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Building Resilience for Surviving and Thriving in a VUCA Context

Aureliu Sindila¹, Nicolai J. Foss², Xueyong Zhan¹

¹ The Hong Kong Polytechnic University, Hong Kong SAR, ² Copenhagen Business School, Denmark

Keywords: resilience, resourcefulness, time, entrepreneurial judgments, VUCA, multinational enterprises

<https://doi.org/10.46697/001c.73812>

AIB Insights

Vol. 23, Issue 3, 2023

Surviving and thriving in the context of VUCA (volatility, uncertainty, complexity, and ambiguity) has become a pressing issue in international business. While contemporary international business scholarship offers insight into resilience-building under VUCA conditions, the mechanisms that link decision-making at the top with organizational action are less clear. We proffer a sand-clock model of resilience-building that combines resourcefulness, time interpretations, and entrepreneurial judgments. MNE decision-makers can apply the model to build resilience for surviving and thriving in a VUCA context by embracing sustainability, analyzing temporal signals, and making better judgments.

INTRODUCTION

The international business (IB) landscape can increasingly be characterized as a context of volatility, uncertainty, complexity, and ambiguity, conventionally abbreviated to VUCA (e.g., Cavusgil et al., 2021). Pandemics, economic crises, and wars have caused *slowbalization* and/or *deglobalization* (Irwin, 2022). These changes are forcing businesses to re-vamp their operating plans and supply networks (Perez-Batres & Treviño, 2020), while multinational enterprises (MNEs) must build *resilience* if they want to survive and thrive in a VUCA environment.

IB scholars offer different views of resilience depending on the context. Breen (2017) claims that leaders need resilience to effectively manage complexity and thrive in a VUCA environment, whereas others emphasize the importance of preserving personnel's skills and expertise in such a context. Cavusgil et al. (2021) describe resilience as the ability to absorb external shocks, which can be diffused from the individual to the organizational level, and emphasize the significance of fostering resilience in international, multicultural environments facing a VUCA context.

Much research differentiates organizations as resilient or non-resilient and evaluates their recovery potential as quick or slow. However, this dichotomy may constrain our understanding of the variety of resilience-building strategies (Shepherd & Williams, 2022). For example, existing research frequently ignores subjective time interpretations (perceptions connected to experience) because it conceptualizes resilience as a process with only an objective (clock/calendar) temporal dimension. This makes it challenging to understand how time may impact the accumulation and use

of resources, as well as judgments and decisions, which further complicates the processes of resource deployment and accumulation.

Our essay aims to fill these gaps. Assessing how MNEs reacted during three major crises (the 2011 Northeastern Japan earthquake, the COVID-19 pandemic, and the 2022 Russian invasion of Ukraine), we develop a sand-clock model of resilience-building for MNEs operating in a VUCA context. We highlight the key components of our model and the connections between them, illustrated by recent IB cases. We also draw practical lessons for MNEs seeking to survive and thrive and for policymakers looking to create better business environments.

A MODEL OF RESILIENCE-BUILDING FOR IB

Our model conceptualizes resilience in terms of how businesses anticipate, adapt, and/or resist adversity (Shepherd & Williams, 2022). Resilient MNEs have the capacity to recover from disruptions owing to their ability to adjust. Moreover, their time perceptions enable them to conserve resources and make prudent (entrepreneurial) decisions. The sand-clock model is built upon three pillars: resourcefulness, time interpretations, and entrepreneurial judgments.

THE SAND-CLOCK MODEL

Figure 1 is a representation of our model. Testing and calibration are necessary to create a sand-clock that accurately records time. Calibration is similar to how businesses build resilience by considering the resources at their disposal, in-

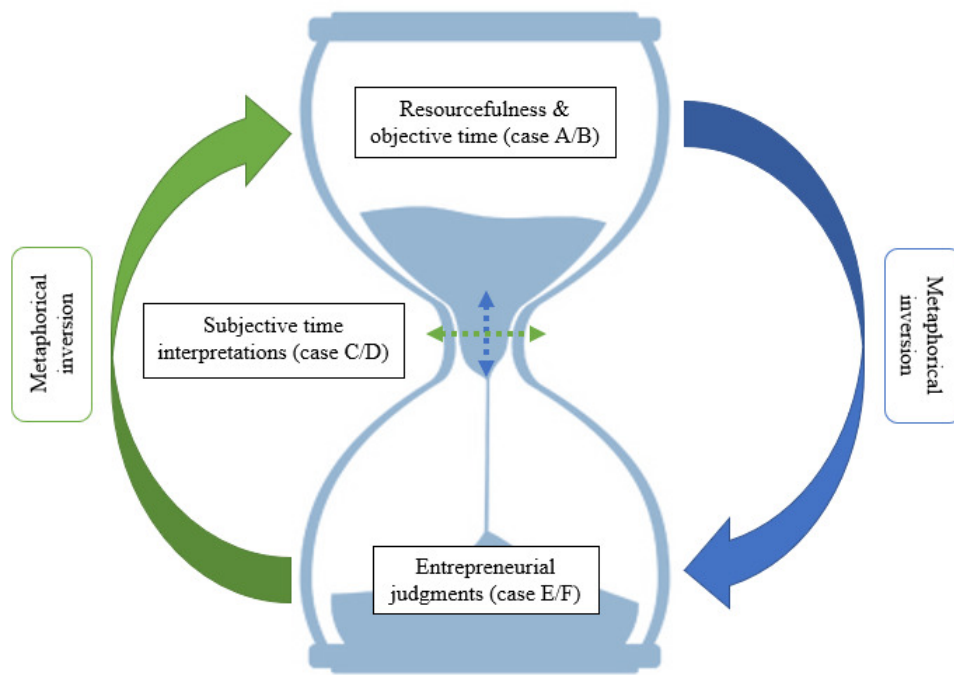


Figure 1. The Sand-Clock Model of Resilience-Building for IB

interpreting time, and developing judgments to make better decisions.

In our concept, sand is a metaphor for the resources, time, and level of judgment needed to develop resilience. The sand grains at the top of the clock represent the resources accumulated before a disruption begins, and thus the amount of time available to the organization before adversity is encountered. The more resources accumulated by an MNE before disruption, the more time it has to make decisions on how to appropriately use those resources in a changing VUCA environment, where past information and decision rules are no longer valid. As the resources (represented by sand grains) flow through the bottleneck to the bottom of the clock, decision-makers are able to use the time to form judgments on how to better deploy resources to delay and diminish the impact of adversity. The sand-clock can be turned over repeatedly to let the sand flow through again, by reallocating resources to help build resilience. This process can be repeated as many times as necessary to ensure the organization's survival and success.

RESOURCEFULNESS

Businesses need to accumulate slack resources when making future plans in a VUCA context. Our model provides a temporal view of disruptive events that make businesses prioritize resource accumulation, distribution, and re-allocation. Stockpiling financial, production, and knowledge-related resources can help businesses become more resilient both before and after adversity. Meanwhile, adverse events can reshape resource structures such that previously undervalued or underutilized resources become more valuable for resilience-building (Shepherd & Williams, 2022).

These processes can be exemplified by Boeing, which faced severe operational disruptions due to a devastating earthquake in Japan in March 2011. Boeing relied on Japanese contractors for about 35% of the 787 Dreamliner's components. The earthquake disrupted many companies, including some of Boeing's first-tier suppliers, which was a challenge to the proper functioning of Boeing's widely distributed supply chain. Boeing dealt with inventory disruptions by diversifying its sourcing, creating inventory buffers, reducing production rates, and using just-in-time inventory management. The company's ability to stockpile slack resources proved indispensable for Boeing and its suppliers. With several weeks of inventory, Boeing was able to buffer any downturn in the supply chain and make sure it has the parts needed to fulfill customer demands. This ensured that the encountered logistic problems did not prevent Boeing and its suppliers from meeting delivery schedules (Trucco & Negri, 2020a).

Another example is the Japanese conglomerate Sapporo Group, which suffered extensive turmoil when the same earthquake damaged two of its five core breweries in Japan. The catastrophe also resulted in a loss of electric power and disruption to transportation, which made it challenging to deliver supplies and thus lowered sales. Sapporo quickly reinstated the Sendai and Chiba plants and reconfigured the brewing process in a few months. Although Sapporo took coordinated steps to ensure the steady supply of three main products (Sapporo Draft Beer Black Label, Yebisu Beer, and Mugi to Hop), the disaster's severe effects compelled the company to halt the supply of Yebisu the Black, Sapporo Lager Beer, and other goods. As it did not stockpile products and inventory, the group was unable to ensure a stable supply of three core products, and losses from alcoholic beverages had to be covered by soft drinks, reducing group

income by 70.6%, from JPY 7.6 to 3.2 billion (Trucco & Negri, 2020b). Thus, initially possessing slack resources is a necessary but insufficient condition for resilience-building. When a crisis occurs, regardless of its size, MNEs need to redesign and adapt their resource exploitation and deployment strategies within a particular timeframe.

TIME INTERPRETATIONS

During adversity, the amount of objective time available for decision-makers matters. If objective time is scarce, MNE decision-makers might feel a sense of urgency, leading to psychological pressure and less calculated decisions. Moreover, resilience also depends on how decision-makers subjectively interpret time. If managers are preoccupied with the passage of time, perceiving urgency, and are chronically hurried, this will affect resource allocation. For example, when decision-makers perceive temporal proximity to a *closing window of opportunity*, they are inclined to focus on the limited amount of time and/or on developing a sense of urgency, which may alter their decision processes (Sobrepere i Profitós, Keil, & Kuusela, 2022).

The COVID-19 pandemic has affected most businesses worldwide (Perez-Batres & Treviño, 2020). Quarantine-friendly companies like Amazon and Netflix made use of the window of opportunity created by the pandemic and acted at the right time. The top executives at Amazon recognized that the pandemic may be a historically disruptive event and chose to concentrate their decision-making on long-term profitability by viewing time as a continuous variable where the sense of urgency depends on subjective interpretations. Although the pandemic heralded various opportunities for Amazon, its key decision-makers did not put too much hope in consumers' post-pandemic spending habits and shifted their strategy toward massive diversification. By anticipating the closing window of opportunity and making correct time interpretations, Amazon adopted a "future-back" perspective. This strategy entailed perceiving time subjectively by thinking ahead, anticipating customer wants and needs, and then working backward to develop a strategy to meet those requirements. This enabled Amazon to create policies and goods to satisfy future changing necessities. Adopting a "future-back" perspective directed the company toward making significant investments in technology that increased its control over e-commerce (e.g., artificial intelligence and cloud services), building cashier-free Amazon Go stores, and growing its fleet of cargo planes (Weise, 2021).

Netflix profited heavily from the pandemic with the addition of 15.8 million new subscribers during the first year of COVID-19. When the lockdown measures were relaxed, the big concern for Netflix was whether it could maintain the expanded client base. In contrast to Amazon, Netflix made incorrect time interpretations and was unable to recognize when its window of opportunity was closing. Specifically, Netflix failed to forecast the aftermath effect of easing COVID-19 measures and the temporal proximity of this event. The company also did not anticipate the extensive new content produced by other streaming services during the pandemic. This strategic failure to recognize the ur-

gency of the time led to Netflix losing 970,000 paying subscribers between April and June 2022, which was the company's first subscriber loss since 2011 (Sherman & Clayton, 2022). Reacting to this major subscriber loss, Netflix followed a "threat response" strategy mostly deployed by leaders under temporal urgency. Part of the fear-based strategy was to enforce password protection on family accounts, leading to even more canceled subscriptions.

ENTREPRENEURIAL JUDGMENTS

In a VUCA context where the pertinent probability distributions are unknown, businesspeople make judgments by projecting future events. Foss and Klein (2012) treat entrepreneurship as a judgment-driven process, suggesting that decision-makers can exercise judgment to respond to adversity and build resilience. Thus, when slack resources are available, employing entrepreneurial judgments for allocation and re-allocation of resources represents an effective means of combining different assets for resilience-building.

Entrepreneurial judgment can be employed to control how resources are acquired, combined, and deployed to build business resilience during adversity. An illustrative case is CF Industries, North America's largest producer of nitrogen fertilizer products. Since the Russian invasion of Ukraine, fertilizer prices have skyrocketed, leading to a 36% rise in CF Industries' share price. CF Industries used this opportunity to buy back shares and fund renewable energy projects, instead of just making money for shareholders. For example, the company joined the Mærsk McKinney Møller Center for Zero Carbon Shipping, an independent nonprofit research center. By becoming a strategic partner, CF Industries has committed to a long-term collaboration. In summary, the company re-deployed its resources by using cash to protect itself from potential downside risk; interpreted time by developing a forward-looking orientation; and employed entrepreneurial judgments to support global decarbonization (CF Industries, 2022).

Adidas AG provides another example of revising decision-making through entrepreneurial judgments. The 1980 Summer Olympics in Moscow, which were held after the USSR invaded Afghanistan, were not supported by any Western enterprise except Adidas. The company consequently faced strong criticism from Western consumers for prioritizing business interests over humanitarian concerns. When Russia invaded Ukraine in 2022, it not only caused havoc on the global economy but also raised concerns about how MNEs should respond to it (Meyer & Estrin, 2023). Adidas thus recognized the need for prompt decision-making and reacted more firmly than in 1980. The sportswear company took advantage of the lesson learned from previous wrong judgments and followed its rivals Nike and Puma by suspending all commercial activities linked to Russia. Adidas thereby inverted the sand-clock to build resilience by making better judgments, such as prioritizing long-term relationships with customers, which the company had neglected in 1980.

ACTIONABLE INSIGHTS

How to survive and thrive during adversity has become a major challenge faced by MNEs in a VUCA context (Meyer & Estrin, 2023; Mol, Rabbiosi, & Santangelo, 2023). Our model outlines imperative aspects for resilience-building. Before employing the model, decision-makers need to understand their level of exposure to adversity, which offers clarity on what resources are required and the criticality of timelines. We identify some ways in which MNE decision-makers can sequentially employ our model and distribute the outcomes on the organizational level. We summarize the actionable insights in [Table 1](#).

UTILIZING AND ACCUMULATING RESOURCES

Assessing the level of exposure to adversity provides insights into how available resources compare to what the enterprise requires. This is essential because the cost structures of resources that flow through different levels of the economy during adversity are unstable and unclear. In the short-term, MNEs could focus on stockpiling finance, production capacity, and knowledge. For example, stockpiling inventory helped Boeing to reconfigure its supply chain. In a VUCA context, resource accumulation and utilization should be oriented toward social, environmental, and sustainable economic development. To demonstrate this, our model integrates time and its interpretation with resourcefulness to show that MNEs need to adopt a sustainability mindset in order to succeed (Cavusgil et al., 2021).

INTERPRETING TIME

Decision-makers could utilize the sand-clock model to design personalized action plans. These should include both clock/calendar time measurements and subjective individual time interpretations, such as the perception of urgency. This could be as straightforward as allocating or re-allocating resources within short/medium/long timeframes, utilizing agility to overcome temporal rushes, and strengthening the business core through increased flexibility. As mentioned earlier, Amazon took advantage of the *closing window of opportunity* and crafted a “future-back” strategy focused on agility (Cavusgil et al., 2021) by interpreting temporal signals of change and implementing real-time adjustments to operations. For MNE decision-makers operating in a VUCA context, the example of Amazon provides valuable lessons on correctly interpreting temporal signals and utilizing temporal and other types of reflections (Breen, 2017) to create continuous loop processes for addressing social, economic, and political challenges.

EMPLOYING JUDGMENT

MNE decision-makers can integrate resourcefulness and time to generate better entrepreneurial judgments. In one of our case examples, CF Industries started rethinking its core strategy by making correct judgments about current political risks and future financial gains. That case also illustrates how the resourcefulness and time elements of the

sand-clock can be integrated and utilized to generate better judgments. For example, while experiencing a short-term rise in its share price, the company understood that its window of opportunity had a temporal limitation and so oriented strategically toward generating sustainable resources, rather than simply taking advantage of existing ones. New realities require better judgments that can help MNE decision-makers transform short- and medium-term disruption into long-term opportunities.

CONCLUSIONS

In this paper, we develop a sand-clock model that can be utilized by MNE decision-makers to build resilience for surviving and thriving in a VUCA context. For top managers, it is important to accurately combine resourcefulness, time interpretations, and entrepreneurial judgments to transform short-term disruptions into long-term opportunities. For IB scholars, the proposed model opens the door for more nuanced research on resilience in a VUCA context.

ACKNOWLEDGMENTS

The authors thank the editors and reviewers for their insightful comments. The authors would also like to thank Luis Dau for his encouragement at the initial idea development stage as well as Manlin Xiao and Zhengyao Kang for their suggestions. Research for the article was supported in part by a research grant (Project ID. P0043832) from the Policy Research Centre for Innovation and Technology, The Hong Kong Polytechnic University.

ABOUT THE AUTHORS

Aureliu Sindila is a Ph.D. candidate in the Department of Management and Marketing, Faculty of Business, The Hong Kong Polytechnic University, Hong Kong. His research interests are centered on the topics of business resilience, crisis management, repugnant transactions, time in management and organizations.

Nicolai J. Foss is a Professor of Strategy at the Department of Strategy and Innovation, CBS. His main research interests lie in the intersections of strategy, innovation, and organization design theories. He has published in many leading management journals. Foss is a Clarivate Highly Cited Researcher and a member of the Academia Europaea.

Xueyong Zhan is an associate professor in the Department of Management and Marketing, Faculty of Business, The Hong Kong Polytechnic University, Hong Kong. He received his Ph.D. in public administration from the University of Southern California. His research examines business sustainability and public policy, philanthropy and nonprofits, and public management.

Table 1. Actionable Insights for Resilience-Building in IB

Case	MNE	Context	Successful solutions	Unsuccessful solutions	Applied insights
A	Boeing	Utilization of available resources and accumulation of additional ones	In a VUCA context, MNE decision-makers need a long-term perspective. Stockpiling and creating inventory buffers helped Boeing redesign its supply chain.		Resource development should be focused on promoting social, environmental, and sustainable economic growth. Our model combines time and its interpretation with resourcefulness to illustrate how an MNE should embrace sustainability in order to succeed.
B	Sapporo Group			The group was unable to ensure a consistent supply of three primary items as it did not stockpile products and inventory; losses from alcoholic beverages had to be offset by soft drink sales.	
C	Amazon	Time interpretation	Amazon targeted strategic agility to take advantage of the rapidly closing window of opportunity and adopted a “future-back” perspective.		MNE decision-makers can learn from Amazon’s example how to properly analyze temporal signals and use these reflections to build continuous loop processes for addressing social, economic, and political challenges in a VUCA context.
D	Netflix			Netflix was unable to anticipate and understand: 1) the consequences and temporal proximity of the relaxation of COVID-19 regulations; and 2) the fact that other streaming services developed extensive new content during the pandemic.	
E	CF Industries	Employment of entrepreneurial judgments	While experiencing a short-term rise in its share price, the company understood the temporal limitation of this window of opportunity, and thus oriented toward generating sustainable resources.		To transform short- and medium-term disruption into long-term opportunities, MNE decision-makers must make better judgments in light of new circumstances.
F	Adidas AG		Adidas inverted the sand-clock to make better judgments and build resilience.	The company made misjudgments in 1980 when prioritizing profits over reputation.	

Submitted: November 11, 2022 EDT, Accepted: March 21, 2023
EDT



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