid the pandemic. J Appl Organ Syst Behav. 2021;1:20-5.

Received: 07 September 2021; **Revised:** 02 December 2021; **Accepted:** 03 December 2021

Corresponding author: Giulia Bianchi

E-mail ✉ giulia.bianchi@gmail.com

Introduction

Examining the organizational behavior exhibited by steel market participants during the pandemic period allows for the identification of key strategies to manage enterprises amid economic crises, which are common across contemporary companies, help avert failures in systematically structured organizations, and enable them to effectively counteract emerging threats.

The purpose of this article was to analyze the trends in organizational behavior specific to steel market players amid the pandemic.

The study aimed to:

- pinpoint organizational challenges arising during the pandemic;
- investigate the successful organizational behavior practices employed by global steel producers throughout the pandemic;
- categorize sustainable strategies for diversifying organizational behavior in pandemic conditions.

Materials and Methods

This study relied on statistical data from global market participants collected during the 2020 pandemic, including Russian and Chinese corporations. The analysis utilized publicly available sources that report on steel production volumes, price volatility, and industry performance metrics. Additionally, materials from industry forums and conferences, where steel sector



© 2021 The Author(s).

Copyright CC BY-NC-SA 4.0

representatives shared their experiences regarding organizational behavior during the pandemic, were reviewed. The research also incorporated the author's own observations. Various methodologies were employed, including comparative historical analysis, regression and visual data interpretation, comparative and analogical methods, surveys, statistical examination of empirical data, expert-analytical techniques, among others.

Results and Discussion

Organizational behavior continues to be a focal point for numerous contemporary scholars. Notable contributions include those by Gallardo-Gallardo *et al.* (2013), Lazarov and Caligure (2001), and Yan *et al.* (2002), which explore organizational behavior within the scope of international business, particularly emphasizing strategies for minimizing staff turnover during crises[1–3].

Gallardo-Gallardo *et al.* (2003) described two comprehensive frameworks for understanding corporate organizational behavior: the objective and subjective approaches[1]. The objective perspective views the company and its behavioral processes through the lens of employee traits, encompassing factors such as motivation, aspiration toward corporate success, time management, and crisis decision-making. In contrast, the subjective approach treats organizational behavior as corporate management capital, where management perceives personnel as a valuable asset instrumental in balancing critical organizational processes and shaping optimal behavioral trends within the company.

Further expanding on these concepts, Thunnissen *et al.* (2013) and Ariss *et al.* (2014) interpret organizational behavior as the distinctive pattern of actions executed by one or more employees, considering it as an integral element of corporate strategic development[4, 5].

Overall, these perspectives align with the view that corporate organizational behavior must align with strategic business goals and rapidly adapt to capture “strategic market objects.” This outlook is particularly relevant for dynamic organizations where each position constitutes a strategic asset, with individual employee capacities clearly visible.

However, it is important to highlight that an unstable external environment presents significant challenges for both Russian and international companies, necessitating substantial modifications to established organizational behavior frameworks. The COVID-19 pandemic served as a critical test for many global steel market players, with Chinese manufacturers among the first to experience its profound effects [6, 7]. The nationwide lockdown in China led to a drastic drop in consumer demand, which caused steel production reductions and triggered a cascade of negative repercussions for the global economy.

Within a month, similar impacts extended to Russia, Europe, and the United States [8]. Widespread plant closures and global transport restrictions severely disrupted supply chains spanning from raw materials to finished goods. The steel industry was particularly affected by a “domino effect” as the pandemic halted activity in key sectors such as automotive, engineering, instrumentation, and construction worldwide. This disruption caused a sharp decline in steel demand, leading to a significant reduction in both prices and production volumes. This trend is clearly illustrated by the price fluctuations of steel fittings throughout 2020 (**Figure 1**).

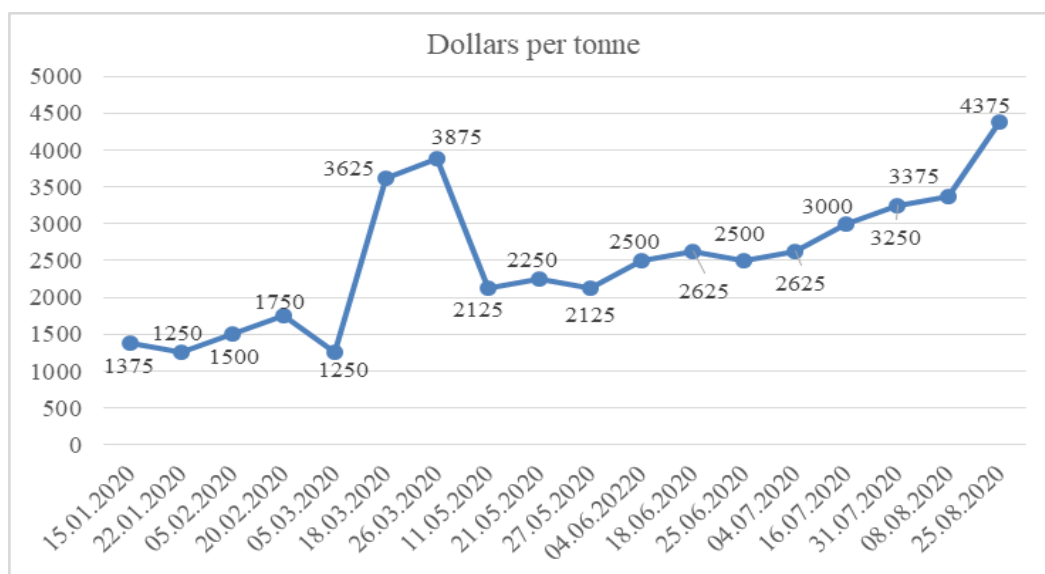


Figure 1. Price fluctuation for steel fittings in 2020, USD/ton

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

Figure 1 illustrates that metal prices reached their peak in March 2020 but experienced a sharp decline by May. Following this drop in fittings prices, recovery began only around mid-June 2020.

From July 2020 onwards, there was a notable surge in fittings prices, driven by postponed demand from various industries and the reopening of several global transport corridors. This resurgence posed a fresh challenge for market participants who had by then restructured their operations and slightly reduced sales.

The data above highlights the profound transformations in the steel market during 2020, which necessitated a reorganization of operational frameworks for major companies worldwide.

These developments primarily impacted several key areas:

- the transition of many employees to remote work arrangements;
- decreased production outputs coupled with excess inventory of steel products;
- disruptions in logistics networks and transport routes essential for product distribution;
- delays in the supply chain due to border closures between most countries;
- volatility in steel prices that complicated forecasting and created uncertainty about near-term market conditions.

Consequently, numerous related processes experienced distortions as they were directly or indirectly affected by these market challenges.

To better understand how corporate organizational behavior evolved amid the pandemic and the obstacles encountered, it is important to examine successful cases of overcoming these difficulties.

One notable example is the leading market player Rusal, which demonstrated effective adaptation of its workforce to remote operations without sacrificing quality. The suite of technologies employed to facilitate this transition is detailed in **Figure 2** [9].

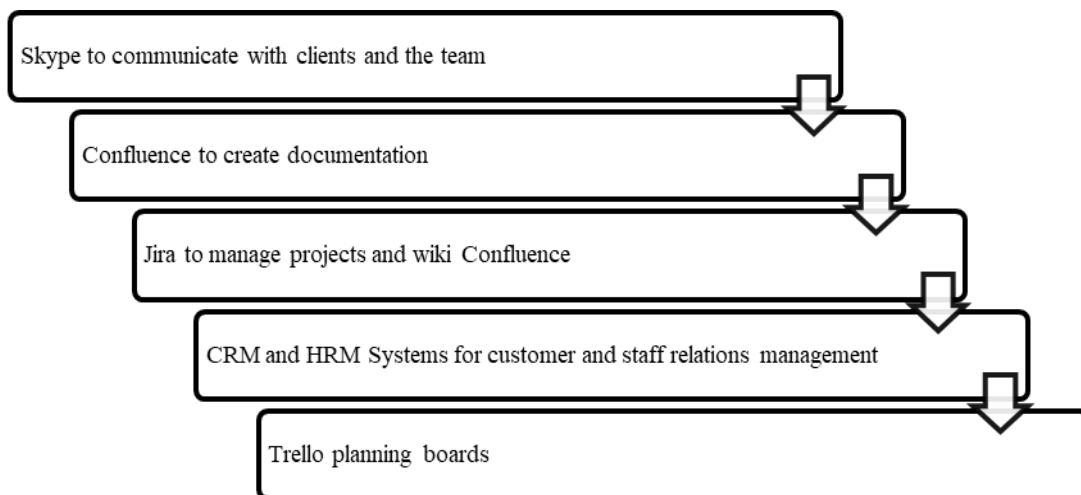


Figure 2. Remote technologies Rusal used when transferring employees to a remote working mode
Source: Compiled by the author

Table 1 presents an overview of the remote technologies discussed, highlighting their specific purposes and the effects they have on enhancing employee productivity.

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

Technology	Purpose of Use	Effect on Work Quality
Skype	Facilitates communication with clients and team members	Requires full participation in group meetings, promoting attentiveness and reducing chances to disengage during frequent updates.
Confluence	Supports creation and sharing of documentation	Speeds up document transfer between users and improves the quality of document processing.
Jira and Confluence Wiki	Manages projects	Ensures clear assignment of tasks and responsibilities among team members working on specific projects.
CRM and HRM Systems	Manages customer and employee interactions	Enables rapid reporting of online meetings and customer communications, maintaining contact with regular clients.
Trello Planning Boards	Organizes business scheduling	Allows precise allocation of duties and deadlines, with employers able to monitor employee progress via video calls anytime.
Google Drive Cloud Storage	Centralizes information storage	Facilitates comprehensive document flow and accelerates data handling.

Source: Compiled by the author

The implementation of these technologies allowed the corporation to establish an efficient system for managing work hours, overseeing staff, and encouraging productive teamwork [10]. The collaborative approach in remote work proved highly effective, as any employee neglecting their responsibilities would negatively impact the entire team, thereby influencing their own willingness to maintain such standards. Furthermore, the well-organized workflow contributed to a 13% improvement in key performance metrics among Rusal employees, demonstrating the viability of transitioning office workers to a "home office" setup and prompting a restructuring of related corporate management processes. Corporate insiders reported that nearly 30% of office personnel were shifted to remote work, which in turn lowered expenses related to office leasing and maintenance [11].

Examining the experience of Chinese steel producers reveals that their approach heavily relied on frequent videoconferences involving all department staff, where remote employees were organized into small groups of 4-5 people performing similar tasks, with each member's performance interconnected with that of their peers. During the lockdown, the Aluminum Corp of China created a dedicated role responsible for monitoring online meeting schedules and managing outcomes [12]. Participants rated meetings on a five-point scale and could offer suggestions for improvement. A key challenge for Chinese manufacturers was cultural: the traditional preference for face-to-face meetings complicated the transition to virtual negotiations, as their business etiquette heavily emphasizes personal interaction. Typically, contract discussions were accompanied by social rituals like tea gatherings, which helped employees assess the potential benefits of partnerships.

Despite the pandemic, Chinese metallurgists retained their position as dominant players in the global steel market [13]. During the crisis, they adopted a filtering system for incoming proposals, where promising projects advanced from initial online contact, but managers frequently quoted high prices for technological development, industrialization, or preproduction. If a partner did not immediately leave to reconsider, negotiations continued with the possibility of agreeing on the same financial terms. This illustrates that, despite evident obstacles, every market participant adapted uniquely to the evolving situation.

Addressing the issue of reduced production levels and excess steel inventories, it is important to note that nearly all industry players encountered this problem by April 2020. According to the World Steel Association, global steel output across 64 countries totaled 148.3 million tons in June 2020, marking a 7.0% decline compared to June 2019. Selected steel market indicators from the year's first half are displayed in **Figure 3** [14].

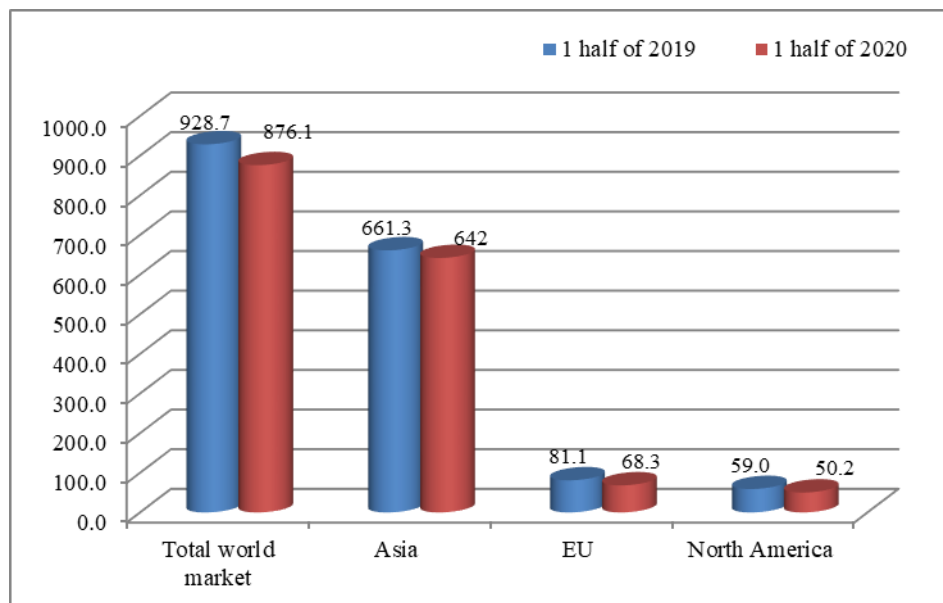


Figure 3. Steel production volume for the first half of 2020 compared to the previous period, mln tons.

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

During the first half of 2020, coinciding with the peak of the pandemic, global steel production declined by 6.0% compared to the same timeframe in 2019. The reduction was uneven across regions, with Asia experiencing a 3.0% drop, whereas the European Union faced a much sharper fall of 18.7%. North America's steel output was also severely impacted, shrinking by 17.6% relative to the previous year.

In Europe, many steel plants ceased operations due to unsold inventories, leading to over 30% of EU production capacities remaining idle—levels even lower than those recorded during the 2008-2009 financial crisis. This prolonged downtime caused severe liquidity shortages for metallurgical firms, which in turn forced metal prices down to historic lows. Although stockpiles diminished substantially, the European governments intervened to support the sector. The European Commission on Energy (ECE) implemented quarterly steel import quotas, adjusting them for most importing countries and effectively enacting protectionist measures [15].

Meanwhile, some corporations shifted their strategies toward production diversification, prioritizing the expansion of primary products over more complex manufacturing. Russian company Rusal focused on modernizing environmentally friendly production processes, which helped shield it from the crisis-related impact of sanctions. Unlike high-tech goods, raw materials are less vulnerable to sanctions, easier to market, and enjoy broad global demand [16].

Another major challenge for steel producers was the disruption of logistics networks and transport corridors necessary for moving products internationally. With most borders closed and delivery times dramatically extended, companies had to seek alternative suppliers and reorganize supply chains to avoid halting production altogether. To stabilize shipments, Rusal diversified its logistics routes, increasing reliance on faster—but costlier—transport options. This strategy reduced delivery durations and significantly cut working capital financing expenses.

Additionally, the sharp surge in steel prices created forecasting difficulties, making near-term market predictions unreliable.

Figure 4 illustrates the export flow pattern among leading steel suppliers under these conditions.

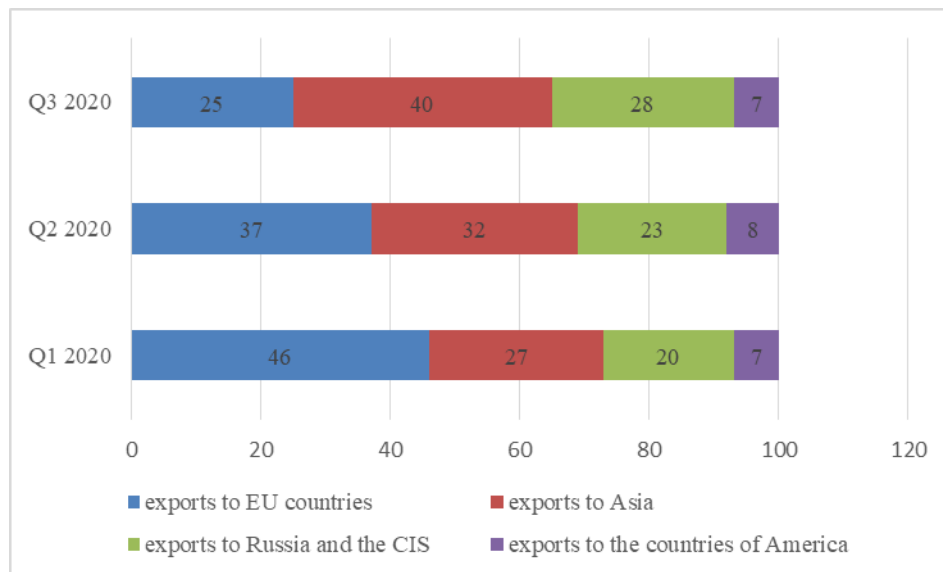


Figure 4. Distribution of export flows including major steel suppliers in 2020, %

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

Figure 4 illustrates the irregular and asynchronous global export flow of steel products, with a noticeable shift of shipments from Europe toward Asian markets starting in the second quarter of 2020 and continuing thereafter. This shift corresponds to China's exit from lockdown measures and the subsequent economic rebound in the People's Republic of China. However, these fluctuating trends hinder the establishment of reliable sales channels, as the instability decreases the accuracy of forecasting. To address these challenges, several leading steel producers adopted the Scrum methodology, which facilitates the transformation of planning activities into a project-based framework [17].

By employing these techniques, companies created projects that were clearer in scope and more effectively executed within corporate operations. Subsidiaries of UC Rusal in Russia and Shougang Group in China implemented this shift toward project-centric planning, which allowed for better allocation of investments and more precise management of product flow, without diminishing funding for investment initiatives or ongoing business activities.

Conclusion

The year 2020 marked a critical shift in the organizational behavior of global steel producers, who, faced with a drastic drop in demand and halted production, had to adopt innovative organizational strategies. This period saw the emergence of new operational frameworks, such as implementing remote work models, redesigning logistics systems, and integrating project management technologies into the planning of financial and investment activities.

Among these, the process-oriented approach proved most effective, enabling the development of detailed work plans for individual employees while enhancing supervision and boosting productivity. Additionally, updates to corporate organizational software accelerated the transition to remote management technologies across companies.

As the market gradually recovers, with noticeable stabilization and demand resurgence observed in July and August 2020, producers worldwide are resuming more consistent operations. Successful implementation of the discussed workflow

technologies can lead to a substantial decrease in steel stock surpluses, fostering a gradual return to supply-demand equilibrium.

Nevertheless, it remains necessary for steel manufacturers to scale down both existing and planned production capacities to some extent. Effective management of organizational behavior in the steel industry will help minimize losses, stabilize product demand, and support producers in reclaiming their market positions with comparable pricing and sales volumes.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: All ethical requirements for publication have been fulfilled.

References

1. Gallardo-Gallardo E, Dries N, González-Cruz TF. What is the meaning of 'talent' in the world of work? *Hum Resour Manag Rev.* 2013;23(4):290-300.
2. Lazarova M, Caligiuri P. Retaining repatriates: The role of organizational support practices. *J World Bus.* 2001;36(4):389-401.
3. Yan A, Zhu G, Hall DT. International assignments for career building: A model of agency relationships and psychological contracts. *Acad Manag Rev.* 2002;27(3):373-91.
4. Thunnissen M, Boselie P, Fruytier B. Talent management and the relevance of context: Towards a pluralistic approach. *Hum Resour Manag Rev.* 2013;23(4):326-36.
5. Al Ariss A, Cascio WF, Paauwe J. Talent management: Current theories and future research directions. *J World Bus.* 2014;49(2):173-9.
6. Alzahrani NH. Isolation, Screening, and Characterization of L-Arginase Producing Soil Fungi in Saudia Arabia. *World J Environ Biosci.* 2020;9(3):45-9.
7. Magomedova UG, Khadartseva ZA, Grechko VV, Polivanova MN, Mishvelov AE, Povetkin SN, et al. The role of Covid-19 in the acute respiratory pathology formation in children. *Pharmacophore.* 2020;11(5):61-5.
8. Siyal FJ, Shaikh ZA, Ahmed SZ, Shahid MA, Agha F, Khoso M, et al. Anxiety among COVID-19 physicians during the pandemic in the health care center of the rural region. *Arch Pharm Pract.* 2020;11(4):91-3.
9. Remoting working or hybrid working schedule? How employees of large Russian enterprises work [Internet]. 2021 [cited 2025 Sep 29]. Available from: <https://hrlider.ru/posts/rusal/>
10. Layoff for Growth: Rusal Efficiency Strategy. *Production Management Journal* [Internet]. 2021 [cited 2025 Sep 29]. Available from: <http://www.up-pro.ru/library/strategy/management/sokraschenie-dlya-rosta.html>
11. Remote working is round the corner: the largest companies flirt with an idea to keep their jobs out of the office. *Izvestia* [Internet]. 2021 [cited 2025 Sep 29]. Available from: <https://iz.ru/1016252/roza-almakunova/udalenska-ne-za-gorami-krupneishie-kompanii-dumaiut-sokhranit-rabotu-vne-ofisa>
12. Challenge: how did the pandemic affect the mining and metallurgical market? *Metallurgical Pipe Company website* [Internet]. 2021 [cited 2025 Sep 29]. Available from: <https://www.metalinfo.ru/ru/news/118102>
13. Aluminum of China American Depositary Shares [Internet]. 2021 [cited 2025 Sep 29]. Available from: <https://finrange.com/company/NYSE:ACH/industry-analysis>
14. World Steel Association official website [Internet]. 2021 [cited 2025 Sep 29]. Available from: <https://www.worldsteel.org/>
15. WSJ: EU imposes restriction on steel imports in response to US actions. *1Prime* [Internet]. 2021 [cited 2025 Sep 29]. Available from: https://1prime.ru/state_regulation/20190117/829620807.html
16. RusAl reduces aluminum production. *Financial One, Financial Markets Magazine* [Internet]. 2021 [cited 2025 Sep 29]. Available from: <http://www.fomag.ru/ru/news/companiespage.aspx?news=7159>
17. UC Rusal has become the 33rd resident of the "Russian offshore." *Rambler* [Internet]. 2021 [cited 2025 Sep 29]. Available from: [https://finance.rambler.ru/other/44905888/?utm_content=finance_media&utm_medium=read_more&utm_source=copy link](https://finance.rambler.ru/other/44905888/?utm_content=finance_media&utm_medium=read_more&utm_source=copy_link)