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Vers une extension de la théorie fondée sur les ressources : l'intelligence artificielle au service de l'incubation d'entreprises et de l'orchestration des écosystèmes entrepreneuriaux

Toward an Extension of the Resource-Based Theory: Artificial Intelligence in the Service of Business Incubation and the Orchestration of Entrepreneurial Ecosystems

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Résumé

L'intégration croissante de l'intelligence artificielle (IA) au sein des écosystèmes entrepreneuriaux a entraîné une reconfiguration profonde des processus d'innovation et des mécanismes de création de valeur. Les incubateurs, autrefois perçus comme de simples structures d'accompagnement, ont évolué vers des plateformes intelligentes capables d'orchestrer de manière intégrée et synergique les ressources humaines, sociales, technologiques et financières. S'appuyant sur la théorie fondée sur les ressources (Resource-Based View – RBV), cet article développe un cadre conceptuel dans lequel l'IA est appréhendée comme une méta-capacité renforçant l'orchestration des ressources, l'innovation ouverte et les dynamiques de coopétition au sein des écosystèmes d'incubation. L'IA est en outre théorisée comme une capacité dynamique favorisant l'apprentissage continu, la scalabilité et la performance collective. L'analyse aborde également les principaux enjeux éthiques liés à l'adoption de l'IA, notamment les biais algorithmiques, la protection des données et l'inclusion numérique. L'article conclut que l'IA étend fondamentalement la RBV en permettant une orchestration collective et dynamique des ressources, transformant ainsi les incubateurs en catalyseurs intelligents d'écosystèmes entrepreneuriaux durables.

Mots clés : Intelligence artificielle, incubation d'entreprises, théorie fondée sur les ressources (Resource-Based View), coopétition, innovation ouverte, orchestration des ressources, écosystèmes entrepreneuriaux.

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Abstract

The growing integration of artificial intelligence (AI) into entrepreneurial ecosystems has led to a profound reconfiguration of innovation processes and value creation mechanisms. Incubators, once perceived as simple support structures, have evolved into intelligent platforms capable of orchestrating human, social, technological, and financial resources in an integrated and synergistic manner. Drawing on the Resource-Based View (RBV), this article develops a conceptual framework in which AI is conceptualized as a meta-capability that enhances resource orchestration, open innovation, and coopetition dynamics within incubation ecosystems. AI is further theorized as a dynamic capability that supports continuous learning, scalability, and collective performance. The analysis also addresses key ethical challenges related to AI adoption, including algorithmic bias, data protection, and digital inclusion. The article concludes that AI fundamentally extends the RBV by enabling collective and dynamic resource orchestration, thereby transforming incubators into intelligent catalysts of sustainable entrepreneurial ecosystems.

Keywords : Artificial intelligence, business incubation, Resource-Based View, co-opetition, open innovation, resource orchestration, entrepreneurial ecosystems.

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Introduction

Innovative entrepreneurship is a driver of economic growth, and incubators play a decisive role in supporting start-ups and promoting collective value creation (Bergek & Norrman, 2008). Their mission has evolved: they now orchestrate resources within dynamic ecosystems where performance is based on cooperation and collective learning (Stam, 2015).

At the same time, digital technologies and artificial intelligence (AI) are transforming management and innovation methods (Nambisan, 2017). AI appears to be a dynamic capability (Chalmers et al., 2021) that paves the way for 'intelligent' incubators, optimising interactions between different actors (Thottoli et al., 2023).

However, the literature based on the Resource-Based View (RBV) (Barney, 1991) remains focused on the individual firm and neglects collective orchestration dynamics (Sirmon et al., 2011; Dyer & Singh, 1998). Furthermore, while the potential of AI in innovation is recognised (Cockburn et al., 2018), few studies have explored how it transforms governance and value creation within incubators (EAST, 2024). A central question arises: how can AI serve as a meta-capacity for orchestrating resources to enhance the collective performance and scalability of incubators?

To answer this question, this article proposes a conceptual model of AI-augmented incubation. It combines RBV, resource orchestration theory (Sirmon et al., 2011), open innovation logic (Chesbrough, 2003) and coopetition dynamics (Bengtsson & Kock, 2000). The aim is to extend RBV by integrating AI as a technological meta-capability that promotes coordination and collective value creation (Teece, 2018), while proposing a managerial framework for more effective incubators.

1. Conceptual Framework

1.1. The Resource-Based View (RBV): Foundations and Limitations

The Resource-Based View (RBV) explains organisational performance through the ownership and exploitation of VRIN resources (Barney, 1991; Wernerfelt, 1984). It provides a relevant framework for understanding how young companies exploit their limited resources (Alvarez & Busenitz, 2001). However, its focus on individual firms overlooks collective and inter-organisational dynamics (Lavie, 2006; Dyer & Singh, 1998). Zakoth, Mauroner and Emes (2023) (Zakoth, Mauroner and Emes, 2023) show that the combination of technological, cognitive, financial and social resources stimulates innovation. These spaces help to move beyond the individualistic vision of the RBV by placing it within a logic of open innovation, thus aligning with the 'relational view' (Dyer & Singh, 1998) and giving incubators a central role as orchestrators of resources in interconnected ecosystems.

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1.2. Incubation as a Resource Orchestrator

Incubators, much more than simple infrastructure providers, act as genuine resource orchestration platforms (Bergek & Norrman, 2008; Sirmon et al., 2011). They mobilise four types of capital: human, social, financial and technological to support and accompany start-ups (Mian, 2016; Bruneel et al., 2012). According to the IJAES (2023), they promote collaboration and the dissemination of innovation, a finding reinforced in makerspaces by (Zakoth, Mauroner and Emes, 2023), where the pooling of resources helps to reduce barriers to innovation. The study (EAST, 2024) highlights the mediating role of incubators in coordinating resources, connecting start-ups, mentors, investors and technology partners with a view to stimulating competitiveness and innovation performance.

1.3. Open Innovation and Entrepreneurial Ecosystems

Open innovation (Chesbrough, 2003) directs the incubation process towards co-creation and knowledge sharing between entrepreneurs, institutions and partners. As true ecosystem interfaces (Audretsch, Belitski, Eichler & Schwarz, 2024), incubators facilitate the flow of resources and encourage collaboration between public and private actors. The integration of digital technologies (Lee, Kim & Park, 2023; Audretsch & Link, 2023) strengthens the connectivity and performance of innovation networks. Inbound, outbound and coupled openness strategies, according to (Zakoth, Mauro-ner and Emes, 2023), promote the co-production of knowledge, supported by the logic of free and selective revealing (Henkel, Schöberl & Alexy, 2014). Finally, the study (EAST, 2024) confirms that cooperation between incubators, universities and companies improves absorption capacity and innovation performance (Isenberg, 2010; Stam, 2015).

1.4. Coopetition in Incubation Environments

Coopetition is defined by Bengtsson and Kock (2000) as the coexistence of cooperation and competition, and is clearly evident in incubators where start-ups pool resources while remaining competitors (Bouncken & Kraus, 2013). This dual approach simultaneously promotes collective learning and individual differentiation, governed by incubators acting as facilitators (Ritala, 2012). The EAST study (2024) notes that these interactions between start-ups, institutions and large companies consolidate collective innovation capacity while maintaining competitiveness. Inserted into the RBV–Orchestration–Open Innovation model, coopetition gives incubation a dynamic balance between collective value and individual performance (Zakoth et al., 2023; EAST, 2024).

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1.5. The Catalytic Role of Artificial Intelligence in Innovative Incubation

Artificial intelligence (AI) represents a strategic resource and a meta-capability that stimulates orchestration and adaptation in entrepreneurial ecosystems (Teece, 2018). In incubators, it promotes better management of human and social capital through resource mapping, predictive analysis and intelligent matching (Sirmon et al., 2011). AI thus converts incubation into 'smart incubation' (Thottoli et al., 2023) and enhances collective learning (Cockburn, Henderson & Stern, 2018). By promoting co-creation and inter-organisational transparency (Nambisan, 2017; Ritala, 2012), it supports the scalability of innovations (Chalmers, MacKenzie & Carter, 2021) and structures 'AI-driven ecosystems' (Li & Zhao, 2025). Finally, it extends RBV to collaborative contexts where value is co-constructed (Day, Jean-Denis & Karanja, 2025).

2. Theoretical Model and Research Proposals

The AI-augmented incubation model is based on four interdependent dimensions: resource orchestration (Sirmon et al., 2011), open innovation (Chesbrough, 2003), regulated coopetition (Bengtsson & Kock, 2000; Ritala, 2012) and the technological meta-capacity of AI (Teece, 2018; Day et al., 2025). This model is designed as an intelligent orchestration system integrating human, social, technological and financial capital, where the incubator relies on AI as a dynamic capability capable of amplifying the coordination, customisation and scalability of incubation services, while supporting organisational learning and adaptation (Chalmers, MacKenzie & Carter, 2021). With this in mind, we formulate the following theoretical propositions:

P 1: AI optimises the orchestration of human capital through the personalisation of support pathways and adaptive e-learning (Nambisan, 2017);

P 2: AI strengthens social and collaborative capital by facilitating intelligent networking between ecosystem actors (Lebovitz et al., 2022);

P 3: AI regulates coopetition by identifying interdependencies and complementarities between start-ups, contributing to equitable governance (Ritala, 2012);

P 4: AI supports the scalability and collective performance of incubators by promoting resource sharing and shared value creation (Day et al., 2025).

In light of these proposals, our conceptual model of AI-augmented incubation can be presented as follows:

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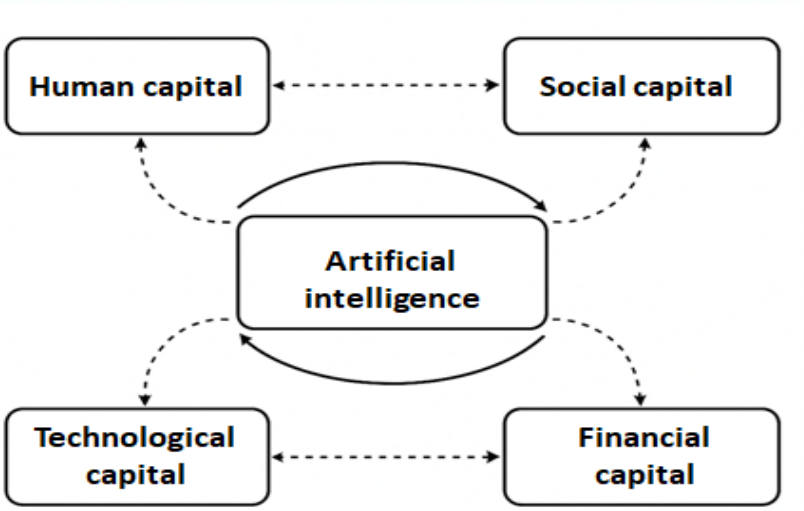
Figure 1 : Conceptual model of incubation enhanced by artificial intelligence.



Source : By authors

3. Conceptual Model: Artificial Intelligence as a Catalyst for Resource Orchestration

The theoretical framework developed conceptualises artificial intelligence (AI) as a central organisational meta-capability in the entrepreneurial incubation process, ensuring the integration and coordination of four capital dimensions: human, social, technological and financial capital. AI operates as a systemic orchestration mechanism, facilitating inter-resource synergies and asset scalability. The enrichment of human capital leads to improved interpersonal relationships and strengthens collective legitimacy. Conversely, dense social capital promotes inter-organisational cooperation and attracts talent. AI amplifies these mechanisms by enabling continuous assessment of performance and interaction patterns. Machine learning algorithms identify correlations between participation, progress and results, enabling iterative adjustment of support strategies in line with the dynamic capabilities paradigm (Teece et al., 1997). AI has a cross-cutting influence: skills development catalyses trust (social capital), networks stimulate knowledge transfer (technological capital), and innovations attract financial resources, which are reinvested in skills development. This cumulative process generates a multiplier effect where each form of capital feeds into the other dimensions. As an informational catalyst, AI enables the modelling of these interdependencies and guides managerial decisions. Unlike the static approach of the Resource-Based View, it acts as a dynamic orchestrator supporting organisational learning and the dissemination of innovation (Teece, 2018). AI transforms the incubation model into an interactive, knowledge-based system, where value is co-produced by interconnected actors.

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4. Methodological and epistemological positioning

This research adopts a conceptual and theory-building approach, grounded in a deductive reasoning process. The study is positioned within an interpretivist epistemological perspective, seeking to understand how artificial intelligence reshapes resource orchestration and value creation within entrepreneurial incubation ecosystems. Rather than testing empirical hypotheses, the article integrates and extends established theoretical frameworks (including the Resource-Based View, resource orchestration theory, open innovation, and coopetition) by conceptualizing AI as a technological meta-capability. This approach is particularly suited to emerging research domains, where theoretical consolidation precedes large-scale empirical validation.

5. Ethical considerations in the use of artificial intelligence for incubation

The incorporation of AI offers substantial potential but raises major ethical issues related to big data and automated algorithms. Incubators must reconcile technological advancement with social responsibility, ensuring transparency, fairness and the preservation of institutional trust (Chalmers et al., 2021; Raisch & Fomina, 2024). Algorithmic biases, resulting from unrepresentative historical data, risk perpetuating inequalities in project selection or funding allocation (Gigerenzer, 2022). The development of explainable artificial intelligence is imperative to ensure entrepreneurial equity (Raisch & Fomina, 2024).

The management of sensitive data requires a 'privacy by design' approach, incorporating anonymisation, informed consent and secure access, transcending GDPR compliance (Chalmers et al., 2021). Heterogeneity in levels of digital maturity can lead to the marginalisation of entrepreneurs from less technologically advanced backgrounds (Davidsson et al., 2020). Incubators must promote accessible tools and digital skills training programmes (Dimov et al., 2023).

Establishing ethical governance is imperative: multidisciplinary ethics committees, regular algorithmic audits and 'responsible AI incubation' certifications are essential mechanisms for aligning technological innovation with values of distributive justice.

6. Theoretical Contributions

This research enriches the RBV by adapting it to digital environments, transcending the static logic centred on resource scarcity (Barney, 1991). AI is conceptualised as an organisational meta-resource, amplifying human, social, technological and financial capital. This reconceptualisation brings RBV closer to the relational perspective (Dyer and Singh, 1998) and entrepreneurial ecosystem approaches (Stam, 2015). This research redefines incubation as a mechanism for intelligent orchestration. Incubators become complex socio-technical systems

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coordinating interactions through AI, regulating coopetition dynamics and optimising collective performance (Bergek & Norrman, 2008; Isenberg, 2010). AI is theorised as an entrepreneurial meta-capability, integrating sensing, seizing and reconfiguring (Teece, 2018), facilitating proactive opportunity detection, continuous learning and agile resource reallocation.

7. Managerial Implications

The integration of AI is bringing about a paradigm shift characterised by personalised services, interconnectivity between stakeholders and responsive processes. Managers must view AI as a strategic lever enabling administrative automation, individualisation of trajectories and predictive identification of high-potential projects (Nambisan, 2017). AI is a vehicle for collaborative orchestration, facilitating information dissemination and multi-stakeholder coordination, repositioning incubators as intelligent intermediation platforms. Public policy development must accompany digital transformation, promote ethical training and guarantee equitable access (Raisch & Fomina, 2024). Public-private partnerships around 'AI and inclusive entrepreneurship' laboratories appear promising for reconciling technological innovation, social inclusion and collective performance.

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Conclusion

This research suggests a model of increased incubation through artificial intelligence (AI), linking the Resource-Based View (RBV), resource orchestration and dynamic capabilities. AI is considered a cross-cutting meta-capability linking human, social, technological and financial capital, stimulating coordination, cooperation and resource scalability to create collective value (Teece, 2018; Chalmers, MacKenzie & Carter, 2021). This model renews RBV by focusing on orchestration rather than simply possessing scarce resources (Barney, 1991; Lavie, 2006), and brings together the perspective of entrepreneurial ecosystems and the relational vision (Dyer & Singh, 1998; Stam, 2015). Incubators are repositioned as architects of intelligent ecosystems, where performance emerges from connectivity, mutual learning and co-creation (Nambisan, 2017; Audretsch & Belitski, 2017). From a managerial perspective, this study encourages a rethinking of governance and support strategies around responsible and inclusive AI, promoting equity, transparency and sustainable innovation (Raisch & Fomina, 2024; Day, Jean-Denis & Karanja, 2025). In summary, AI, when used strategically, transforms incubators into catalysts for open innovation, entrepre-neurial legitimacy and collective performance.

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