European Journal of Business and Innovation Research
Vol.13, No.3, pp.,41-61, 2025
Print ISSN: 2053-4019(Print)
Online ISSN: 2053-4027(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

# Operations Management: Manage with Insight – Lead with Foresight

**Katombe Madi**
Graduate School of Business & Leadership, University of Kwazulu Natal
University Rd, Westville, 3630, KwaZulu-Natal Durban
South Africa
madi.katombe@south32.net

doi: https://doi.org/10.37745/ejbir.2013/vol13n34161 Published April 13, 2025

**Citation**: Madi K. (2025) Operations Management: Manage with Insight – Lead with Foresight, *European Journal of Business and Innovation Research*, Vol.13, No.3, pp.,41-61

**Abstract:** *Modern and ancient literatures reveal that there is a handful of firms that have been in operation for over a millennium year. Their resilience, while fascinating, has triggered academic interests to uncover insights owing to diminishing modern firms' lifespan. Previous studies have intuitively highlighted key elements of longevity. This study searches for the inner substance of these firms so many other organisations cannot replicate. The review of ten selected millennium-long history firms reveals that they spread from various business sectors. These firms report an "experience of harmony" refer to as "resonance". Borrowing from natural science together with the integrated evidence from multiple disciplines including psychology and neuroscience, the concept of "motor resonance" was introduced in operations management to forge ahead with the theory of strategic resonance. Until now strategic resonance models were intuitive and metaphoric. The proposed model suggests that "motor resonance" is the driver of the dynamic interplay between internal and external environments of millennium-long history firms. Additionally, leading with foresight guarantee continuous resonance between the environment and the firms' operational capabilities, while managing with insight guarantee continuous resonance between and within firm functions. Overall, findings contribute novel theoretical and practical insights to strategic resonance.*

**Keywords:** strategic resonance; motor resonance, manage with insight, lead with foresight

## INTRODUCTION

According to the United States bureau of labor statistics, only 25% of new businesses make it to 15 years or more. Standard and Poor's 500 Index on the other hand highlights that in 2020, the average lifespan of a firm was just over 21 years, compared with 32 years in 1965. Furthermore, they contend that the outlook of firms' lifespan is a clear long-term trend of declining corporate longevity. While the prediction is declining lifespan, probably due to ever changing today's business environment characterised by volatility, uncertainty, complexity,

and ambiguity (exacerbate by globalisation and rapid technology development), a handful of firms have been in operation for over a millennium year. These millennium-long history firms have navigated centuries of hardships, including natural catastrophes, wars, technological advancement and changes, economic upheavals, and socio-political challenges. Yet despite these obstacles, they have exhibited flexibility, persistence, and above all resilience; and they are still thriving in today's highly competitive and volatile business environment (Enders & Haggstrom, 2018; Millán-Tudela et al., 2023).

At its inception, operations management was characterised by the study of how best to organize factories manufacturing motor vehicles and other consumer goods. This academic disciple evolved to encompass how goods get manufactured, and services get delivered (Jones, 2014). Johnston (1994) in his book "Operations: from factory to service management" provides the scope and role of operations management within an organization. He posits that "operations management is a body of knowledge, experience and techniques covering such topics as process design, layout, production planning, inventory control, quality management and control, capacity planning and workforce management". This also implies guaranteeing to keep the firms operating. Over the years, academics have developed theories for manufacturing and service industries to increase efficiency by striving "to meet the customer's requirements to the highest possible standard with the least amount of resources needed" (Boer at al., 2015). To name a few, operations management theories encompass: "Theory of location, Theory of process choice, Theory of swift and even flow, Theory of lean manufacturing, Theory of performance frontiers, Theory of constraints, Queuing theory, and Theory of service experience" (Jones, 2014). These additions to the body of knowledge insinuate that humankind is becoming better equipped to ensure successful operation of firms and probably to keep them in operation for extended period of time, yet modern firms' lifespan prediction is contrasting.

Previous studies have intuitively pointed out key elements of longevity of millennium-long history firms (Rivera-Rodríguez, 2009; Dark Angels, 2018; Mamchii Oleksandra, 2024). Enders & Haggstrom (2018) discuss the strategy of 'Pathbuilder team' "to generate disruptive ideas to enable oldest firms to adapt to shifts in market conditions". Millán-Tudela et al., (2023) use the "culture distance model developed by Hofstede (1984; 2001) together with an analysis of the economic activities developed by these firms to reveal the actions that have been carried out by exploiting resources and capabilities to preserve the social environment". This study searches for the inner substance of the millennium-long history firms so many other organisations cannot replicate. More specifically, previous writers highlight that these firms report an experience of "harmony" also refer to as "resonance" (Brown, 2000). This study takes a deep dive into the etymology of resonance in natural science, social science, and neuroscience; and evaluates strategic resonance models in relation to firm lifespan. Hence, this study is articulated around three points. Firstly, this research attempts to carry out in-depth review of millennium-long history firms to uncover the theoretical underpinnings of their longevity. Secondly, confirm whether this longevity vary by industry. Thirdly, attempt to conceptualise uncovered insights, if any, in modern operations management owing to diminishing modern firms' lifespan.

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## REFLECTION ON FIRMS' LIFE EXPECTANCY

The lifespan of firms includes four stages: startup, maturity, renewal/innovation, and decline. The literature has highlighted that firms' life expectancy is only a few decades even though there are still firms in operation that have millennium-long history. It can be argued that such systems are predictable for a while and then 'appear' to become random. In addition to this, it is widely acknowledged that this topic is complex and required mathematical probabilistic approach. This study concurs with mathematicians who postulate that effective prediction of lifespan of systems similar to firms depends on three things: "how much uncertainty can be tolerated in the forecast, how accurately its current state can be measured, and a time scale depending on the dynamics of the system" (Heinzmann & Stump, 2017; Heinzmann, 2021). In summary, this is a method "of qualitative and quantitative analysis to investigate the behavior of dynamic systems that cannot be explained and predicted by single data relationships, but must be explained and predicted by whole, continuous data relationships".

It is believed that these systems are sensitive to initial conditions which implies that "each point in this type of system is arbitrarily closely approximated by other points that have significantly different future paths or trajectories. Thus, an arbitrarily small change or perturbation of the current trajectory may lead to significantly different future behavior of the firms" (Heinzmann, 2021). Small differences in initial conditions of firms, for example, those due to errors in measurements or strategy and/or implementation, can widely yield to diverging outcomes for such dynamical systems, rendering long-term prediction of their behavior impossible in general. It is usually stated for this type of system that "the present determines the future, but the approximate present does not approximately determine the future" (van Strien Marij, 2021; Heinzmann, 2021).

## CHARACTERISTICS OF MILLENNIUM-LONG HISTORY FIRMS

Ten firms were selected for the purpose of this study including: "Kongō Gumi, Nishiyama Onsen Keiunkan, St. Peter Stifts Kulinarium, Sean's Bar, Staffelter Hof, Monnaie de Paris, The Royal Mint, Tanaka Iga, Genda Shigyō Paper Industries, Fonderia Pontificia Marinelli" (Millán-Tudela et al.,2023; Mamchii Oleksandra, 2024). These firms seem to remain in operations unrestrictedly longer. Table 1 provides a synopsis view of millennium-long history firms. Each generation of operations managers has endured a set of unsurmountable challenges; however, they have managed to pull through even after centuries of changing and raging historical tides. These firms have endured several hardships over centuries, despite obstacles, they persisted exhibiting resilient and adjusting to shifts in environments.

Table 1. Ten selected millennium-long history firms

| Business name | Established in (AD) | Country | Industry | Characteristics |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kongo Gumi | 578 | Japan | Construction of temple & shrines | • Dedication to quality and cultural preservation<br>• Continuous success ascribed to a confluence of expert craftsmen, traditional methods, and safeguarding Japan's rich architectural legacy |
| Nishiyama Onsen Keiunkan | 705 | Japan | Hospitality - world's oldest hotel | • Symbol of continuity and cultural history<br>• Embodying the spirit of Japanese hospitality |
| St. Peter Stifts Kulinarium | 803 | Austria | Hospitality - ancient restaurant | • Representing the abundant culinary legacy of Austria<br>• Culinary artistry and dedication to quality |
| Sean's Bar | 900 | Ireland | Hospitality - world's oldest tavern | • Symbol of Ireland's rich cultural legacy |
| Staffelter Hof | 862 | Germany | Agriculture - oldest vineyards in the world | • Dedication to quality and workmanship and long-standing customs of the area<br>• Stand for the pinnacle of winemaking skill, crafting well-recognized wines |
| Monnaie de Paris | 864 | France | Manufacturing - oldest world mint | • Producing coins and medals that honour the cultural and historical significance of France<br>• Dedication to quality and innovation |
| The Royal Mint | 886 | British | Manufacturing - oldest world mint | • Being at the forefront of innovation, developing cutting-edge methods for metalworking and coin manufacturing<br>• Maintaining its high standards of quality |
| Tanaka Iga | 885 | Japan | Manufacturing - traditional pottery | • Commitment to preserve the craftsmanship.<br>• Dedication to quality and tradition; its pottery is valued for its distinctive aesthetic and cultural importance |
| Genda Shigyō Paper Industries | 771 | Japan | Paper Industries - little paper mill | • Dedication to quality and the preservation of traditional skills<br>• Unrelenting attention to quality and innovation |
| Fonderia Pontificia Marinelli | 1000 | Italy | Manufacturing - foundry | • Making bells for churches using traditional methods<br>• Combining age-old skills with cutting-edge technology to produce bells with unmatched acoustics and quality |

*Source: Top 10 Oldest Companies in the World (bestdiplomats.org) – by Oleksandra Mamchii, published: May 9, 2024*

Previous writers, in quest of the "secret" of millennium-long lifespan, have intuitively identified "key elements of longevity – including heritage, values, succession planning, financial prudence, strong relationships and reputation, adaptation to change, specialisation, innovation-transition and entrepreneurship, ownership, corporate governance and leadership,

long-term vision" (Rivera-Rodríguez, 2009 & Mamchii Oleksandra, 2024; Dark Angels, 2018). However, this is taking lightly the achievement of these mighty firms and is an indication of failing to identify the inner substance so many other firms cannot replicate.

Enders & Haggstrom (2018) discuss how one oldest firm "transformed itself into a sustainable business by focusing on renewable materials to adapt to market shifts". They confirm that this was specifically achieved by creating a "Pathbuilder" team which generates disruptive ideas. Millán-Tudela et al., (2023) have identified "the strategic resources and capabilities of these firms using the culture distance model developed by Hofstede (1984; 2001) along with an analysis of the economic activities that these firms developed". They argued that their findings have exposed "the actions that have been carried out by exploiting resources and capabilities to preserve the social environment".

Table 1 clearly indicates that millennium-long history firms spread from various business sectors including construction, hospitality, agriculture, manufacturing, and art. Hence, the quest for identifying the "art" of successfully operating firms through centuries and contextualise this into the body of knowledge of operations management. In-depth analysis reveals that even though these firms encountered multiple significant obstacles during their millennium-long history, they always adjust to shifts in society, economics, technology, and geo-environmental to operate in "harmony" with their environment. These firms report "an experience of "harmony" or wholeness also refer to as "resonance" (Brown, 2000). The next section will expand on this etymology of resonance.

## RESONANCE IN NATURAL SCIENCE AND SOCIAL SCIENCE

It is of utmost importance to understand the etymology of the word "resonance" before it could be integrated into social science. According to Ovenden (1974), "all objects and systems naturally vibrate/oscillate at a definitive frequency called the resonant frequency". "Resonance is a powerful physical mechanism, no matter the medium, it produces amplification and synchronization effects in vibrating/oscillatory systems" (Helmholtz, 2009; Lomas at al. 2022; Buchanan, 2019). It is believed that this phenomenon of resonance is an underpinning factor of physical, chemical, biological systems (Shironosov, 2001). The next sections bridge the gap between the human experience of resonance and resonance as a physical mechanism.

According to Vincent et al., (2021) the definition of resonance has been generalized "[to include] all known processes leading to the enhancement, suppression or optimization of a system's response through the variation/perturbation/modulation of any system property." This broad definition of resonance enables to expand this concept across physics to neuroscience and social sciences (Coffey et al., 2019, 2021; Kaneshiro et al., 2021; Pandey et al., 2021) as depicted in Table 2.

Table 2. Span of the concept of resonance in social science – adapted from Lomas at al. (2022)

| Span of the concept of resonance in social science | |
|---|---|
| ***Psychology and neuroscience*** | ***Other social sciences*** |
| "Conceptual resonance Lee et al., 2007; Howie and Bagnall, 2020"<br>"Cognitive resonance Giorgi, 2017"<br>"Emotional resonance Gratch et al., 2013; Decety, 2010; Giorgi, 2017"<br>"Empathic resonance Azevedo et al., 2013"<br>"Harmonic resonance Lehar, 2003"<br>"Interpersonal resonance Uithol et al., 2011; Himberg et al., 2018"<br>"Intrapersonal resonance Uithol et al., 2011"<br>"Limbic resonance Lewis et al., 2001"<br>"Perceptual resonance Schütz-Bosbach and Prinz, 2007"<br>"Social resonance Kopp, 2010; Wheatley and Sievers, 2016"<br>"Sympathetic resonance (Helmholtz, 2009; originally published 1863)" | "Advertising resonance McQuarrie and Mick, 1992"<br>"Brand resonance Keller, 2010"<br>"Consumer resonance Shang et al., 2017"<br>"Cultural resonance McDonnell et al., 2017"<br>"Entrepreneurial resonance Warren, 2004"<br>"Ethical resonance Prasad, 2019"<br>"Historical resonance Ferreira and Vale, 2020"<br>"Human resonance Rosa, 2018"<br>"Interaction resonance Hummels et al., 2003"<br>"Institutional resonance Strydom, 2003"<br>"Narrative resonance van Werven et al., 2019; Duarte, 2013"<br>"Norm resonance Gutterman, 2015"<br>"Political resonance Cunneen, 2019"<br>"Spiritual resonance Siegel, 2013"<br>"Value resonance Schemer et al., 2012" |

Resonance is commonly used in layman language to describe the "human experience of powerful connecting and activating interactions" (Duarte, 2013) which are particularly important in operations management. There are two types of resonance in social science: metaphorical and physical. Physical resonance occurs when the mathematics of resonance are used to model human interactions (Guertin, 2013; MacDougall & Moore, 2005; Lomas, 2022) - For example, an organisation process follows a drumbeat (of 2Hz or two steps per second). Metaphorical resonance alludes to synchronization and is illustrated in expressions like "syncing up, getting on the same wavelength, or even feeling good vibes" (Helmholtz, 2009). The proponents confirm that "human communication does link to measurable inter-brain synchrony (Dumas et al., 2010; Dikker et al., 2019; Czeszumski et al., 2020; Kingsbury and Hong, 2020; Dumas and Fairhurst, 2021; Moreau and Dumas, 2021)". For examples, rhythmic interactions in daily life include "conversational turn-taking (McGarva and Warner, 2003; Wilson and Wilson, 2005; Lee et al., 2010), patterns of eye contact (Wohltjen and Wheatley, 2021) or handshakes (Melnyk and Hénaff, 2019)".

Human rhythms, required for organisations to function, emerge from a broad range of biological oscillators that are present across the brain and the rest of the body" (Varga and Heck, 2017; Guertin, 2013; Bucher et al., 2015; Molkov et al., 2014; Buzsaki, 2006; Klimesch; 2018; Lampl & Yarom, 1997; Izhikevich, 2007; Stiefel & Ermentrout, 2016; Herrmann, 2001). Furthermore, "neurobiological processes associated with adaptive learning (Grossberg, 2013, 2017), perceptual learning (Raja, 2020), and ecological cognitive architecture (Raja, 2018) have all been theorized as forms of physical resonance". In neuroscience, resonance alludes to the "patterns of synchronization, harmonization, vibrations that form part of the living consciousness" (Hunt and Schooler, 2019). Hence, large collections of neurons exhibit both internal resonance effects (one part of the brain resonating to another) and external resonance

effects (the brain resonating to environmental phenomena). Physicists and neuroscientists have confirmed that "rhythmic entrainment governs patterns of interaction from neurons, firms, societal, up to economies level" (Greenfield et al., 2021).

It has been reported that the ability to synchronize to a drumbeat is one of the core skills associated with human social behaviour (Feldman, 2012 & 2017; Grafsgaard et al., 2018; Prochazkova et al., 2022; Kinreich et al., 2017; Wang & Wang, 2020). This is crucial since operations management is all about synchronisation to drumbeat and rhythms and routines. Hence, Pink (2018) advocates "learnings at the corporate level, specifically around the need for teams and firms to be mindful of the natural synchronization to enable business to unlock maximum impact from their so-called human capital". Synchronization supports coordinated actions between individuals, teams, and departments in operations management. Researchers have demonstrated that "behavioural synchrony in groups increases prosocial behaviour, perceived social bonding, and generally feels good" (Morgan et al., 2017; Cracco et al., 2021; Savage et al., 2021). Gelfand et al. (2020) and Dong et al., (2015) caution that "people randomly assigned to a synchronization task performed worse, reported higher levels of conflict and reduced group cohesion, and hindered sharing of minority perspectives during decision-making" (Wood et al., 2018 and Wiltermuth, 2012 a & b). These insights are crucial for successful operations management.

Sympathetic resonance, including synchronization and rhythmic entrainment associate with "human capability to feel what another person feels, which is often called empathy" (Hagel et al., 2019; Savage et al., 2021 & Lin and Lomas, 2022). Psychologists have categorized empathy into cognitive and affective empathy (Reniers et al., 2011; Hall & Schwartz, 2019). The capacity for empathy is usually conceptualized as emerging from "motor resonance" which is a type of physical resonance that provides a mechanism for sharing conscious experiences between people (Sciutti and Sandini, 2017). In summary, "motor resonance" has been found to govern patterns of interaction at a social, population levels, and can be observed at the scale of economies and ecosystems" (Greenfield et al., 2021). Unlocking this is crucial since operations management revolves around synchronisation to drumbeat, and rhythms and routines. The next section will build on this powerful mechanism to shed light on strategic resonance in operations management to uncover how millennium-long history firms strategically synchronise with the environment.

## THEORY OF STRATEGIC RESONANCE IN OPERATIONS MANAGEMENT

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**Review of existing models**

Brown and Fai (2006) and Brown (2000) argue that strategic resonance is "an ongoing, dynamic, strategic process whereby customer requirements and organizational capabilities are in harmony and resonate". According to them the concept of strategic fit provides a static state like a jigsaw where all parts fit together while strategic resonance is a "dynamic process, which is about ensuring continuous linkages and harmonization between - (1) the market and the firm's operations capabilities, (2) the firm's strategy and its operations capabilities, and (3) all functions and all levels within the firm". It is believed that strategic fit lack adaptability and will limit the lifespan of the firm while strategic resonance will enable firms to endure hardships. This is mainly because strategic fit generates "rigidity and blinkered thinking, while strategic resonance promotes curiosity, open-mindedness, and innovation" (van Zyl B., 2022). Brown and Fai (2006) have suggested a model for strategic resonance which is illustrated in Figure 1.

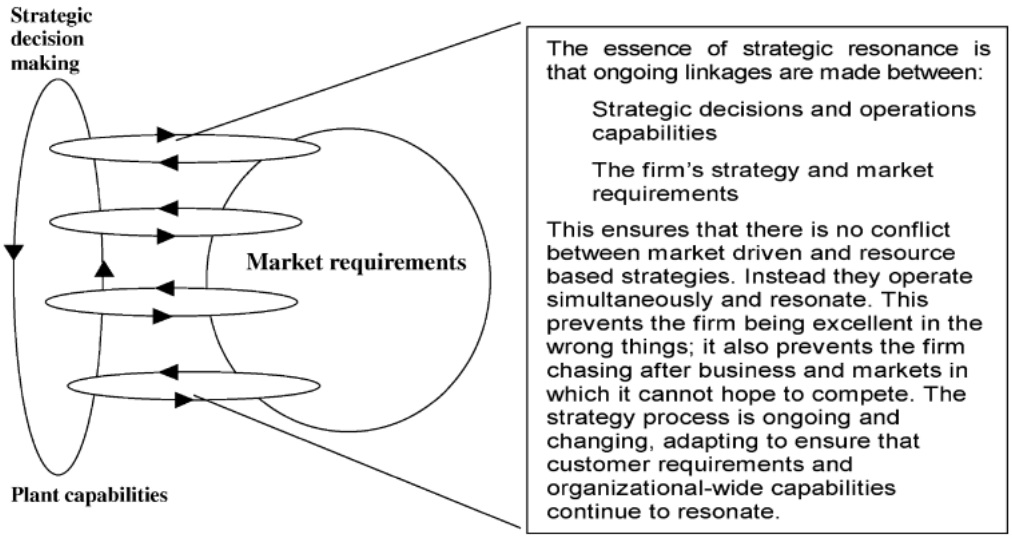


Figure 1. A model of strategic resonance by Brown and Fai (2006)

The essence of this model is managing simultaneously two sets of capabilities: "(1) within the firm's functions so that there is cohesion and strategic alignment within them and (2) between the firm's capabilities and the market segments in which the firm wishes to compete". In addition, Brown and Fai (2006) mention that "strategic resonance ensures that the firm nurtures the capabilities that can be used to exploit market opportunities since such capabilities do not arise by chance". Similarly, Keller's strategic resonance model posits that "brand strength is

determined by how consumers think and feel and that the brand must strive to link consumers experiences to trigger positive thoughts, feelings, beliefs, opinions, and perceptions" (Keller, 2001; Jiménez-Marín at al. 2021). At a strategic level, resonance remains the bedrock of marketing and branding efforts "to connect with employees, customers, and stakeholders by ensuring consistency of marketing efforts and public relations output" (Stones, 2019). The shortfall of these models is that while they are intuitively appealing, they fundamentally consider resonance as a metaphor. They do not take into consideration the fundamental aspect of resonance as powerful mechanism (as highlighted in natural science, psychology, and neuroscience) that governs patterns of interaction at a societal level, and from neurons to economies.

Brown and Fai (2006) argue that strategic resonance is "particularly applicable to the innovation process within and between firms because of the current competitive environment characterised by rapid technological changes". Nonetheless, based on the review of rhythmic entrainment and synchronization, this study argues that innovation derives from the outcome of the "coupling between action and perception" of the firms and the environment since they share a similar motor repertoire. Hence, capabilities are continuously developed to respond to market opportunities. Furthermore, while their models have augmented operations management body of knowledge, they do not clearly depict how firms could endure centuries of hardships like the millennium-long history firms.

**Integration of psychology and neuroscience concepts in strategic resonance model**

This study has taken the concept of strategic resonance a step further by integrating, in operations management, knowledges from psychology and more specifically neuroscience. Firms are operated by human beings who are subjected to resonance at a microlevel as well as macrolevel. The integrations between psychological and neurological underpinnings and cultural environment provide the firms the acquisition of the motor and cognitive behaviours to navigate through centuries of hardships. Within the millennium-long history firms, not just the culture and the tradition, but also processes of learning, innovation, and transmission transformed over time. This view is supported by Greenfield (2004) and van Zyl (2022).

The introduction of entrepreneurship rekindling carries the value of innovation. An increase in trial-and-error learning and opportunities to experiment are the backdrop of these firms. The firms provide solutions that go beyond the challenges or needs that are presented by the environment, thus creating innovative designs. This study identifies three themes that characterize the transformation of creative processes which occurs at all levels. Firstly, the design creation process becomes increasingly individuated while still retaining its tradition (social nature). Secondly, the transformation of the creative processes uses multiple and diverse source designs (within a set of norms and rules to still integrate elements of tradition). Thirdly, the introduction of new technologies in design, resulting from innovation-transition, characterizes the transformation of creative processes. This view is supported by Greenfield (2004). In a nutshell, the economic shifts in society have influenced how the firm's mind

operates. Since these firms are in harmony with the environment, they are able to continue the construction of any novel design initiated by changes in the world. Hence, resonance is a synchronised interplay between the individual and the world (environment). Hartmut (2019) and Kappler et al., (2018) concur by stating that "resonance is a response relationship in which the firms and the world (environment) touch and transform each other".

The following could be inferred from the millennium-long history firms – in the same way that large collections of neurons exhibit internal resonance effects (such that one part of the brain resonates to another), the firm functions notably R&D, operations, supplier, and marketing resonate in a process of continual feedback, consultation, and adjustments within the firm. Similarly, the millennium-long history firms exhibit external resonance effects by resonating to the environment (like when the brain resonates to the environment). These rhythmics entrainments govern patterns of interaction at firm and environment levels. To conceptualise the insight gained (from reviewing these firms) in today's operations management body of knowledge, while borrowing from natural science, psychology, and neuroscience a model of strategic resonance was developed as depicted in figure 2.

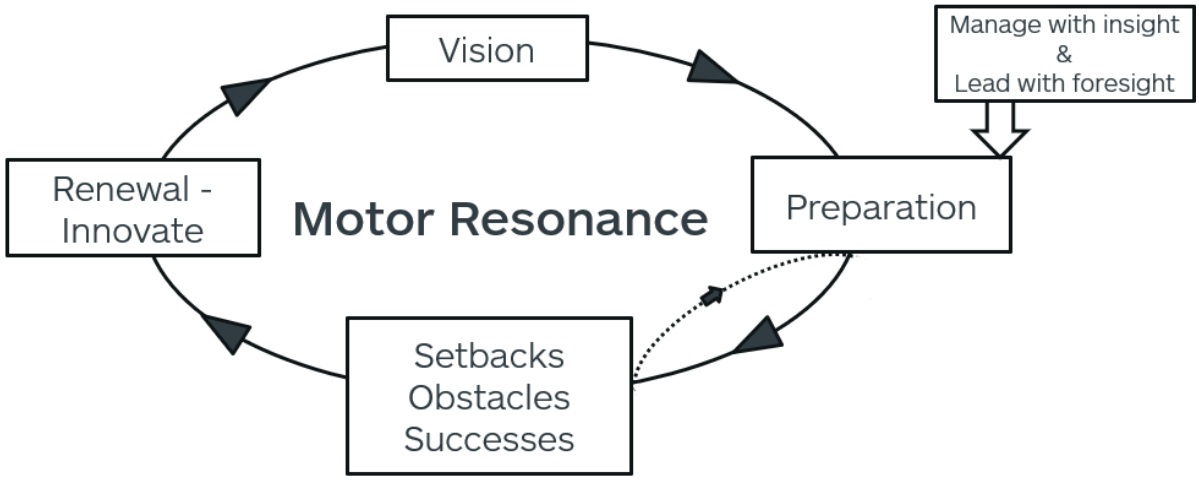


Figure 2. A model of strategic resonance in operations management

The proposed model of strategic resonance suggests that "motor resonance" is the driver of the dynamic interplay between internal and external environments of millennium-long history firms. In the same vein, this study suggests that motor resonance (or the "coupling between action and perception" of the firm and the environment) triggers the automatic activation of the firm's motor system. This is because the two motor systems (firm and environment) resonate as they share a similar motor repertoire; this view is supported by Sciutti and Sandini (2017).

In this case the point of view by Thomke and Von Hippel (2002) is attenuated due to "motor resonance". Hence, product development is smoothened because the "'need' which is the information with the customer (what the customer wants), and the 'solution' which is the information that lies with the firm (how to satisfy those needs)" reside in a similar motor repertoire. As a result, the requirement or value is unlocked through innovation – such that setbacks or obstacles are dealt with through the loop of setbacks (or obstacles) / preparation as depicted in Figure 2. For the millennium-long history firms, "motor resonance" eliminates the spatio-temporal distance between the firm and its customers. Renewal and innovation become the nexus of longevity. These firms continually succeed in matching the firm's systems of coordination and control as well as capabilities to the nature of the available and potential technological opportunities (Douthwaite et al., 2001 and Pavitt, 1998). Hence, this study concurs with Dosi et al. (1988) and Scott (1999) who suggest that "strategic management orients market position and learning trajectories in the long term". Millenium-long history firms tend to perform at the peak of their capabilities, in harmony, while experiencing intense internal satisfaction and becoming even more stronger and more capable self.

By taking a more fine-grained approach to examine this, this study suggests that apart from unlocking and integrating motor resonance, the millennium-long history firms manage with insight and lead with foresight:

Managing with insight not only includes unwavering commitment to quality, ownership, adaptability, clear sense of purpose, reputation, transparency and communication, professionalization (to ensure competitivity and success over the long-term), hierarchy of practiced organizational routines and their coordination, and higher order decision procedures for choosing what is to be done at lower levels (to name a few); but also insightful management of interaction between functions at each stage of product development and continuous interaction with current and potential customer-base. This implies that new information stemming from the various functions of the firm and its various interfaces with up—and downstream entities (suppliers and the market) is considered and incorporated into the evolution and continuous refining of the strategy itself.

Similarly, Leading with foresight not only includes corporate governance and leadership, entrepreneurship, investment in growth, succession planning, blending tradition and embrace innovation as a driving force for progress (embracing the values of the past while adapting to the demands of the present and unfolding future), adaptation to change, long-term vision, adopting new technologies, exploring global markets, and diversifying its offerings (to name a few); but also, (1) create competitive anticipatory management capability - through activation of future-oriented interests and concerns encompassing long-term as well as near-term considerations, and (2) enable operations managers to make prudent anticipatory competitive innovative decisions.

Managing with insight mainly focuses on the inwards environment while leading with foresight mainly deals with the outwards environment, this view is supported by Menelau et al. (2019).

In this way, this study suggests that leading with foresight guarantee continuous resonance between the environment and the firms' operational capabilities, while managing with insight ensures continuous resonance between and within functions (e.g., R&D, supplier, operations and marketing) as well as at all firm levels. This view is supported by Brown (2000), Brown and Cousins (2004), and Wang and Cao (2008). Managing with insight and leading with foresight influence organizational alignment with the environment and firm resources and processes, and the establishment of an organization's course of action, deriving from innovative ideas. Overall, preparation is vital to guarantee success regarding sensible course of action.

Based on the above, the proposed theory of strategic resonance suggests that motor resonance is the "coupling between action and perception", that triggers the automatic activation of the firm motor system, since the firm and the environment motor systems share a similar motor repertoire. The following are the propositions associated with the theory of strategic resonance:

- Motor resonance is the "coupling between action and perception" that triggers the automatic activation of firm motor system.
- Adaptive experience combined with matching expectations result from the fact that the firm and environment share a similar motor repertoire – the environment feedback adapts the firm's processes, both immediately and over the long-term.
- Cumulative effects enabled by renewal and innovation – productive customer processes trigger mutual cumulative effects on the environment (customer expectations) and firm's products delivery processes.

It is believed that if the firm and environment share a similar motor repertoire they can remain there unrestrictedly long. Hence, the resonant structure stabilizes the combined system for a long time and the evolution of combined system, in the greater measure, is determined by resonant dynamics. Therefore, the firm seems to perpetually operate without decline due to renewal and innovation.

## RESEARCH IMPLICATIONS

This study suggests that the core driver to achieving strategic resonance is "motor resonance" which is a powerful mechanism that governs patterns of interactions from neurons to economies. This research provides new insights underpinnings theoretical aspects of strategic resonance, indicating that operations managers should focus on unlocking and integrating "motor resonance". To constantly achieving this from neurons to economies, the three interlinked layers (Individual, Firms, and Environment) provide a system of thinking to help operations managers find the alignment, rhythmic entrainment, and synchronisation – to unlock "motor resonance" within their firms and between the firms and the environment.

Practically, the operations manager should primarily focus on slotting what the individual does in harmony into an equally resonant team within the firm and strengthening the response

relationship in which the firm and the world (environment) touch and transform each other. This ensures that, through innovation-transition, strategic resources and firms' capabilities are constantly aligned to market shifts. In addition, operations managers should constantly embed business practices and strategy that are in harmony with current world (environment) trends and thinking, and anticipatively, though innovation-transition, project firms ahead of the curve. By taking a more fine-grained approach to examine this, this study suggests that apart from unlocking and integrating "motor resonance", millennium-long history firms manage with insight and lead with foresight.

## CONCLUSION

Using a sample of ten firms, this study finds that overall millenium-long history firms spread from various business sectors and report an experience of "harmony" refer to as "resonance". More importantly, however, the in-depth review of resonance from natural science, social science, to neuroscience reveals that these firms have managed to unlock and fully integrate "motor resonance". Through these findings, this study makes several contributions to research on strategic resonance. Until now strategic resonance models were intuitive and metaphoric. This study proposes a model that suggests that "motor resonance", which is a powerful mechanism that governs patterns of interactions from neurons to economies, is the bedrock of strategic resonance and the driver of lifespan of millennium-long history firms. In addition, analysis suggests that millennium-long history firms manage with insight and lead with foresight. By taking a more fine-grained approach to examine this, this study suggests that leading with foresight guarantee continuous resonance between the environment and the firms' operational capabilities, while managing with insight guarantee continuous resonance between and within firm functions as well as at all levels.

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