

Strategic Agility of an Incumbent Firm and Chief Digital Officer in the Face of Digital Innovation: A Microfoundation Approach

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Introduction

In this paper, we focus on the **role of the Chief Digital Officer (CDO)** on the strategic agility of incumbent firms that have created an external startup to accelerate their digital transformation:

- **Digital transformation** is a key strategic priority for incumbent firms in different industries [1]. **Digital technologies**, such as big data analytics, the Internet of Things (IoT), 3-D printing or artificial intelligence offer fundamentally new ways of doing business, may even have the potential to **disrupt traditional business concepts** [1], while enabling **digital innovations** [2].
- To manage changes, triggered by digital transformation, incumbent firms are increasingly establishing a new managerial position of a **Chief Digital Officer (CDO)** [15] [16]. The CDO is the company's digital specialist, who is responsible for transforming the company as a whole [14].
- The challenges associated with the digital transformation of incumbent firms are amplified as their business environment changes rapidly. In this context, a sometimes radical transformation of the business model is required, which some of these firms can achieve by creating an **external (called excubated) digital startup** [7] [8].

**Digital innovation
and transformation**

**Chief Digital Officer
(CDO)**

**External (excubated)
startup**

Introduction

- Consequently, the parent company's CDO, who is strongly involved in the management of the nascent startup, need to upgrade existing skills/competencies and develop new aptitudes [14], because **strategic agility** is needed more than in stable contexts [19] [20].
- Prior research on the CDO: fragmented perspective through considering certain aspects, such as role types [15] [16], skills and competencies [17], or organizational design parameters [14].
- Research lacks a comprehensive understanding of this position that is essential for a firm's long-term market success (e.g., [21]) in the case of the creation of a **digital startup associated with an incumbent firm**, in order to offer new digital products and services via a new business model [1].
- In addition, few studies focus on how and under what conditions **individual actions (microfoundations)** contribute to and/or support routines that, in turn, lead to a digital startup's strategic agility in pursuing digital innovation success.

Introduction

- Thus, the research question is:

How do the skills/competencies of the CDO (individual microfoundations) influence the strategic agility of an incumbent firm, when it has chosen to create an excubated startup to successfully introduce digital innovations to the market?

- Furthermore, this article examines **how the business and innovation ecosystem moderates** the influence of individual-level microfoundations of the CDO on the strategic agility of the excubated startup. We believe that the startup's business and innovation ecosystem should be considered, because it may bring (or not) new contextual knowledge that is crucial for the achievement of strategic agility.
- Therefore, we propose **a model that aims to better understand and explain** how individual factors (microfoundations) of the CDO influence differences in the routines and capabilities of a startup created by an incumbent firm that underpin strategic agility in rapidly changing business environments.

Creation of Excubated Startups by Incumbent Firms

- **Digital transformation** is characterized by planned changes built on a foundation of advanced technologies. Digital transformation can be described as an organizational shift to big data, analytics, the cloud, mobile communication technologies, social media platforms, etc. to provide goods and services [21].
- To accelerate their digital transformation and imagine new digital services and products, some incumbent firms choose to create **an external (excubated) startup**, not only to improve efficiency based on new technologies, but also to provide new business value with innovative products, services, or business models – especially in the form of **digital innovation**, which is embodied or enabled by digital technologies [2] [3].
- The creation of this autonomous and independent startup should not be confused with working closely with existing startups (e.g., [12]), hosting startups, creating a corporate incubator or FabLab, taking an equity stake, etc.
- This digital startup allows for a focus on digital innovation, which is considered crucial to the success of companies in creating new value for their business [5] [6].

CDO's Toles and Distinctive Skills in Large Firms

- The role of the CDO is to **orchestrate the digital innovations and transformation** of a company [12]:
 - Helps senior management formulate and implement a specific digital transformation strategy
 - Aims to place the company at the forefront of ongoing digital evolution
 - Plays a broader role than the directors of individual digital business units
 - Promotes cross-functional collaboration
- The CDO position can be considered as **unique** compared to other top management positions:
 - The concrete role of the CDO can be interpreted in different ways by firms of different size. The position of the CDO can be established as part of the C-Suite or some levels below it [31] [32].
 - It is too early to predict whether the CDO position will persist in the long term or become irrelevant due to deep penetration of digital technologies within a firm [14].
- In most cases, the parent company's CDO is **responsible for managing the digital initiatives of startups** to ensure that they can deliver new digital services and products by leveraging their digital innovation capabilities.

Strategic Agility Through a Microfoundations Lens

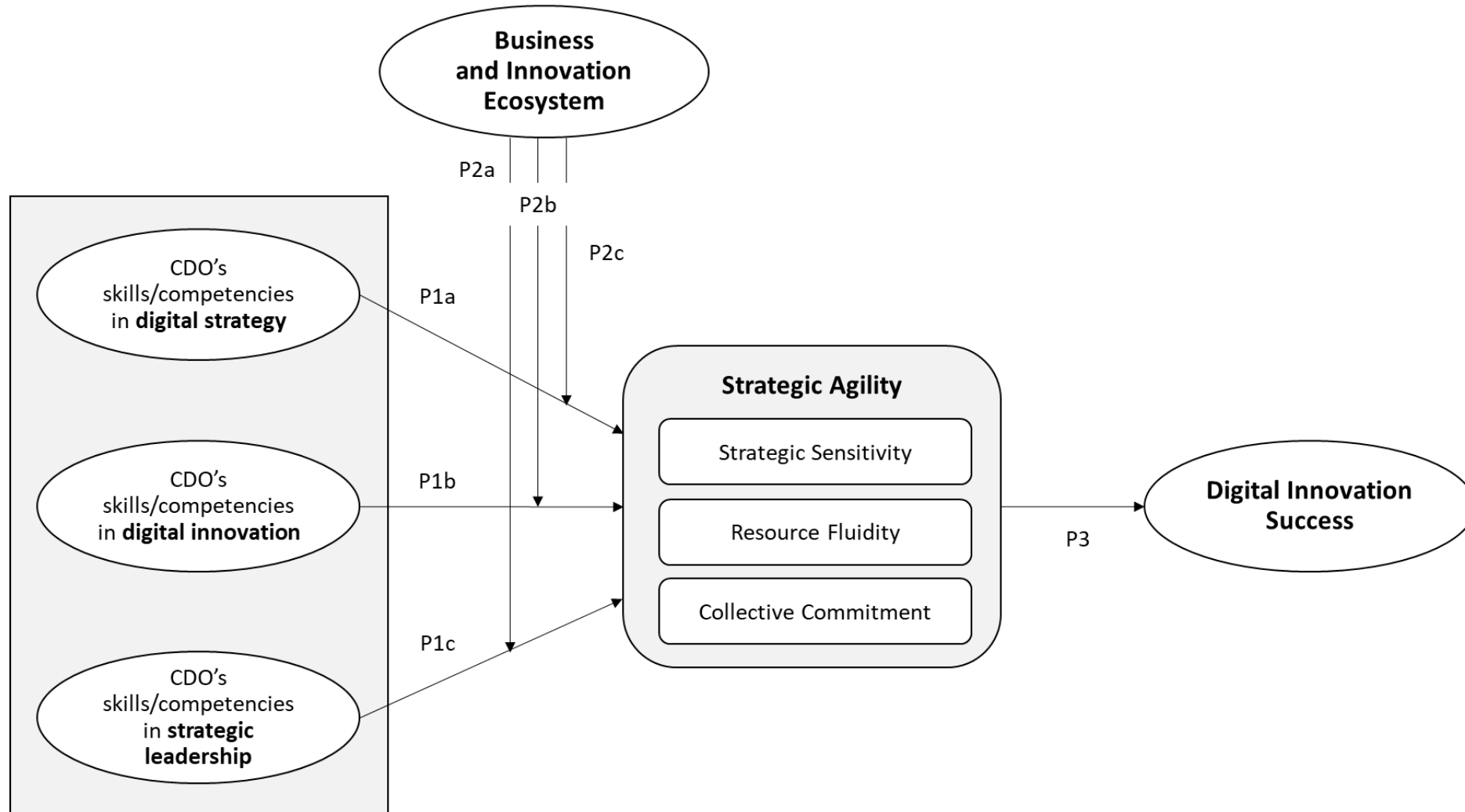
- **Strategic agility** has been identified as a success factor for firms that must survive in rapidly changing business environments [19] [20]. Strategic agility represents the company's ability to constantly adjust its strategic axes to changing and uncertain environments to deploy innovative methods of value creation [19].
- Strategic agility is a combination of dynamic capabilities (or meta capabilities) such as: **strategic sensitivity**, **resource fluidity**, and **collective commitment** [19] [20].
- **Microfoundations** reflect individual actions that shape strategy and organization [24]. Teece [33] defines *"the microfoundations of dynamic capabilities – the distinct skills, processes, procedures, organizational structures, decision rules, and disciplines – which undergird enterprise-level sensing, seizing, and reconfiguring capacities are difficult to develop and deploy"* ([33], p. 1319).



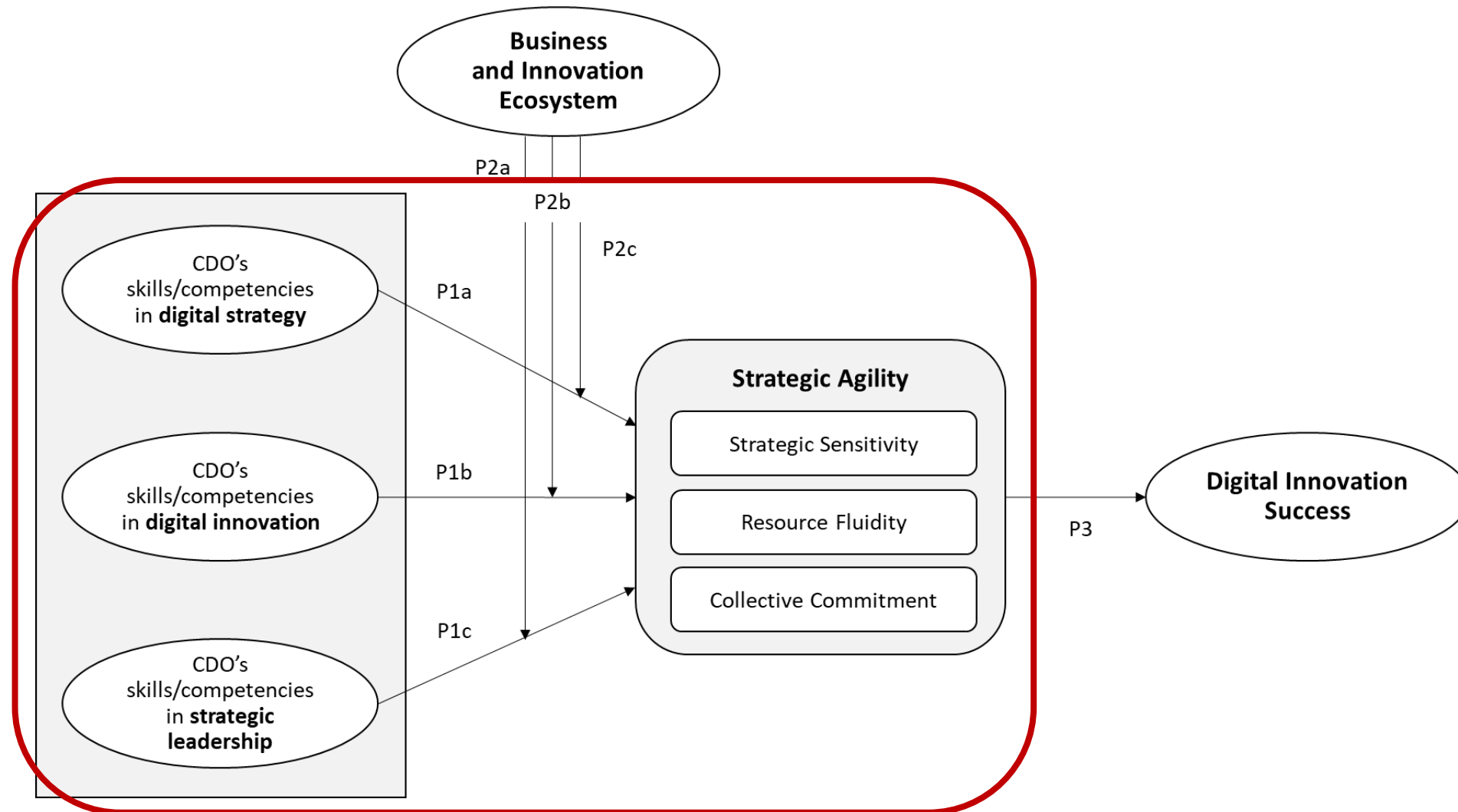
CDO, Strategic Agility and Digital Innovation

- Agility is the subject of research in many fields and recent studies on strategic agility aim to position it in the context of digital transformation (e.g., [19]).
- Studies of strategic agility or the attributes of the concept have used an overall organizational level/unit of analysis and have not focused on individual contributions to achieving strategic agility. This traditional perspective requires theoretical development to bridge the different levels of analysis, as a complete explanation of context at the organizational level should begin **with an understanding of the individual** [23] [24].
- Moreover, the theorization of the nature of the CDO's skills and competencies (e.g., [17]) does not consider the context of **the business and innovation ecosystem**, and everything happens as if these skills and competencies could be expressed regardless of the context.
- Therefore, our theorization uses a **microfoundational perspective** embedded in dynamic capabilities [33] to advance research on strategic agility. Our idea is to improve our understanding of the strategic agility of firms (macro-level phenomena) with mechanisms that operate at the micro-level (individual microfoundations).

Proposed Conceptual Model

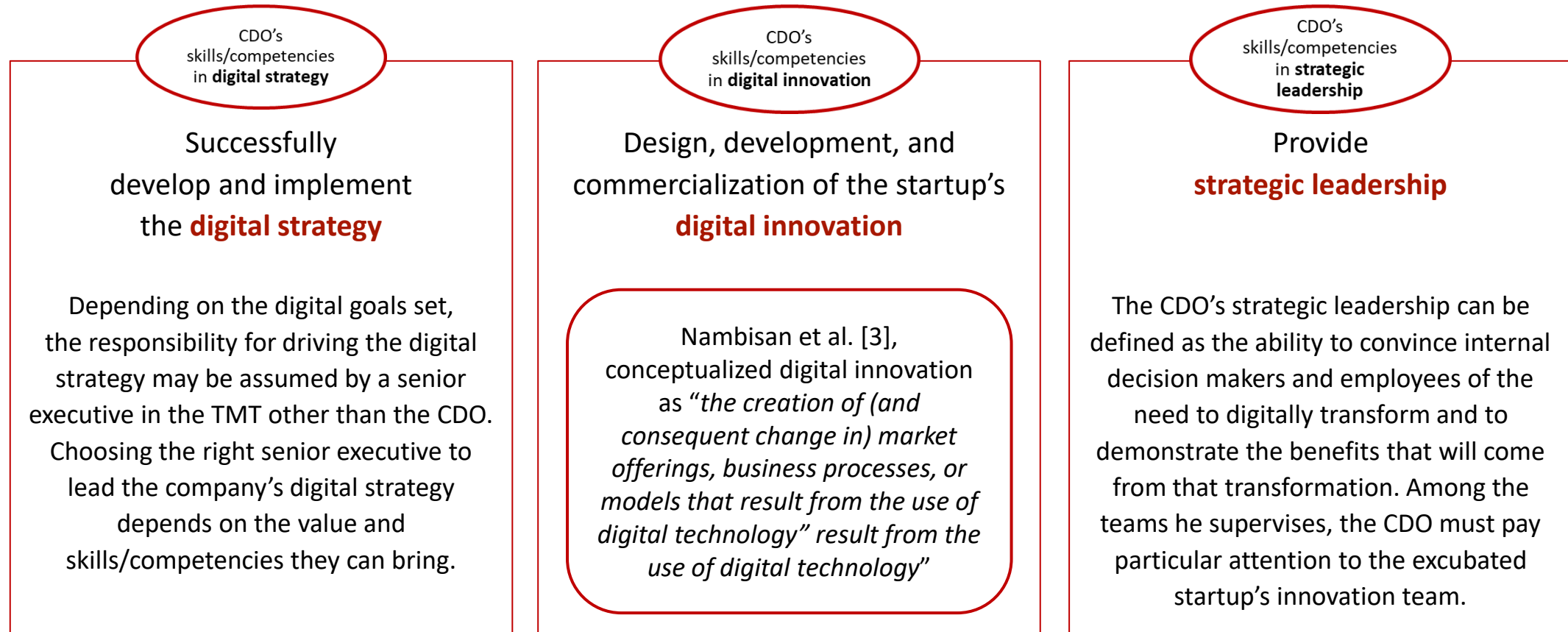


CDO's Skills/Competencies and Strategic Agility

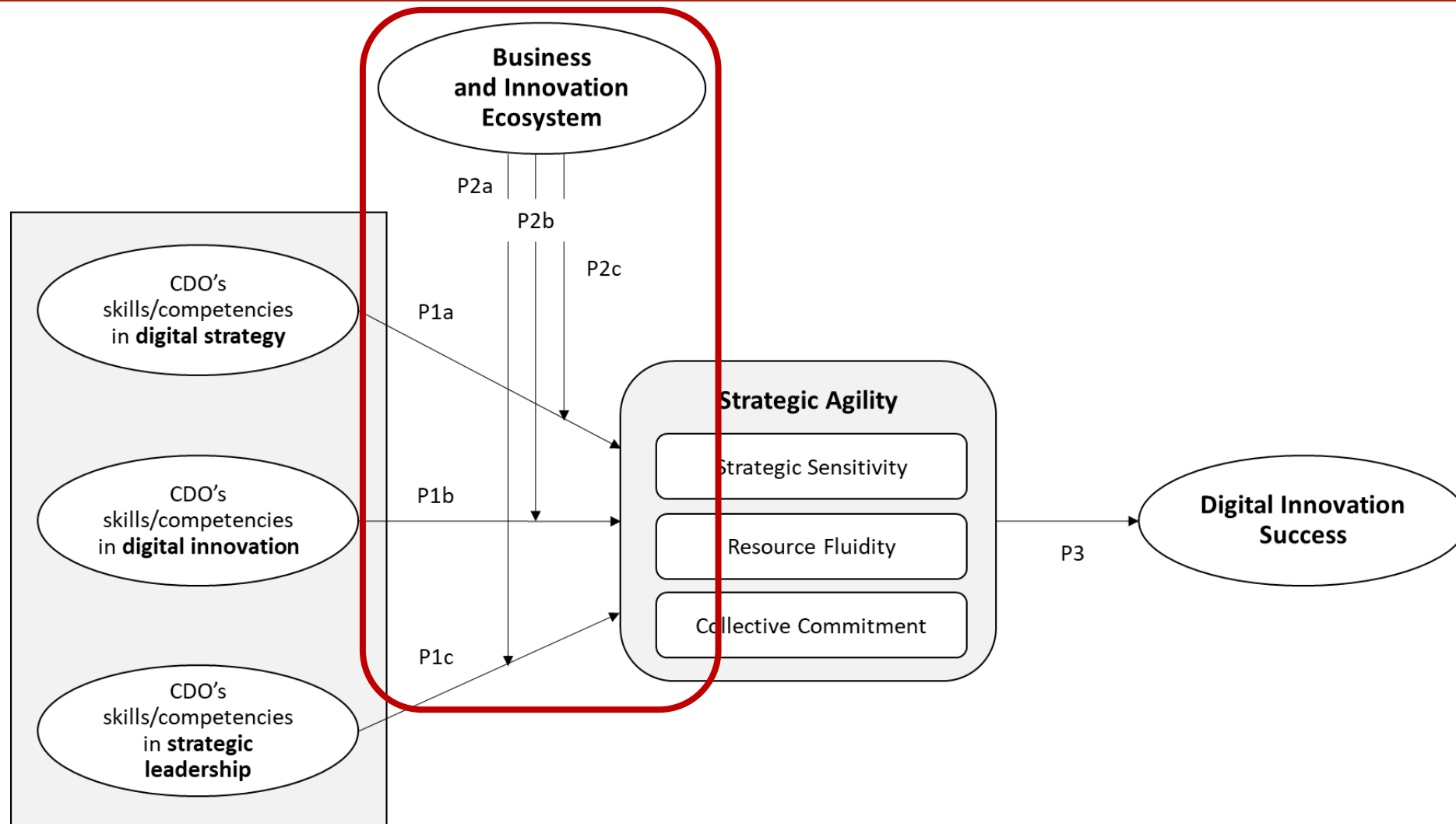


CDO's Skills/Competencies and Strategic Agility

When large firms drive their digital transformation, the key skills/competencies of the CDO most decisive for success are those that contribute to the achievement of the role's main objectives, which can be broken down into **three categories** [21] [30] [32].



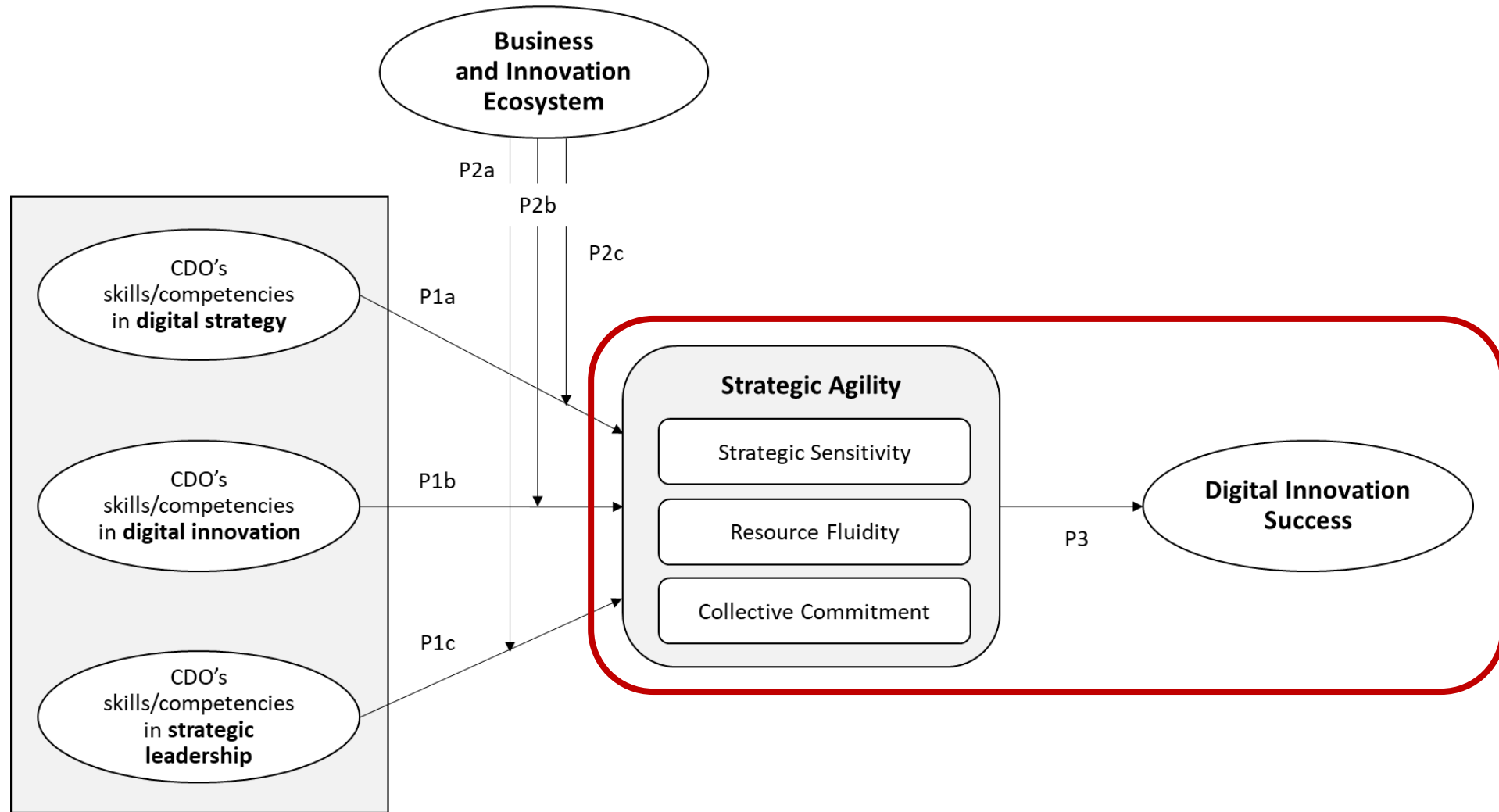
Moderating Effect of the Innovation Ecosystem



Moderating Effect of the Innovation Ecosystem

- To succeed, the CDO must maintain a close relationship with the ecosystem's actors in which the startup is immersed. The concept of **business ecosystems** was introduced in the 1990s by Moore [27] [29] and refers to business networks that are formed beyond territorial limits, since cooperation between firms is on an international scale. The ecosystem refers to actors (organizations, firms, startups, universities, investors, resources, etc.) that interact to promote innovation.
- Consequently, the CDO's responsibility is broadened: drawing on the CDO skills in digital strategy, digital innovation, and strategic leadership, they are led to play a role as facilitator between the firm, the excubated startup, and its ecosystem [7] [8]:
 - This relationship is essential, as the startup's ability to successfully design, prototype, develop, and commercialize digital innovations depends on the quality of its interactions with its ecosystem [27].
 - To the extent that the CDO plays a facilitating role with the ecosystem actors, it follows that the ecosystem exerts a positive influence on the relationship between the CDO represented by the three core skills/competencies and the firm strategic agility.

Strategic Agility and Digital Innovation Success



Strategic Agility and Digital Innovation Success



Strategic sensitivity

Strategic sensitivity allows the firm to obtain useful information from its environment, detect opportunities and internal constraints according to strategic priorities, market, and competitive conditions. Via strategic sensitivity, the firm is aware of capabilities, technologies, and processes useful for designing, developing, and launching innovations. By increasing its strategic sensitivity, the firm will identify unmet market needs and changes in its environment, which generates favorable conditions for developing and launching innovations.

Resource fluidity

Supports effective management of the innovation portfolio. The ability to allocate and reallocate resources is critical to the development of innovations. When resource fluidity increases, internal processes become more flexible and easily modified [19]. As resources (financial, human, technological, etc.) become more mobile within the firm, greater flexibility is achieved, allowing for reorganization or redeployment of resources, and supporting strategic goals, such as driving digital transformation or managing a portfolio of innovations.

Collective commitment

Refers to the managerial commitment of the company, which fosters organizational adaptation in the face of rapid and unexpected changes in the environment. Studies on dynamic capabilities suggest that when a new opportunity is perceived, management decisions must be made quickly to take advantage of that opportunity [19]. These collective management decisions are essential for internal changes aimed at innovation management processes [19].

Contributions

1

We contribute to the study of **microfoundations** by conceptualizing the impact of the CDO skills (individual microfoundations) responsible for the digital innovations of an *excubated* startup on the strategic agility of a large firm leading a digital transformation.

2

By positing that the ecosystem in which the excubated startup is embedded plays moderating roles along microfoundations and dimensions of strategic agility, we **emphasize the place of the ecosystem in the growth of startups.**

3

We add insights to digital transformation research on the **relationship between dynamic capabilities and digital transformation.** We study the phenomenon from the perspective of CDOs involved in digital innovation.

4

From a practical perspective, our model should be of interest to **CDOs managing an innovation portfolio**, as it highlights a new contribution of CDOs to innovation management.

Limitations and Future Research

1

This study has scratched the surface of the relation between strategic agility and microfoundations.

A growing body of work focuses on the microfoundations of strategy, suggesting that researchers are looking at individual factors to explain phenomena at a more micro level.

2

We only included the skills/competencies of CDOs that reflect the goals of the role.

More specific work needs to be done to identify a more general set of expected CDO skills in digital innovation.

3


Our model provides a partial understanding of the CDO's role regarding digital innovation.

Therefore, our model did not explore other themes related to the skills of the CDO, such as digital culture, strategic use of IT, firm's dynamic capabilities during a digital transformation, etc.

4

As our objective was exclusively to develop a conceptual model, we chose not to test the model.

The model could be tested by operationalizing the CDO's skills/competencies through interviews with CDOs from various industries, for example, by adopting an approach based on semi-structured, exploratory interviews.

 We encourage future research to deepen understanding of the relationships between the CDO role, digital innovation, strategic agility and microfoundations, and to test and extend our model to clarify the impact of the CDO role on digital innovation and transformation.

References

- [1] C. Klos, P. Spieth, T. Clauss, and C. Klusmann, “Digital transformation of incumbent firms: A business model innovation perspective,” *IEEE Transactions on Engineering Management*, vol. 70, no. 6, pp. 2017-2033, 2023.
- [2] R. G. Fichman, B. L. Dos Santos, and Z. Zheng, “Digital innovation as a fundamental and powerful concept in the information systems curriculum,” *MIS Quarterly*, vol. 38, no. 2, pp. 329–A15, 2014.
- [3] S. Nambisan, K. Lyytinen, A. Majchrzak, and M. Song, “Digital innovation management,” *MIS Quarterly*, vol. 41, no. 1, pp. 223-238, 2017.
- [4] A. Braganza, Y. Awazu, and K. C. Desouza, “Sustaining innovation is challenge for incumbents,” *Research-Technology Management*, vol. 52, no. 4, pp. 46-56, 2009.
- [5] A. Skala, *Digital startups in transition economies. Challenges for management, entrepreneurship, and education*. Cham, Switzerland: Palgrave Macmillan/Springer Nature, 2019.
- [6] H. Zaheer, Y. Breyer, and J. Dumay, “Digital entrepreneurship: An interdisciplinary structured literature review and research agenda,” *Technological Forecasting and Social Change*, vol. 148, 119735, pp. 1-20, 2019.
- [7] M. Géméto, D. Chabaud, and I. Barth, “Excuber pour innover : une nouvelle voie pour les grandes entreprises ?” *Entreprendre & Innover*, vol. 46, no. 3, pp. 30-41, 2020.
- [8] M. Géméto and I. Barth, “L’excubation : vers une nouvelle gouvernance de l’innovation,” in *La gouvernance dans tous ses états*, M. Dufour et al., Eds. Paris: EMS Éditions, pp. 322-342, 2021.
- [9] F. Svahn, L. Mathiassen, and R. Lindgren, “Embracing digital innovation in incumbent firms: How Volvo Cars managed competing concerns,” *MIS Quarterly*, vol 41, no. 1, pp. 239-254, 2017.
- [10] A. Buchwald and F. Lorenz, “Who is in charge of digital transformation? The birth and rise of the Chief Digital Officer,” *Academy of Management Proceedings*, no. 1, 14317, pp. 1-33, 2020.
- [12] J. Taylor and J. Vithayathil, “Who delivers the bigger bang for the buck: CMO or CIO?” *The Journal of Strategic Information Systems*, vol. 27, no. 3, pp. 207-220, 2018.
- [13] I. Haffke, B. Kalgovas, and A. Benlian, “The role of the CIO and the CDO in an organization’s digital transformation,” *Proc. of the 37th International Conference on Information Systems (ICIS 2016)*, Dublin, Ireland, 2016, pp. 1-20.

References

- [14] A. Singh and T. Hess, "How Chief Digital Officers promote the digital transformation of their companies," *MIS Quarterly Executive*, vol 16, no. 1, pp. 1-17, 2017.
- [15] S. Tumbas, N. Berente, and J. Brocke, "Three types of CDOs and the reasons organizations adopt the role," *MIS Quarterly Executive*, vol. 16, no. 2, pp. 121-134, 2017.
- [16] S. Tumbas, N. Berente, and J. vom Brocke, "Digital innovation and institutional entrepreneurship: Chief Digital Officer perspectives of their emerging role," *Journal of Information Technology*, vol. 33, pp. 188-202, 2018.
- [17] S. Tahvanainen and E. Luoma, "Examining the competencies of the CDO," *Proc. of 24th Americas Conference on Information Systems (ACIS 2018)*, 2018, pp. 1-10.
- [18] J. A. Porfírio, T. Carrilho, J. A. Felício, and J. Jardim, "Leadership characteristics and digital transformation," *Journal of Business Research*, vol. 124, pp. 610-619, 2021.
- [19] Y. Doz and M. Kosonen, *Fast strategy: How strategic agility will help you stay ahead of the game*. Harlow, GB: Wharton School Publishing/Pearson Education, 2008.
- [20] Y. Doz, "Fostering strategic agility: How individual executives and human resource practices contribute," *Human Resource Management Review*, vol. 30, pp. 1-14, 2020.
- [21] G. Vial, "Understanding digital transformation: A review and a research agenda," *The Journal of Strategic Information Systems*, vol. 28, no. 2, pp. 118-144, 2019.
- [22] S. Bresciani, A. Ferraris, M. Romano, and G. Santoro, "Agility for successful digital transformation," in *Digital transformation management for agile organizations: A compass to sail the digital world*, S. Bresciani et al., Eds. Emerald Publishing Limited, pp. 167-187, 2021.
- [23] P. Abell, T. Felin, and N. Foss, "Building micro-foundations for the routines, capabilities, and performance links," *Managerial and Decision Economics*, vol. 29, no. 6, pp. 489-502, 2008.
- [24] T. Felin and N. Foss, "Strategic organization: A field in search of micro-foundations," *Strategic Organization*, vol. 3, no. 4, pp. 441-455, 2005.
- [25] R. Adner and C. E. Helfat, "Corporate effects and dynamic managerial capabilities," *Strategic Management Journal*, vol. 24, no. 10, pp. 1011-1025, 2003.

References

- [26] C. E. Helfat and M. A. Peteraf, "Managerial cognitive capabilities and the microfoundations of dynamic capabilities," *Strategic Management Journal*, vol. 36, no. 6, pp. 831-850, 2015.
- [27] H. W. Chesbrough, *Open innovation. The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press, 2003.
- [28] W. R. Carter and G. A. Jackson, "Clockspeed, competition, and cooperation: incumbent motives and the market for ideas," *Journal of Small Business & Entrepreneurship*, vol. 32, no. 3, pp. 241-264, 2020.
- [29] E. Ries, *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. New York, NY: Crown Business, 2011.
- [30] J. Berbel-Vera, M. B. Palanca, and M. B. Gonzalez-Sanchez, "Key CDO functions for successful digital transformation: Insights from a Delphi study," *Technological Forecasting and Social Change*, vol. 181, pp. 1-16, 2022.
- [31] S. Firk, A. Hanelt, J. Oehmichen, and M. Wolff, "CDOs: An analysis of the presence of a centralized digital transformation role," *Journal of Management Studies*, vol. 58, no. 7, pp. 1800-1831, 2021.
- [32] S. Kunisch, M. Menz, and R. Langan, "CDOs: an exploratory analysis of their emergence, nature, and determinants," *Long Range Planning*, vol. 55, pp. 1-18, 2022.
- [33] D. J. Teece, "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance," *Strategic Management Journal*, vol. 28, no. 13, pp. 1319-1350, 2007.
- [34] N. Foss, "Microfoundations in strategy: Content, current status and future prospects," in *Strategic management: State of the field and its future*, M. Duhaime et al., Eds. Oxford University Press, pp. 559-577, 2021.
- [35] P. P. Tallon, M. Queiroz, T. Coltman, and R. Sharma, "Information technology and the search for organizational agility: A systematic review with future research possibilities," *The Journal of Strategic Information Systems*, vol. 28, no. 2, pp. 218-237, 2019.
- [36] C. Crick and E. K Chew, "Microfoundations of organizational agility: a socio-technical perspective," *Communications of the Association for Information Systems*, vol. 46, paper 12, pp. 273-295, 2020.