Socio-technical foundations of sustainable business practices during VUCA

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Abstract

This study explores 18 UK companies' business practices across diverse sectors, emphasizing the role of learning and organizational design as key foundations for managing uncertainty. Applying the Market Intelligence Accumulation and Transfer Model (MIATM) 3.0, we uncover how organizations adjust to changes, challenge, transform, and adapt operational practices in response to VUCA (volatile, uncertain, complex, ambiguous) times. Results indicate that participants from knowledge-intensive and technology-based firms, particularly those operating a B2B business model as well as entrepreneurial smaller firms, exhibit a greater ability to learn and transform, attributed to leadership styles that promote an environment conducive to continuous learning and strategic reinvention. Conversely, rigid hierarchical structures and autocratic leadership are shown to impede business practices transformation due to poor knowledge flow and sharing, employee alienation from the company's goals and purpose, centralized decision-making, and hierarchical structure. The findings underscore the necessity of cultivating a culture that encourages proactive learning and employee-calculated risk-taking that enables decision-making through collaboration and experimentation, backed by leadership that supports a dynamic, open-minded, and flexible organizational design. Moreover, we provide a holistic model to guide organizational context design for successful learning as a key foundation of business practice transformation in turbulent and uncertain times.

Keywords

Learning, dynamic capability, MIATM model, uncertainty and ambiguity management

1. Introduction

Navigating a VUCA (volatile, uncertain, complex, ambiguous) environment demands that companies adapt to rapid changes driven by post-COVID-19 recovery, advancements in generative artificial intelligence (GenAI), economic shifts, and geopolitical tensions. Organizations must engage deeply with the inherent uncertainties and ambiguities of these changes and take appropriate actions. Thus, traditional strategic business planning needs to evolve to prioritize the management of uncertainty, requiring organizations to reassess and occasionally overturn their strategic underpinnings to avoid dysfunctional, defensive routines and strategic paralysis [1, 2, 3]. This dynamic approach compels organizations to continuously learn from external signals and reassess their strategies and operating practices to avoid stagnation in ineffective or defensive routines, particularly dangerous in high-velocity industries and markets [2, 3, 4], such as the ones all companies operate in currently. Managing a VUCA environment is complex, involving significant changes across several areas, including strategy [5],

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organizational structure and design [6, 7], work practices [8], resource and time allocation, culture [2], and the types of services and products offered [9]. These changes impact the very identity of an organization [1, 2, 10]. Effective transformation practices require organizations to adopt flexible and responsive designs, led from the top, that enable continuous learning and adaptation within their business ecosystems [2, 11].

Despite the importance of the above, many companies struggle with implementing transformation and adaptation. Research suggests that companies need strong learning capabilities at both individual and broader organizational team levels, defined as absorptive capacity and considered a foundation of dynamic capabilities, to successfully transform their operations and manage the shift to new ways of operating and/or transforming their existing practices, processes, products [2, 12, 13]. Many aspects, however, of how to successfully undertake learning for evolutionary change/practices transformation are still not well understood [2, 8, 14]. For example, research from McKinsey [15] highlights that organizations, on average, have realized less than one-third of the anticipated value from their digital transformation efforts, with a substantial investment yet to deliver expected outcomes [15, 16, 17]. In response to these challenges, the European Commission has launched Industry 5.0, promoting the use of human-centric digital technologies and emphasizing the need for technology to be inclusive and consider societal impacts [18]. Using human-centric digital technologies effectively requires a balanced focus on both human and technological factors [19]. Professionals need to actively engage in developing, planning, implementing, and using these technologies, either by directly applying socio-technical theory [20] or by seeking socio-technical alignments in their practices [21, 22]. Nonetheless, digital transformation must support the transformation of human activity, not the other way around. Addressing technical changes without purposefully developing and designing the human activities and processes intended to benefit from any technological aspect is an ongoing problem [23].

Thus, the role of skilled individuals and the organizational facilitating context in driving business practices transformation is underrated and not fully understood. Iden and Bygstad [24] emphasize the need to understand the skills, actions, and motivations of individuals to explain how these contribute to broader organizational capabilities [24, 25]. Therefore, undertaking a socio-technical perspective by applying the MIATM model is key to enabling flourishing context/design based on learning and timely action[2]. Socio-technical practice design involves efforts to support participating organizational actors to become change agents in their own environment [2; 25]. This provides a possibility for participants to create visions about problemsolving and thus share in ownership/visions of solutions [25, 26, 27]. Furthermore, individuals do not operate in isolation; team dynamics and structural processes play a crucial role in understanding larger phenomena [28, 29, 30]. Dynamic capabilities such as absorptive capacity/learning capacity [31] are crucial in such respect, allowing individuals to assimilate realtime data, transform it into organizational learning, and leverage this learning at a strategic level to adjust and/or transform competencies and operating routines, detect and correct errors in ways that involve modifying an organization's underlying norms, policies, and objectives [32; 33; 34; 35]. Ciborra [36] suggested that leveraging information technology for innovation involves transcending traditional formative contexts and promoting an evolutionary approach to organizational practices, aligning closely with the dynamic capability principles. The MIATM model is based on such an evolutionary approach, considering the organizational design crucial for individual to team to strategic level learning/absorptive capacity development as a foundation for transformative/evolutionary organizational practices / dynamic capability [2; 11]. This deeper level of learning, leading to fundamental change through rethinking underlying assumptions and questioning existing practices and norms, is essential for managing ambiguity,

which involves recognizing and rethinking the premises of one's actions, known as dynamic capability [33; 34; 35].

This paper explores how such individual-to-organizational learning processes leading to dynamic capability / evolutionary change operate and are enabled/impacted by flourishing organizational context design within a selection of UK firms. The study examines how both formal mechanisms and informal "learning by doing" strategies enable desirable change/practice transformation in a diverse set of companies. By applying the MIATM model, this research uncovers and highlights organizational context enablers and blockers of successful learning for practices evolution/dynamic capability. Thus, the authors argue that the MIATM model is a holistic model to drive successful learning and transformation by laying the critical foundations in terms of organizational context design. It highlights the need for a culture that promotes continuous learning and collaboration, facilitated by leadership that encourages a motivated and empowered workforce and a responsive, flexible organizational context, the resources, structures, and systems needed to enable learning processes at individual and team levels and then transfer and transform learning into change/evolution of operations at strategic/dynamic capability level [2;11]. The insights provided, along with the MIATM model, direct businesses towards adopting sustainable practices in the face of market unpredictability, highlighting organizational design and learning processes as essential key foundations for successful business transformation and evolution during VUCA. Additionally, the MIATM offers a valuable diagnostic framework for organizations, enabling them to pinpoint obstacles and deficiencies in organizational learning and context that stop them from dynamic capabilities development/evolutionary change. By being underpinned by the evolutionary/dynamic capability theory, the model is holistic and actionable in guiding the successful transition to Industry 5.0, which requires human intelligence to work in sync with technology to produce more value-added sustainable products and goods [36; 37]. The MIATM model sheds light on the organizational context and leadership as key foundations to sustainable business operations and helps identify obstacles and deficiencies in organizational learning environments. In such a way, the study also makes an important theoretical contribution to clarifying the key conditions/context for dynamic capabilities development in terms of organizational context for learning capacity development. The DC theory has been criticized that DCs are "black box" as they are very idiosyncratic and thus not well understood [38; 39].

2. Related work

The increasing complexity of global markets and rapid advances in GenAI and technology compel organizations to evolve beyond traditional strategy planning mechanisms and embrace more dynamic and experimental approaches. The development of such capabilities is an ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions [38]. However, research shows that adaptive learning in social systems is fundamentally problematic and rare [1, 38, 39]. Learning can foster positive outcomes if actively cultivated within an organization's culture that promotes dialogue, critical evaluation, collaborative learning, and aligning individual efforts with organizational goals [1, 40].

The ability to learn from errors, abandon outdated routines, and adapt to changes is acknowledged as essential for survival [41-43]. Breaking barriers like entrenched practices, broken communication flow, cultures of fear, and rigid autocratic hierarchical leadership structures is crucial [1, 44]. Developing sustainable learning capabilities within teams is crucial for sustainable growth during unstable periods, allowing organizations to assimilate real-time market data and evolve competencies for interpreting and applying external knowledge for value

creation, known as dynamic capability [32, 45, 33]. Therefore, a key factor for organizational excellence, especially in highly volatile markets, is the possession of real-time learning and adaptation mechanisms and capabilities seen and defined in the dynamic capability stream of literature as unique heterogeneous resources due to their valuable, rare, inimitable, and nonsubstitutable (VRIN) qualities [33, 46, 47].

To be able to do so, however, companies need a social practice design (SPD) that focuses on organizational change in the context of the development of new information systems. SPD promotes a way to design sustainable interaction between people, computers, and work by explicitly highlighting the engagement of participants in processes of co-design of work practices. The SPD scope of interest is focusing on the design and introduction of new participatory activities or new ways to accomplish tasks by humans in a professional work context. This provides a possibility for participants to create visions about problem-solving and thus share in the ownership of visions of solutions (see, for example, Cattani and Jacucci, 2006; Jacucci, 2007) [28; 29; 30; 39]. The perspective is fully human-centered, and the problem space entered is the one that surfaces when users need to integrate technology/new information within their own activities, which by definition means that they always have to change the way they work when the use and development of technology is introduced within their work activities [29]. To be able to account for those social-tech dimensions, the MIATM model [2, 11] is used to study the suitability/preparedness of organizational context (actors involved, resources, structure and systems, and culture) and how they impact the individual and then organizational learning processes and follow-up evolution (seize and absorb new information, sense-make and exploit/shape new actions) [48;49;50]. To the best of our knowledge, there is no other holistic model based on the foundation of individual to organizational-level learning, accounting for the idiosyncratic organizational context, as a foundation of successful practices/business transformation.

2.1. Organizational Design for Dynamic Capabilities

Dynamic capabilities are based on an organization's ability to seize and absorb, make sense of, and exploit market signals into opportunities and strategic actions and reconfigure resources swiftly [46]. Eisenhardt and Martin [33] and Teece [48] highlight that the rapid assimilation of market data and the ability to respond with agility are crucial for maintaining a competitive edge. Dynamic capabilities facilitate an organization's ability to sense, shape, and seize internal and external conditions, developing novel capabilities to address rapidly changing environments by developing novel capabilities [38]. The dynamic capabilities view acknowledges the importance of capabilities like product design and manufacturing but argues that success in volatile industries requires adaptive processes and structures that enable companies to change their operating capabilities by anticipating and learning from market shifts, developing and integrating new technologies, and thus foresee and capture new market opportunities[49; 50; 51]. To succeed, companies need to solve ambiguous problems, be agile and innovative to respond quickly to competitive pressure, and thrive in an unprecedented environment [8]. They need to learn and enable change by exploiting both daily operational routines and exploring new opportunities through proactive scanning, learning, and prompt action. These organizations, often referred to as “ambidextrous organizations,” effectively manage current operational processes while remaining vigilant and adaptable to changes in the external environment, a practice known as “managing paradox” or “managing contradictory demands” [52]. Earlier research has revealed the importance of employee learning as a prerequisite to fine-tuning expertise and coping with the rapid obsolescence of competence [48, 51]. As organizations become more complex and dynamic, individuals’ ability to learn from experience becomes

increasingly important: the knowledge and skills of employees must be constantly developed to stay aligned with emergent changes [52, 53, 54].

Learning and development of such capabilities are ongoing processes involving informationsensing, seizing and sharing, feedback-seeking, and experimenting [39]. Despite the crucial importance of learning and adaptation, adaptive learning in social systems remains problematic and rare (2; 40; 41; 42].

Linking to Schumpeter's [55] idea of creative destruction, the process of unlearning is essential for staying attuned to the dynamic nature of modern business landscapes [21, 10]. Ciborra and Lanzara [56] suggest that innovation opportunities lie in open reflexive organizational contexts, and "context-making" interventions can bring them to light, necessitating the evolution of foundational structures, culture, and norms to foster genuine innovation and adaptability. Organizations are encouraged not only to correct errors within existing frameworks but to fundamentally question and reformulate those frameworks themselves and develop dynamic capabilities for evolutionary change. This method is particularly effective in environments characterized by VUCA conditions where not only are the solutions unclear, but so too are the problems. As the realms of big data and GenAI continue to expand, the imperative for organizations to cultivate such responsive and adaptive learning processes and capabilities to convert learning into strategic action grows. This entails deploying volatile external conditions into market intelligence, subsequently converting these insights into actions to capitalize on emerging opportunities [32, 2].

This study aims to deepen the understanding of how organizational context/design impacts and is a key foundation for successful individual to organizational learning through leveraging real-time market intelligence for new capabilities for business transformation in a rapidly evolving market. We argue that the success of such learning leading to dynamic capability development requires flexible and learning-enabling organizational design as a foundation as per the MIATM model.

2.2. Role of Prior Knowledge, Path Dependency, and Transactive Memory Systems

The application of well/prior developed absorptive capabilities and transactive memory systems in organizations enhances the capability to manage knowledge effectively among team members [57]. This system allows groups to collectively transmit, make sense of, store, retrieve, and communicate knowledge more effectively, which is crucial in complex problem-solving situations. By enabling learning and information flow and understanding who knows what, leaders can better coordinate their actions and innovate more effectively, thus enhancing their dynamic capabilities. This concept aligns with the notion of prior knowledge in dynamic capabilities, emphasizing the importance of information absorption and transformation routines. Knowledge is cumulative, and the more absorptive capacity organizations develop, the better they become at continuing this growth [34].

2.3. Impact of Leadership and Organizational Culture on Learning Routines

Leadership plays a crucial role in fostering an environment conducive to learning and adaptability. Leaders who embrace a vision of continuous learning and encourage their organizations to question existing norms and adapt to new realities help foster a culture of curiosity, calculated risk-taking, and innovation. Empowering employees to take active roles in problem-solving and decision-making processes enhances the organization's overall responsiveness to change. As organizational sociologist Stinchcombe [58] noted, *"If organizations have to deal with uncertainties, then someplace in the organization there have to be people who bring information to bear on those uncertainties."*

2.4. Necessity of a Supportive Organizational Structure

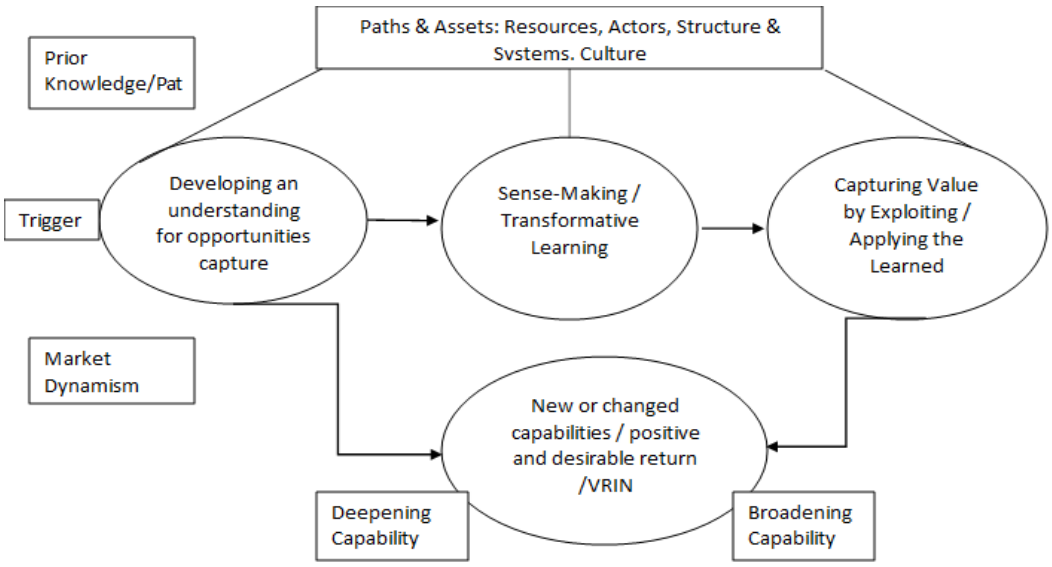
The structure of an organization significantly impacts its dynamic capabilities. Structures and systems that promote cross-departmental communication and information flow, collaboration, and the questioning and discarding of outdated practices enable faster problem-solving and opportunity capture. Decentralized decision-making empowers individuals at various levels, enhancing the organization's ability to respond swiftly to changes without being bogged down by bureaucratic delays. Ciborra's [56] insights on leveraging information technology for organizational innovation emphasize the transformation of "formative contexts," suggesting that organizations must evolve their foundational structures to foster genuine innovation and adaptability. As suggested by Felin and Powell [6], organizational design is a crucial enabler of dynamic capabilities.

Building on these concepts and noting the current lack of a comprehensive model for organizational design, the MIATM model developed by Atanassova and Bednar [2; 11] is applied. The model is explored in the next section, illustrating how this framework can guide the practical application of these theories in enhancing organizational learning and strategic responsiveness and identifying areas for improvement.

3. The MIATM Model

Achieving dynamic capabilities through real-time learning and strategic adaptation requires a paradigm shift away from multilayered reporting structures, rigid annual budgeting, compliance-oriented culture, separation of business practices and technology, and other traits dominating organizations for the past hundred years. Thus, a discontinuity of this operating style should provide an opportunity for organizations to turn their operating models into a competitive advantage [59; 60; 61]. Our research focuses on how the organizational context, encompassing resources, actors, structures, systems, and culture, influences individual (seize/developing an understanding for opportunity capture) and organizational-level learning (sense-making and exploiting of new understanding) processes interact to develop dynamic capabilities to enable change/transformation in the face of VUCA times. The study adopts the MIATM model proposed by Atanassova and Bednar [2; 11]. This model is instrumental in guiding the understanding of knowledge acquisition, transfer, and capability creation processes and the facilitating context required that is crucial for a firm's operational success in dynamic environments. Moreover, the model encompasses / accounts for the idiosyncratic context as a key foundation for enabling the individual to organizational-level learning and successful capability development (micro to macro). Thus, the model presents a holistic lens/perspective of dynamic capabilities micro to macro development and foundations and adds to dynamic capability literature where dynamic capabilities are often referred to as black box, and there are numerous calls for further research on their micro-foundations [33; 38].

Figure 1: The MIATM Model 3.0 (Atanassova and Bednar, 2022)



Our research consists of three phases/processes aligned with the MIATM model. The first phase involves developing an understanding of the organizational background, understanding market dynamism, triggers of organizational learning, and prior knowledge. The second phase focuses on the processes of absorptive capacity and individual learning at the operating capability level. It examines the processes of recognition and absorption of new external information proactively, as well as the organizational conditions enabling or hindering these learning processes (paths / prior knowledge / transactive memory / and assets, such as resources, actors, structure, and systems, organizational culture). The third phase explores the assimilation/sensemaking and transfer of learning within the organization, as well as the process of capturing value from that shared learning by exploiting the learned in terms of changes to operating practices (deepening capabilities) or complete removal/renewal of routines/products/processes/practices (broadening dynamic capabilities development). Dynamic capabilities are measured and understood through the changes in ordinary/ operating capability [34, 61].

4. Methodology

To collect data, interviews were conducted with employees from 18 diverse B2B and B2C organizations in the UK. The aim was to understand whether employees were provided with the context, culture, and resources to explore and learn from external market signals and apply this learning to develop improved/desirable change in their operations. The interviews, lasting 40 to 60 minutes each, were conducted by experienced academic researchers in English. The semistructured interviews followed the MIATM model framework, seeking to identify features, sources, and organizational contexts that facilitate or impede dynamic capabilities development as per the model (interview protocol is available per request). Data analysis involved coding and thematic analysis, examining each construct of the MIATM model separately to identify patterns and themes and their interactions in transforming practices.

The reliability and validity of the study were ensured by categorizing data to prevent misunderstandings or oversimplifications. The analysis examined the organizational background

and prior knowledge, market dynamism, triggers of learning processes, individual learning at the operational level, sense-making, and the transfer to strategic capability at the organizational level. Dynamic capabilities were defined as those that change, create, or extend organizational operating capabilities and possess and develop VRIN resources/characteristics [32, 58, 34]. The credibility of the data was ensured through simultaneous data collection and analysis, prolonged engagement, in-depth understanding of the organizational context, and member checks. The researchers' analysis examined each construct of the MIATM model separately: organizational background and prior knowledge, market dynamism and triggers of the learning processes, individual learning at the operating level, sense-making, and transfer to dynamic/strategic capability at the organizational level, and the contributing context. Lastly, it examined how the three routines developed over time and enabled operational evolution, organizational excellence (micro to macro level), and the development of valuable, rare, inimitable, non-substitutable (VRIN) resources. Something was considered a dynamic capability if it changed, created, or extended organizational operating capabilities by creating or extending VRIN resources and abilities. Respondents' validations were performed as and when needed to ensure that their views and behaviors were correctly understood.

4.1. Participant Selection

Eighteen participants were interviewed, including employees from four B2B organizations, four from both B2C and B2B models, and ten from B2C organizations. These participants were drawn from knowledge-intensive industries such as ICT, governmental rescue services, healthcare, human resource consulting, and education, where knowledge development and management are crucial. Two entrepreneurial small companies were included for their learning-by-doing approaches and quick adaptation capabilities [62]. Additionally, participants from eight traditional industry businesses were interviewed to ensure comparability, as these companies often face challenges in adapting due to complex structures and bureaucratic inertia.

This diverse participant pool was selected to illuminate how micro-to-macro processes of learning unfold and identify any organizational contexts that hinder them. The goal was to develop "information-rich cases" that offer deep insights into the central issues of the study [63]. The interviewees spanned all organizational levels, providing comprehensive perspectives on the support from leaders and managers. This approach ensured a more accurate understanding of organizational support, as employee accounts often reveal more reliable indicators of actual support compared to managerial self-perceptions.

5. Findings

The findings of this study significantly enhance the understanding of how organizational design/context influences individual learning as a micro-foundation of organizational learning and competitive advantage, shaping dynamic capability in terms of strategic agility within organizations. The research focuses on the interconnectedness of a thriving organizational context, either enabling or blocking learning routines, which subsequently leads to the development of dynamic capabilities. The application of the MIATM 3.0 model revealed insightful differences in how organizations handle learning processes, uncovering areas for improvement and strategies for enhancing capability and agility in volatile, uncertain, complex, and ambiguous (VUCA) environments. Detailed discussions of these key findings, structured under the MIATM model, are provided in the next section, highlighting the contrasting dynamics between "Learning fit companies" and "Learning unprepared."

5.1 Learning Fit Companies

In our study, the term "learning fit companies" encompasses organizations exemplifying proactive learning leading to evolutionary change through dynamic capability across a diverse range of sectors. These include participants from technology-driven firms and knowledge-intensive business services (KIBS).

5.1.1 Background

Participants in this category integrated both structured and informal environmental scanning methods into their business operations. Some employed agile/scrum/kanban project management methodologies to encourage rapid decision-making and error correction, while others used ad-hoc, experimental, learning-by-doing approaches characteristic of small entrepreneurial firms. Both approaches were founded on a profound belief that change is constant and that adapting to change and uncertainty quickly is essential for survival. A Director of Design (DD) emphasized, *"Agility and the ability to learn on the job are key,"* highlighting the necessity of these skills in today's business environment. Similarly, a Senior Consultant (SC) in healthcare recruitment noted, "*To keep my knowledge and abilities current and useful in a field that is always changing, I am committed to a program of lifelong learning and growth."*

The ability to monitor the environment and adapt was underscored as key and a competitive edge. Participants acknowledged the significance of being responsive to technological advancements, new competition, and market price fluctuations, always with an eye toward strategic alignment with organizational goals. This readiness to adapt was seen as foundational to their success in fostering a learning culture within their organizations. As DD encapsulated this ethos, "*Provide quality, continuous innovation, through customer-focused service,"* highlighting the importance of maintaining a clear understanding of the organization's mission amidst the challenging external environment. Similarly, SC emphasized the necessity of flexibility and consistency in healthcare recruiting, asserting, "*Technology and automation help us simplify our operations and provide value,"* enabling continual adjustments to better serve their stakeholders. The participants demonstrated overall awareness and receptiveness to industry dynamics, along with a clear understanding of their companies' goals/strategic direction and missions.

5.1.2 Recognition and Adaptability

Learning fit companies were adept at anticipating industry trends and customer needs, which is crucial for developing dynamic capability. The Data Analytics and Organization Team (DART), as illustrated in a rescue service scenario, played a pivotal role in helping the rescue service stay on top of all environmental dynamics. The Quality Assurance Manager (QAM) stated, *"We use a specialist data analysis and modeling organization to crunch numbers on our current and future risks,"* showcasing the critical role of cross-functional teams in enhancing operational efficiency through strategic data analysis and sharing. Communication technologies for knowledge sharing and storage, such as SharePoint, OneNote, Outlook, and MS Teams, facilitated effective transmission and storage of information.

The QAM outlined their process of drafting and disseminating high-order strategic goals to organizational departments and teams and requesting their involvement and contribution to ensure broad organizational involvement and alignment, employee buy-in, and adaptability. Incorporating feedback from operational levels was essential as it was perceived as "*fueling appropriate changes in tactics or operations,"* demonstrating the employees' involvement, alignment, and buy-in importance and the necessity to navigate VUCA conditions effectively. Continuous adaptation to industry shifts is underscored by a healthcare recruitment SC, who notes the importance of a learning and unlearning mindset. Similarly, the Customer Service employee in a small restaurant (CS) and English Teacher (ET) interviewees highlighted competitive monitoring and environmental scanning through "*ad-hoc research practices,"* indicating proactive measures taken to stay competitive. The SC pointed out the importance of such vigilant environmental scanning and learning for the

identification and emergence of new service models and for helping clients adopt new ways of working to improve quality, efficiency, and outcomes. "*Keep up with the latest trends: innovative staffing solutions that utilize the latest technology, such as virtual interviews and remote work arrangements. Also, expanding your professional network and learning about the latest developments in the sector. Interacting with colleagues and mentors is crucial too.*" These insights into the practices and mindsets of learning fit companies and highlight their ability to maintain strategic agility and operational excellence through proactive learning and adaptability, which is crucial for sustaining competitive advantage in rapidly changing environments.

5.1.3 Assimilation and Sense-Making

During the interviews, participants from dynamic organizations highlighted the importance of assimilation and internal, collaborative cross-departmental meetings and informal discussions in developing new understandings for opportunity capture and decision-making. This process is supported by the use of digital tools, which enhance communication, knowledge sharing, and storage. A software developer pointed out the use of diverse tools for collaboration and knowledge storage, emphasizing the significance of technology in knowledge sharing.

The QAM from the rescue service mentioned, "*For areas such as risks to our community, we have continuous horizon scanning activities,*" employing systems like Farynor and Power BI for data storage and analysis. This proactive stance towards risk management and the emphasis on being "*very open and not constrained when undertaking the evaluation*" illustrate the dynamic approach to navigating uncertainty and complexity. The QAM noted that strategy development in their organization often involves working with unclear objectives and refining them through continuous information absorption and analysis: *"We often work with unclear objectives and use the information and analysis to refine the objectives,"* highlighting the vigilant, dynamic approach to learning and strategy development in their organization, where environmental scanning and identified trends/ changes/opportunities/threats are transformed to strategic change/action/ business changes are implemented and goals are set based on the real-time new learning developed.

The collaborative ethos extends to healthcare recruitment, where the SC emphasized teamwork: *"For everyone's wants to be satisfied, it's crucial that they work together effectively."* Training and development initiatives are highlighted as essential for providing employees with the necessary skills and knowledge. Both extrinsic and intrinsic rewards were pointed out as essential and employed in learning fit companies to ensure that employees are aligned and even driving strategic goals and operating routines transformation.

The ET added, *"Training and development programs help guide this process so that workers acquire the expertise they need to do their jobs well."*

In education, the ET highlighted the importance of experimenting and testing new teaching methods and innovative methodologies.

5.1.4 Exploitation of Learning / Dynamic Capabilities

In terms of dynamic capabilities, the following examples have been identified. The DD emphasized the strategic pivot towards direct customer engagement to enhance revenue and reclaim customer relationships: "*Through research and advancing digital technology, we understood the need to cut the middleman and sell directly to customers through the website.*" This move not only aimed at profit maximization by reducing costs but also streamlined workflows, enhancing customer understanding and relationships significantly. Thus, they focused on providing *"quality, continuous innovation, through customer-focused service,"* underscoring the importance of direct customer engagement leveraging digital technology for business practices transformation and providing more valuable products/services by solving critical customer problems. They were able to reflect, question current practices, and change them to re-capture value (dynamic capability).

The QAM of a fire rescue service elaborated on a holistic method to craft their community risk management plan, involving third-party data modeling and extensive internal review and contribution. This meticulous process culminated in a robust four-year strategy encompassing 36 key objectives: *"We scan the environment for changes, contextualize the risk, assess impact, develop options, select a strategy, consult stakeholders, and then implement, monitor, and review the strategy."* Such vigilance, adaptability, and responsive strategy were claimed as critical for community service focused on counteracting unpredictable change.

In education, the ET highlighted their openness to revamping teaching methods for enhanced learning experiences, including "*revising time, experimenting with technology, adapting materials, and tailoring teaching styles based on learner feedback and style."* This adaptive approach is crucial for making education more accessible, current, and engaging.

The CS from an entrepreneurial restaurant discussed how insights from ad-hoc (typical intuitive entrepreneurial) competitor analysis lead to adjustments in their culinary offerings: "*Depending on their objective, like if they were sampling competitors' food, this information might influence changes in internal recipes or processes to improve which the chefs would be responsible for,"* showcasing an entrepreneurial, "learning by doing" and quick experimentation approach as the foundation of operating routines changes, and competitive advantage through quick adaptations, also seen as dynamic capabilities.

5.2 Learning Unprepared Companies

Contrasting with learning fit companies, "learning unprepared companies" are organizations, primarily within traditional sectors, exhibiting rigid and less adaptable learning and information management approaches and autocratic leadership style. These include participants from industries such as tourism, accommodation, and healthcare.

5.2.1 Background and Learning Triggers

Participants from these organizations show a marked disengagement from proactive learning, with an outlined top-down communication approach that leaves employees disengaged and even alienated from broader company objectives. A Logistic Assistant (LA) described their role as confined to specific tasks without broader strategic insight. A Sales Advisor (SA) noted, "*No, to convert walk-ins into sales with a KPI of 12%,"* indicating a focus solely on immediate sales targets without a broader understanding of the company's strategy or goals. A Network Engineer (NE) in the NHS stated, "*As an assistant manager, I do not detect changes; the higher-up staff like regional managers are supposed to. I only have to implement and follow the changes made,"* highlighting a reactive approach to change: *"When something goes wrong, it needs action."*

A dental clinic assistant (DA) pointed out: *"There were no aims and objectives. No targets. Receiving feedback from the manager based on changes that need to occur, such as packages and prices. Stable industry, no vigilance; "the managers will communicate any necessary changes."* Moreover, the DA described the workplace environment as "*very overwhelming and stressful*," where "*leadership doesn't allow room for growth or changes to occur,"* highlighting a lack of opportunity for professional development or contribution to organizational change, even fear of making mistakes. The DA described herself as overwhelmed and operating in significant stress and ambiguity.

5.2.2 Recognition, Assimilation and Sense-Making

The interviewed LA described communication as *"clear and easy to understand,"* yet he did not know the organizational goals, mission, and vision, exhibiting a complete disconnect from broader company goals. This system, where employees are passive recipients of information, contributed to a reactive rather than proactive workplace culture. The hierarchical structure of these companies meant that information flowed top-down, with little to no input or active engagement from lower-level employees. For example, the LA mentioned, "*It is not relevant to*

know company objectives." This sentiment was echoed by another employee, who said, "*As an assistant manager, I do not detect changes; the higher-up staff, like regional managers are supposed to. I only have to implement and follow the changes made."*

5.2.3 Exploitation of Learning / Dynamic Capabilities

The focus of these organizations, as reported by participants, is on maintaining existing business practices and operating models and showing significant reluctance and fear of change. Due to poor management and communication practices, employees were alienated from company strategic and learning practices, thus not fulfilling their full potential. They were solely motivated by extrinsic rewards – bonuses and job security, without any intrinsic motivation to contribute/fit organizational goals, as they were even unaware, disengaged from them. The Corporate Law Personal Assistant (PA) noted, "*Leadership is very strict. The manager makes changes without speaking to employees on decisions,"* highlighting a culture that discourages initiative and adaptation, alienating employees. Moreover, a culture of fear in the dental clinic manifested in defensive routines, with the DA saying: "*Being able to maneuver in a negative environment, keeping to yourself more often and speaking less."* This corporate culture often fostered passivity, dependence, and subordination, resulting in significant insecurity and ambiguity among teams. This culture of blame and fear of failure, combined with a lack of open communication, led employees to feel disempowered and disinclined to take initiative, even fearful of change.

6. Discussion and Conclusion

Our research and the application of the MIATM model uncovered a stark contrast between the two types of organizational contexts. Employees in learning fit companies, primarily pertaining to the B2B tech, ICT, and knowledge-intensive sectors, demonstrated remarkable adaptability, employing networking, open-mindedness, and a learning-by-doing approach. These practices were intensified by digital technologies and data proliferation and were supported by already established and working prior knowledge/prior absorptive capacity routines/ learning routines and established transactive memories within the companies. The interviewees demonstrated engagement in and willingness to experiment and contribute to the company's future moves, good knowledge of the company's mission and goals, quick communication, ownership, autonomy, calculated risk-taking, and readiness to change. In contrast, employees in more traditional B2C industries, especially those lower in the organizational hierarchy, struggled with change initiatives. The participants from such "learning unprepared companies" displayed a tendency to stick to established routines, often being unaware of company goals and vision, demonstrating resistance to change, fear of blame and failure, and reliance solely on extrinsic motivations like salary, job security, and performance-related key performance indicators (KPIs).

Leadership emerged as a pivotal factor in this dynamic. In learning-fit companies, leadership fosters a proactive, experimental, and vigilant learning culture, emphasizing intrinsic, purpose-related motivation to work. Conversely, in learning unprepared settings, leadership tended to be more risk-averse, reactive, and operationally focused, particularly on efficiencies and costcutting, waiting for the "things to get back to normal" with a top-down management approach and hierarchical organizational structure. This dichotomy highlighted the significant role of leadership in either enabling or impeding employee learning initiatives and flourishing organizational context for managing dynamic and uncertain environments. The study identified two distinct types of leadership practices: defensive and ambidextrous. Defensive leadership tended to be reactive and risk-averse, whereas ambidextrous leadership balanced efficiency with a keen eye on environmental changes, transforming insights into strategic actions. These leaders managed contradictory demands and viewed change as an opportunity for sustainable competitive advantage. Our findings indicate that while employees may possess the ability to learn and adapt, they often lack the enabling organizational context and leadership empowerment needed to effectively engage in and apply this learning. This gap was especially evident in larger, hierarchical B2C organizations compared to smaller, more agile,

entrepreneurial B2B companies and particularly affected junior employees lower in the organizational hierarchy. Our research confirms that differences in organizational context and leadership are more indicative of firm performance variances than industry differences. This study underscores the critical importance of organizational context and leadership in facilitating a proactive learning culture and learning and quick adaptation routines within flourishing organizational culture as the foundation of capability development for a desirable change. It highlights the MIATM 3.0 model as an actionable framework for studying and understanding these dynamics and guiding organizations toward sustainable practice transformation based on real-time learning and real-time response to VUCA conditions.

The findings underscore the importance of establishing a flourishing context and organizational design for dynamic capability through absorptive capacity development in managing VUCA effectively. This will enable companies to not only respond to immediate challenges but also to proactively shape their market environments by developing dynamic capabilities such as new products, partnerships, systems, and ways of working. Developing and applying dynamic capabilities successfully involves evolving alongside external changes and co-creating their business future through stakeholder interactions facilitated by a conducive internal organizational climate and a culture of learning, open-mindedness, and employee empowerment. These elements, along with empowering leadership, underpin organizational long-term success and sustainability in an unpredictable world, as facilitated by the dynamic capabilities and VRIN resources they continuously develop. The findings suggest that traditional management practices and autocratic leadership need urgent reevaluation in today's complex business environment, as those practices add to the uncertainty and ambiguity for employees and thus hinder individual and organizational growth. The study highlights organizational learning as a vital capability for evolving/transforming practices in response to uncertainty in VUCA environments and the MIATM model as an actionable guide and diagnostic tool to identify barriers and gaps in organizational learning capabilities and facilitating context, thus uncovering the idiosyncratic nature and context, which facilitates dynamic capability development.

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