The Medici effect: multidisciplinary insights for entrepreneurship research

In the 15th century, the Medici family in Italy sponsored artists, philosophers, scientists and financiers from various fields (Hibbard, 1974). The most prominent role of the Medici family was to gather people together to share intellect from each discipline (Padgett and Ansell, 1993). Eventually, people in this network led the historical period of innovation known as the Renaissance. Those included Leonardo da Vinci, Michelangelo, Galileo Galilei, Raffaello Sanzio, Donatello and Sandro Botticelli. "The Medici effect" represents a practical illustration of promoting innovation through collaboration across different knowledge domains and the sharing of diverse perspectives and experiences (Johansson, 2004). The Medici effect suggests innovation flourishes when ideas and concepts from diverse disciplines, fields and cultures intersect (Johansson, 2017).

The importance of sharing different perspectives and promoting interdisciplinary thinking was certainly not an invention of the Medici family. We find evidence of its effectiveness long before the Medici emerged and long after their influence faded through the centuries. We can travel around two thousand years to the past and observe the Romans combining civil engineering, hydraulics, materials science and geography to develop the aqueduct system. This crucial and value-creating invention has continued its progress as these domains develop and new domains appear. More recently, we can see how the smartphone relied on technological developments from diverse fields such as telecommunications, computer science, materials science, geospatial technology, electronics engineering and consumer behavior to produce one of the most influential products of the 21st century.

We can certainly bring the Medici effect to a closer scholarly application. If we turn our attention to social science research, some of our established theoretical frameworks reflect successful combinations of different fields of knowledge. For example, agency theory has strong foundational roots in economics, relying on concepts such as information asymmetry, incentive alignment or utility maximization (Fama and Jensen, 1983; Jensen and Meckling, 1976). We have seen its application in finance as we understand relationships between shareholders and managers in public firms (Eisenhardt, 1989); in corporate governance as we study dynamics in the boardroom, the design of contracts and monitoring mechanisms (Dalton *et al.*, 1998) or in psychology as we study human motivations, cognitive biases and deviations from profit-maximizing behavior (Bazerman and Moore, 2012).

Nevertheless, how does our field of entrepreneurship stand on this front? Have we been successful in replicating the Medici effect? The answer to this question may show mixed results. On the one hand, we have seen the application of established frameworks such as resource-based view, social networks, human capital or institutional theory to entrepreneurship settings (Lee *et al.*, 2023). Some influential frameworks, arguably more specific to

New England Journal of Entrepreneurship
Vol. 27 No. 1, 2024
pp. 2-8
Emerald Publishing Limited
2574-8904
DOI 10.1108/NEJE-07-2024-104

entrepreneurship, such as effectuation theory, also combine psychological and strategic management insights to study the identification and pursuit of entrepreneurial opportunities (Sarasvathy, 2001). On the other hand, we might need a more active pursuit of the Medici effect to further reinforce the contributions and innovations of entrepreneurship research. This editorial aims to explore exciting research opportunities and encourage entrepreneurship scholars to contribute to the *New England Journal of Entrepreneurship*. Although our list may not be exhaustive, it is worth noting that emerging topics and events can greatly benefit from the multidisciplinary approach exemplified by the Medici family.

Strategic leadership in entrepreneurship

The Medici effect underscores the value of interdisciplinary thinking and the convergence of diverse ideas and concepts. Strategic decisions mainly focus on achieving competitive advantage in large corporations, whereas entrepreneurship is about identifying opportunities for new products and services to create and grow new ventures. However, entrepreneurship and strategic management are concerned with general managers' actions intended to create wealth, improve firm performance and sustain growth (Ireland *et al.*, 2001). Strategic leadership literature can offer entrepreneurs a nuanced understanding of decision-making processes, organizational culture fostering innovation and adaptability in dynamic markets. Studies on strategic leadership within entrepreneurial teams may provide a deeper understanding of how distinct leadership styles, personalities and mental models impact the success and sustainability of entrepreneurial ventures. Similarly, insights from innovation studies can enrich entrepreneurship scholarship by providing frameworks for evaluating entrepreneurial opportunities and mechanisms to scale innovations sustainably. Scholars could also explore empirical evidence to discern the concrete role of creativity and novel thinking in fostering entrepreneurial success.

Beyond conventional disciplinary boundaries

Entrepreneurship scholars could delve into theories in traditional business literature. Behavioral economics theories could offer deeper insights into entrepreneurial decision-making under uncertainty. Social network theories could illuminate how entrepreneurs combine resources, leverage interpersonal relationships and form strategic partnerships for opportunity identification and exploitation. Organizational learning can help firms and entrepreneurs continuously develop innovations and establish new ventures or business operations to generate competitive advantages, allowing firms' competencies to remain dynamic, react and adapt to environmental contingencies. Research on the demand side relative to the producer side in strategic management would benefit the technology innovation and entrepreneurship literature by integrating the demand-side approach and the resource-based view, emphasizing the independent value determinations of heterogeneous consumers (Priem *et al.*, 2012). According to Ireland *et al.* (2023), strategic entrepreneurship integrates strategy and entrepreneurship and recommends future research about ambidexterity, including the appropriate actions to develop the capability and capacity to balance opportunity- and advantage-seeking behaviors as well as the role of strategic entrepreneurship in new venture creation, its integration with other theoretical perspectives, such as those concerned with the external environment and examining it as a dynamic capability. These integrations may help foster a richer understanding of entrepreneurial phenomena and can help develop innovative solutions to contemporary entrepreneurial challenges.

New technologies and emerging industries

In the spirit of the Medici effect, another research area meriting our focus is the concept of platform ecosystems (Adner, 2017). This is particularly relevant as it offers a comprehensive

framework to understand the environments fostering entrepreneurial ventures. Platform ecosystems facilitate the integration of various technological and market elements and provide a rich context for examining how entrepreneurial activities are shaped and evolve. For example, the open-source software ecosystem essentially serves as a knowledge commons, which provides numerous open-source software modules that enable entrepreneurs to create new applications and well-designed digital platforms that allow entrepreneurs to build their business ventures on top. This interplay between technological resources and entrepreneurial innovation within platform ecosystems highlights the potential for transformative business models and novel market solutions. It emphasizes the importance of understanding and leveraging these ecosystems for entrepreneurs seeking to navigate and excel in today's rapidly evolving digital landscape.

Another emerging topic is the democratization of information access through digitization and how that affects entrepreneurial activities. Digitization has enabled rapid access to arguably similar information globally, which has been powered by the internet and the adoption of smartphones. At the same time, this process also enlarged the disparity between those who know how to possess and manage the information and those who do not create new business opportunities. This evolving landscape poses critical questions for future entrepreneurship research and practice.

Technological advancements and societal shifts also present fertile ground for innovative studies and applications, encouraging interdisciplinary collaborations. The global landscape is continuously evolving, marked by the advent of groundbreaking technologies such as generative artificial intelligence (AI) and quantum computing. These innovations are not just transforming existing businesses but are also paving the way for novel entrepreneurial ventures. This period of transformation, coupled with the challenges outlined in the United Nations Sustainable Development Goals, calls for entrepreneurial ingenuity to devise solutions both at local and global scales. Institutional theory explains how and why particular practices, behaviors and actions persist and how this stability challenges the legitimacy of new ventures, their products and services and their likelihood to prosper (DiMaggio and Powell, 1983). This ongoing tension offers many possibilities for exciting research projects to emerge. We challenge researchers to become more attuned to the rapid pace and scale of environmental, economic and political changes and use these shifts to identify interesting puzzles to address.

New product development

A broader trend of cross-disciplinary influence in modern entrepreneurial practices is new product development. A rising topic in new product development is the agile product development process, which first emerged in the computer software industry (Sarangee *et al.*, 2022). Originally, agile product development referred to the process of continuous, iterative software improvement through close collaboration with customers. The agile process is more flexible than the familiar phased or "stage-gate" process and seeks customer input throughout the process. Its application is no longer limited to software development. Many manufacturing firms have adopted a form of agile product development or an agile-stage-gate hybrid. For example, Corning and LEGO Education have adopted an agile-stage-gate hybrid, especially for radical or uncertain new product projects (Cooper, 2013; Cooper and Anita, 2016). One way to apply the agile process is to present early physical products to small groups of customers and determine the minimum viable product (MVP), which has just enough features to meet the needs of these early customers. Feedback from these customers is used to assess the product's market viability and to make continuous iterative improvements. Entrepreneurs developing any kind of new products or services could use the agile process to gain the voice of the customer and ensure that the product is being developed in accordance with the customer's requirements.

Interestingly, and related to our previous points about emerging technologies, new product developers are now using AI and machine learning extensively throughout the new product process. Companies can use AI to identify user preferences, leading to unexpected new product ideation. For example, Starbucks discovered that almost half of iced tea drinkers do not add sugar, leading to new unsweetened iced tea blends (Artificial Intelligence +, 2023). AI can also analyze social media posts, which might lead to a newly identified opportunity. Increased consumer interest in immunity, as shown in social media posts, led PepsiCo to launch a new version of Propel fitness water with immunity-boosting properties (Revell, 2023). Fashion companies may use AI to predict trends and assist in developing new designs based on these trends (Piller *et al.*, 2023). Additionally, food technology companies can use AI to identify ingredients that might otherwise never have been thought of. Using AI, NotCo (a plant-based food product company) discovered that cabbage and pineapple could be used as ingredients for plant-based milk (Starostinetskaya, 2023). And the emergence of generative AI (the creation of new outputs by AI) needs no further introduction. Entrepreneurs will increasingly have access to AI tools to help them identify promising product ideas and further develop concepts.

Innovation in family business

The field of entrepreneurship is familiar with theory borrowing, and the family business field is no different. The most famous "homegrown" theory of the family firm, socio-emotional wealth (Gomez-Mejia *et al.*, 2011), has its origins in behavioral agency (Wiseman and Gomez-Mejia, 1998). The idea of socio-emotional wealth is interesting because it pertains first to goals that are nonfinancial and affective in nature and second to the implications that generating a stock of this wealth has for subsequent behavior (e.g. activating risk aversion to its loss but risk-seeking when lost) (Hu *et al.*, 2023). This has notable implications when we think of innovation and entrepreneurship, which are normally associated with risk-bearing activities that must accept some uncertainty in investments made and a nontrivial possibility of financial loss (Hu and Hughes, 2020). However, the family firm is often willing to tolerate financial loss if it means preserving socio-emotional wealth (Gomez-Mejia *et al.*, 2010). This raises a plethora of questions for entrepreneurship research. For instance, what if entrepreneurs have goals that diverge profit maximization and the preservation of outcomes associated with those goals has decision-making primacy? If the loss of perceived affective wealth matters to an entrepreneur's decision-making, what we might see is different types and degrees of entrepreneurship and innovation behavior, as we see with family firms (Hu *et al.*, 2023). These insights suggest that differences, we see in the spectrum of imitative opportunities to creatively destructive opportunities or incremental to radical innovation might be explained by the primacy of socio-affective goals over financial ones acting as reference points to their willingness to take risks (a key consideration in the behavioral agency model).

A second feature of family firms' innovation behavior of interest to entrepreneurship scholars is the phenomenon of tradition. Despite appearing to be risk-averse and conservative, research finds that family firms can particularly benefit from rich legacy assets and resources that can fuel "innovation through tradition" (De Massis *et al.*, 2016). Heritage and legacy hold strategic importance, allowing the family business to develop narrative-based advantages that cannot be easily duplicated (Ge *et al.*, 2022). Tradition, while associated with ideas such as inertia and the continued transmission of customs, practices, or conventions from generation to generation, can be especially powerful when associated with heritage and legacies that allow family firm entrepreneurs to infuse tradition into product or brand innovations, for example. Thus, what might appear to be rather conservative behavior is more reflective of a different mode of innovation strategy or entrepreneurship (Scholes *et al.*, 2021), raising questions about our assumptions of what it

means for different economic agents to engage in these activities. In turn, the implications of tradition, heritage and legacy for the form and conduct of entrepreneurial processes are intriguing. To echo Miller *et al.* (2016), scholars of entrepreneurship still have much to learn from sound family businesses.

Conclusion

Since the 15th century, the Medici effect has suggested that innovation flourishes when ideas and concepts from diverse fields intersect (Johansson, 2017). According to this effect, collaboration and sharing perspectives and experiences are essential to generate creative and successful innovation endeavors. We brought this assertion to academics of the 21st century and suggested that the importance of collaboration and interactions of scholarly discussion within and outside the boundaries of the entrepreneurship field can help generate fruitful knowledge and spark further scholarly discussion. We hope to encourage readers to embrace this Medici effect, leverage multidisciplinary approaches to address novel and impactful research questions and share their insights as future contributors to the *New England Journal of Entrepreneurship*.

Younggeun Lee
California State University, Los Angeles, USA

Andres Felipe Cortes
Sacred Heart University, USA

Anthony Di Benedetto
Temple University, USA

Pol Herrmann
Iowa State University, USA

Mathew Hughes
University of Leicester, UK

Phillip H. Kim
Babson College, USA

Haemin Dennis Park
University of Texas at Dallas, USA, and

Sai Lan
Emlyon Business School, France

References

Adner, R. (2017), "Ecosystem as structure: an actionable construct for strategy", *Journal of Management*, Vol. 43 No. 1, pp. 39-58.

Artificial Intelligence + (2023), "AI & data-driven Starbucks – deep brew", available at: https://www.aiplusinfo.com/blog/ai-data-driven-starbucks-deep-brew (accessed 25 January 2024).

Bazerman, M.H. and Moore, D.A. (2012), *Judgment in Managerial Decision Making*, Wiley.

Cooper, R.G. (2013), "New products: what separates the winners from the losers?", in Kahn, K.B. (Ed.), *The PDMA Handbook of New Product Development*, Wiley, pp. 25-33.

Cooper, R.G. and Anita, F.S. (2016), "The agile-stage-gate hybrid model: a promising new approach and a new research opportunity", *Journal of Product Innovation Management*, Vol. 33 No. 5, pp. 513-526.

Dalton, D.R., Daily, C.M., Ellstrand, A.E. and Johnson, J.L. (1998), "Meta-analytic reviews of board composition, leadership structure, and financial performance", *Strategic Management Journal*, Vol. 19 No. 3, pp. 269-290.

De Massis, A., Frattini, F., Kotlar, J., Petruzzelli, A.M. and Wright, M. (2016), "Innovation through tradition: lessons from innovative family businesses and directions for future research", *Academy of Management Perspectives*, Vol. 30 No. 1, pp. 93-116.

DiMaggio, P.J. and Powell, W.W. (1983), "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields", *American Sociological Review*, Vol. 48 No. 2, pp. 147-160.

Eisenhardt, K.M. (1989), "Agency theory: an assessment and review", *Academy of Management Review*, Vol. 14 No. 1, pp. 57-74.

Fama, E.F. and Jensen, M.C. (1983), "Separation of ownership and control", *The Journal of Law And Economics*, Vol. 26 No. 2, pp. 301-325.

Ge, B., De Massis, A. and Kotlar, J. (2022), "Mining the past: history scripting strategies and competitive advantage in a family business", *Entrepreneurship Theory and Practice*, Vol. 46 No. 1, pp. 223-251.

Gomez-Mejia, L.R., Cruz, C., Berrone, P. and De Castro, J. (2011), "The bind that ties: socioemotional wealth preservation in family firms", *Academy of Management Annals*, Vol. 5 No. 1, pp. 653-707.

Gomez-Mejia, L.R., Makri, M. and Kintana, M.L. (2010), "Diversification decisions in family-controlled firms", *Journal of Management Studies*, Vol. 47 No. 2, pp. 223-252.

Hibbard, H. (1974), *Michelangelo*, Harper & Row.

Hu, Q. and Hughes, M. (2020), "Radical innovation in family firms: a systematic analysis and research agenda", *International Journal of Entrepreneurial Behavior and Research*, Vol. 26 No. 6, pp. 1199-1234.

Hu, Q., Hughes, M. and Hughes, P. (2023), "Family owners' fear of losing socio-emotional wealth: implications for firm innovativeness", *Long Range Planning*, Vol. 56 No. 5, 102263.

Ireland, D.R., Hitt, M.A., Camp, M.S. and Sexton, D.L. (2001), "Integrating entrepreneurship and strategic management actions to create firm wealth", *Academy of Management Perspectives*, Vol. 15 No. 1, pp. 49-63.

Ireland, R.D., Withers, M.C., Harrison, J.S., Boss, D.S. and Scoresby, R. (2023), "Strategic entrepreneurship: a review and research agenda", *Entrepreneurship Theory and Practice*, Vol. 47 No. 2, pp. 495-523.

Jensen, M. and Meckling, W.H. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3 No. 4, pp. 305-360.

Johansson, F. (2004), *The Medici Effect: Breakthrough Insights at the Intersection of Ideas, Concepts, and Cultures*, Harvard Business Review Press.

Johansson, F. (2017), *The Medici Effect, with a New Preface and Discussion Guide: What Elephants and Epidemics Can Teach Us About Innovation*, Harvard Business Review Press.

Lee, Y., Kumar, S., Cortes, A.F., Sureka, R. and Lim, W.M. (2023), "Twenty-five years of *New England Journal of Entrepreneurship*: a bibliometric review", *New England Journal of Entrepreneurship*, Vol. 26 No. 1, pp. 2-19.

Miller, D., Steier, L. and Le Breton–Miller, I. (2016), "What can scholars of entrepreneurship learn from sound family businesses?", *Entrepreneurship Theory and Practice*, Vol. 40 No. 3, pp. 445-455.

Padgett, J.F. and Ansell, C.K. (1993), "Robust action and the rise of the Medici, 1400-1434", *American Journal of Sociology*, Vol. 98 No. 6, pp. 1259-1319.

Piller, F.T., Sebastian, G.B. and Vera, B. (2023), "Hybrid intelligence for innovation: augmenting NPD teams with artificial intelligence and machine learning", in Bstieler, L. and Noble, C.H. (Eds), *The PDMA Handbook of Innovation and New Product Development*, Wiley, pp. 407-424.

Priem, R.L., Li, S. and Carr, J.C. (2012), "Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research", *Journal of Management*, Vol. 38 No. 1, pp. 346-374.

Revell, E. (2023), "Pepsi using AI to track consumer demand, speed up product development", available at: https://www.foxbusiness.com/markets/pepsi-using-ai-track-consumer-demand-speed-up-product-development (accessed 25 January 2024).

Sarangee, K., Schmidt, J.B., Srinath, P.B. and Wallace, A. (2022), "Agile transformation in dynamic, high-technology markets: drivers, inhibitors, and execution", *Industrial Marketing Management*, Vol. 102, pp. 24-34.

Sarasvathy, S.D. (2001), "Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency", *Academy of Management Review*, Vol. 26 No. 2, pp. 243-263.

Scholes, L., Hughes, M., Wright, M., De Massis, A. and Kotlar, J. (2021), "Family management and family guardianship: governance effects on family firm innovation strategy", *Journal of Family Business Strategy*, Vol. 12 No. 4, 100389.

Starostinetskaya, A. (2023), "How Chilean unicorn NotCo uses AI to help food giants from Starbucks to Dunkin' go vegan", available at: https://vegnews.com/2023/2/chilean-unicorn-notco-ai-starbucks-dunkin-vegan (accessed 25 January 2024).

Wiseman, R.M. and Gomez-Mejia, L.R. (1998), "A behavioral agency model of managerial risk taking", *Academy of Management Review*, Vol. 23 No. 1, pp. 133-153.