



Exploring the microfoundations of nomadic dynamic capabilities: The example of flying winemakers

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ABSTRACT

Using the illustration of flying winemakers, this conceptual paper looks at international entrepreneurship and the microfoundations of dynamic capabilities to explore how nomad entrepreneurs manage dynamic capabilities in global contexts. We first identify the key features of nomad entrepreneurs and their relationship with their environment to conceptualize nomadic dynamic capabilities. We then analyze the specific role of knowledge transfer in managing nomadic dynamic capabilities and put forward a stylized model of the microfoundations of nomadic dynamic capabilities. We contribute to the international entrepreneurship and global dynamic capabilities literature by investigating the role of nomad entrepreneurs as connectors both across and beyond borders for globalized industries. We also contribute to the microfoundations of the dynamic capabilities stream of literature by emphasizing the sources of nomadic dynamic capabilities and their role in a micro-level driven research agenda in terms of the concrete actions of nomad entrepreneurs to elucidate higher-level phenomena.

1. Introduction

The questions of dynamic capabilities, globalized environment and entrepreneurship have rarely been studied as a trilemma (Teece, 2014). Global entrepreneurship is significantly expanding, seizing on opportunities from today's VUCA environments. The present study highlights the relevance of the microfoundation approach in knowledge-intensive settings to examine entrepreneurs' ability to identify multi-localized opportunities, relying on dispersed resources and competencies, and on their evolving individual dynamic capabilities (Mazzucchelli et al., 2019).

Past research has examined the role of entrepreneurs as connectors and actors in global contexts through concepts of international entrepreneurship, viewed as the "combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations" (McDougall and Oviatt, 2000), and entrepreneurial capabilities, which involve "the ability to identify a new opportunity and develop the resource base needed to pursue the opportunity" (Arthurs and Busenitz, 2006). Global entrepreneurs "sense, shape, and exploit opportunities" (Teece, 2014), leveraging and orchestrating their capabilities on a global scale (Pitelis and Teece, 2010).

Because dynamic capabilities are usually tacit, hard to imitate, and embedded in unique sets of relationships and histories, they are difficult to transfer across borders (Teece, 2014). To address this issue, our paper sheds light on the process underlying such entrepreneurial dynamic capabilities on the global scene, building on the nomadic entrepreneurship stream of literature (Marchesnay, 2011; Torrès, 2004). Nomad entrepreneurs are spatial opportunity seekers (Bruinsma et al., 1998). They act outside the parameters of global entrepreneurs because they think across and beyond borders (Isenberg, 2008). Consequently, successful global entrepreneurs need to combine entrepreneurial and nomadic capabilities. In addition, these entrepreneurs reflect potential micro explanations of heterogeneous macro outcomes (Felin et al., 2015). Microfoundations are the psychological and cognitive foundations of individuals that enable firms to develop the dynamic capabilities that drive strategic renewal and corporate entrepreneurship (Corbett and Neck, 2010). One micro-level-based evidence concerns the convergence between globalization and successful knowledge transfer (Bender and Fish, 2000). Successful global ventures develop highly innovative, knowledge-intensive products and services that are characterized by tacitness, complexity and specificity (Weerawardena et al., 2007). The role of knowledge-sharing and technology transfer in

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profitable global internationalization has been explicitly identified as a key determinant (Weerawardena et al., 2007) of organizational performance.

Recent calls to further investigate the microfoundations of capabilities have highlighted their critical role in organizational performance (Scuotto et al., 2020; Schneckenberg et al., 2015). Technology and knowledge-sharing are key microfoundations of dynamic capabilities for global entrepreneurs (Isenberg 2008). Moreover, despite the fact that entrepreneurial processes are increasingly flexible, versatile and global, the literature on the dynamic capabilities of global entrepreneurs is extremely limited, especially from the micro perspective (Mazzucchelli et al., 2019). Finally, as most exchanges are largely informal in the early stages of entrepreneurial processes (Batjargal et al., 2013), the challenges associated with knowledge-sharing and technology transfer in the case of nomad entrepreneurs remain to be explored.

To better elucidate the links between dynamic capabilities, the microfoundations of nomadic entrepreneurship and the role of knowledge in global contexts, the present paper aims to answer the following research question: how do nomad entrepreneurs manage global dynamic capabilities? More specifically, the study (1) identifies the key characteristics of nomad entrepreneurs based on their individual/intrinsic features as well as their relationship with their environment and (2) analyzes the specific role of knowledge transfer (knowledge dynamics) in managing nomadic dynamic capabilities.

In this conceptual paper, we offer some illustrative elements from the wine industry which is experiencing the globalization of know-how and wine-making practices through a growing internationalization of its activities (Aylward and Zanko, 2006). Wines are knowledge-intensive products and are embedded with high knowledge content informed by innovation and personal creativity, cutting-edge product design, technological know-how and in-depth understanding of markets (Weerawardena et al., 2007). In particular, as a new type of nomad entrepreneur, Flying Wine Makers (hereafter FWM) play a key role in knowledge creation and dissemination in the globalized context of the wine sector. FWM are external consultants hired to help firms manage the constant innovation in production processes (Giuliani, 2007), helping firms to be more dynamic. As “knowledge workers”, FWM have revolutionized winemaking in the value segment (Smith, 2013), creating and disseminating knowledge worldwide (Barthélemy, 2017). As individuals in organizations, FWM serve as microfoundations of dynamic capabilities (Felin et al., 2012).

The paper makes the following contributions. First, nomadic entrepreneurship bridges the gap between the microfoundations of dynamic capabilities, entrepreneurship and globalization. We then introduce the concept of nomadic dynamic capabilities and explore its key characteristics. Finally, we present a stylized model of the microfoundations of nomadic dynamic capabilities, depicting the role of knowledge transfer in managing dynamic capabilities in globalized industries and international entrepreneurship contexts, with the wine industry used as an illustrative setting.

The article is structured as follows: we first present the context of FWM as nomad entrepreneurs managing dynamic capabilities in a globalized wine industry. Then, based on the case of FWM as connectors between wineries worldwide and orchestrators of capabilities in their relocation decisions, we explore the microfoundations of dynamic capabilities and nomadic entrepreneurship. Next, we analyze the knowledge dynamics of these nomad entrepreneurs to understand how nomadic dynamic capabilities are managed at global level. Finally, we conclude with the implications and new avenues for research.

2. Context: FWM – nomad entrepreneurs managing dynamic capabilities in a globalized industry

In Europe, the wine industry is characterized by locally rooted traditions developed from generation to generation. Knowledge transmission and the know-how developed were underpinned by religious,

social, cultural, colonialist and geographic dynamics. Knowledge transmission was centered on the old world (Europe) and was unidirectional – from the old world to the new world (South America, United States, South Africa, Australia and New Zealand) (see Fig. 1). It took the new world less than a century to identify the best “terroirs”, developing specific knowledge, skills and practices after absorbing a millennium of knowledge from the old continent (Deroudille, 2003). By the late 19th century, new world wines were firmly established. As they gradually lost their share of the market, old world producers decided to obtain access to innovative and cost-effective methods by importing them from new world producers (Aylward, 2005).

To better understand how nomad entrepreneurs contribute to building dynamic capabilities in a global context, we used the example of FWM who relocate from winery to winery across the globe.

The combination of the transport industry and individual-based (vs. organizational-based) dissemination of practices on a global scale have contributed to the emergence of a new activity: flying winemaking. Over two-thirds of wineries appoint consultants to improve the quality of their wines (Barthélemy, 2017). FWM act as wine doctors to fix serious problems and as wine expanders to manage long-term vineyard and wine development projects (Legendijk, 2004).

FWM provide wineries with knowledge-intensive services (Doloreux and Turkina, 2017). They offer “state-of-the-art knowledge and experience in grape cultivation, fermenting, processing, and blending, based on the most recent technological developments, combined with practical knowledge of marketing strategies and trends” (Legendijk, 2004, p. 522). Flying wine-making encompasses several wine-related activities. Oenologists, viticulturists and wine growers can develop business opportunities on several continents and become consultants in wineries worldwide. FWM are “expert oenologists travelling around the world to advise local winemakers” (Legendijk, 2004, p. 522). “Jetting from one harvest to the next” (Brostrom and Brostrom, 2008, p. 100), they manage the entire wine-making process, from grape growing to the bottling and marketing of the finished products (Doloreux and Turkina, 2017).

The expression ‘Flying winemaker’ was initially coined by Tony Laithwaite, who used many southern hemisphere winemakers (i.e., from Australia and New Zealand) to work on European cellars in the 1980s (Robinson and Harding, 2015). Historically, many FWM came from Australia. Experts in modern winemaking techniques, they took advantage of the 6-month gap between the harvests in Australia and the northern hemisphere, making it possible to cover the harvest period in the northern hemisphere and to share their expertise and know-how during the off-season in Australia. A new generation of FWM has now grown up using these imported practices, enhancing their international practice and ensuring stricter quality control. Their initial success led more winemakers from both the northern and southern hemispheres to venture outside their comfort zone (Janssen, 2015).

Nowadays, winemakers from France, Italy, the USA and other countries are part of the FWM family (Brostrom and Brostrom, 2008). FWM offer their services as experts and consultants around the globe (Anderson et al., 2001). They combine old world and new world methods to work on their own wineries while overseeing others, thereby gaining international recognition (Aylward, 2005). Indeed, FWM have contributed to the shift from a generation-to-generation knowledge-sharing model within the *terroirs* of the old world to a multi-localized and multi-directional model.

To better elucidate the micro-level evidence of technological innovation and social change in a globalized wine setting, data was gathered from the world’s top 15 FWM listed by *The Drinks Business* (2013) and the *Dico du*, 2018 (see Appendix 1). More than 80 webpages concerning these FWM were analyzed.

Flying winemakers offer a good basis for exploring the microfoundations of nomadic dynamic capabilities. First, the wine industry is global by nature, featuring separation between production and consumption locations, and cross-border issues involving tariffs and taxes since the Roman Empire. Second, the wine industry is a traditional

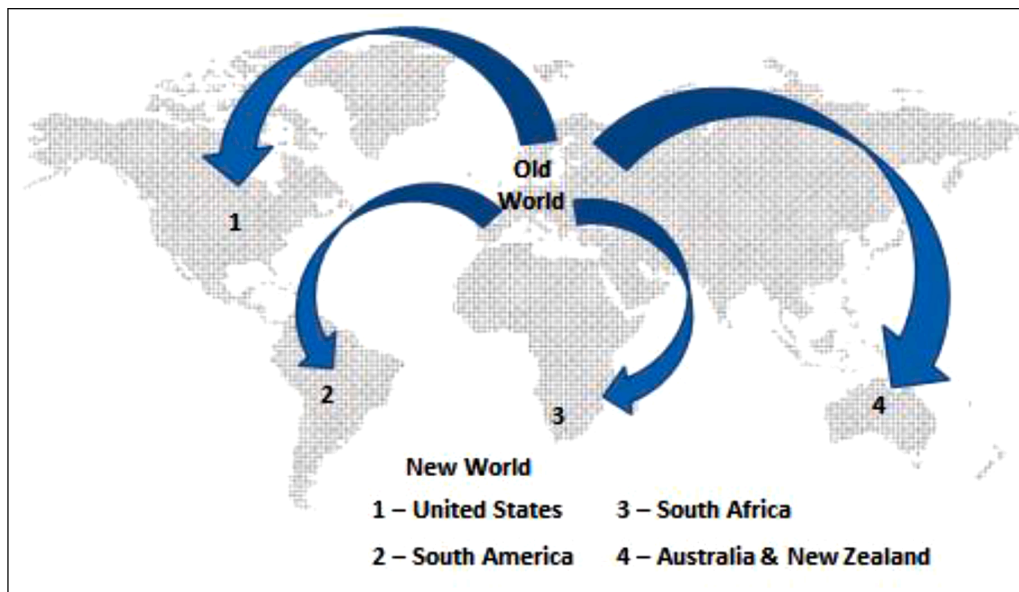


Fig. 1. Traditional dissemination model of practices from the Old World to the New World.
Source: The Authors

industry that has undergone major changes in the last 30 years at both local and global level (new players, globalization, new demand) (Castellano and Khelladi, 2016). Third, entrepreneurial initiatives have shaped the wine industry over the centuries, with entrepreneurs closely involved in developing wine-related activities (i.e., Castellano and Khelladi, 2017). Fourth, the wine industry is knowledge-intensive, which can create barriers to knowledge transfer and knowledge-sharing at global level. Overall, flying winemakers are nomad entrepreneurs who integrate, build and reconfigure internal and external competencies to address the drastic changes that the wine industry has witnessed globally, as we explain below.

3. From nomad entrepreneurs to nomadic dynamic capabilities

The nomadic approach complements the previous discussion. Entrepreneurs can adopt nomadic behaviors due to globalization as well as environmental complexity and uncertainty. A nomad entrepreneur is someone whose economic activity has no geographical tie to his/her place of origin (Watson, 2010). In a globalized world, the nomadic behavior of firms (Bruinsma et al., 1998) and dynamic capabilities (Torres, 2004) reflect a major trend. A nomadic approach can help inform the advantages of localization in different environments. Through their nomadic dimension, entrepreneurs live and work within diverse networks, communities and 'tribes' (Marchesnay, 2002). A nomadic approach can reveal the benefits of the global scene for entrepreneurial growth, which we address hereafter through the lens of nomadic entrepreneurship.

Global entrepreneurs create, define, discover and exploit entrepreneurial opportunities on a global scale (Zahra et al., 2006). Relocation is a concept used to explain the internationalization of firms' activities. It is often a complex decision, initiated or influenced by a range of factors such as looking for greater opportunities in new environments (Lin-enluecke et al., 2011). Over time, nomad entrepreneurs become connectors as they develop the capacity to relocate from place to place (Marchesnay, 2011).

Unlike a local entrepreneur who is embedded in the community, nomad entrepreneurs search for oases of economic opportunity (Dahl and Sorenson, 2009). They are spatial opportunity seekers (Bruinsma et al., 1998) who use distance to generate new products or services and gain a competitive edge while tapping resources or serving customers worldwide (Isenberg, 2008).

Drawing on what Bruinsma et al. (1998) identified as the key attributes of firms' nomadic behavior, entrepreneurs can be considered nomadic when they view (re)location as temporary, with (re)located activities being footloose rather than embedded in the local or regional economy, and yet still part of an international network that produces for a global market. Hence, nomad entrepreneurs mirror traditional embedded entrepreneurs whose choice of location is heavily based on home and family proximity (Dahl and Sorenson, 2009). As they are global by nature, nomad entrepreneurs also display significant competencies, such as the ability to articulate a global purpose, to build alliances, networks and partnerships and to shape global value chains (Isenberg, 2008). They consider the world as their oyster, aiming to be multi-localized to take advantage of multiple environments to develop their dynamic capabilities (Torres, 2004).

When analyzing FWM, we can identify several elements that constitute nomadic dynamic capabilities at individual level (see Appendix 2). In particular, business experience, region of origin, proximity with wine critics, and reputation and influence in the wine business are important individual characteristics. In addition, market-based factors include strategic choices, customer portfolio and country coverage. Finally, processes include the type of wine developed, the level of transfer of wine practices, and the level of influence of wine features.

Based on the above-mentioned elements, and following Evangelista (2005), we view nomadic entrepreneurship as consisting of 3 major elements: founder (FWM), environment (market), and processes (see Table 1). Considering their respective roles as nomadic entrepreneurs, we thus identified four profiles of FWM – gatekeepers, interpreters, pollinizers, and explorers. These four profiles show that the dissemination of practices is no longer unidirectional from the old world to the new. Moreover, FWM take home-grown characteristics (local) into account in the dynamics of ownership and knowledge transfer (global). Finally, FWM are not constrained by the prevailing traditional or historical practices of each specific territory.

Based on the above-mentioned characteristics, we define nomadic dynamic capabilities as the entrepreneurs' ability to identify multi-localized opportunities while relying on multi-localized resources and competencies, as well as on their evolving individual dynamic capabilities (see Fig. 2). Hence, we consider that nomadic dynamic capabilities are:

Table 1
FWM profiles and sources of nomadic entrepreneurship.

Elements	Feature	Gatekeepers	Interpreters	Pollinizers	Explorers
Flying Winemaker	Years of experience in winemaking	40	30	20	10
	FWM Names	Michel Rolland	Paul Hobbs, Stéphane Dorenencourt, Alberto Antonini & Eric Boissenot	Kym Milne & Sam Harrop	Eddie McDougall
	Region of origin	Old world		New world	
	Proximity with wine critics	Strong		Weak	
	Reputation & influence of the FWM	Experts famous across the globe Most influential winemakers	“Discreet school” Globally distinguished winemaker	Build their reputation worldwide	“Urban winemaker” Strong personal branding Rapidly gained reputation abroad
Market	Strategic choice	Push		Pull	
	Customer portfolio & country coverage	Heavy/broad	Quite important (some decide to limit their list of clients)	Small	Very small
Process	Type of wine developed	Terroir-driven wines Attract global attention to specific ‘terroirs’	Terroir-driven wines	Style-driven wines Modern winemaking practices	
	Level of transfer of wine practices	Strong	Moderate	Low	
	Level of influence of wine features	Strong		Low	Strong (develop wines for niche markets & millennial wine drinkers)

Table 2
Profiles of FWMs and characteristics of nomadic dynamic capabilities.

Profiles	Gatekeepers	Interpreters	Pollinizers	Explorers
Background (as a source of knowledge and technology)	Family-based Traditional		University and laboratory-based Modernist	
Orientation of nomadic dynamic capabilities	Heritage - Transmitted from generation to generation Home-country oriented	Host-country oriented	Technical training Host-country oriented	Born global
Direction of acquired & developed nomadic dynamic capabilities	From home country to host country	n/a	n/a	From host country to home country
Nomadic dynamic capabilities developed (to influence the global wine market)	Capacity to develop highly ranked wines acclaimed by famous critics (e.g., Robert M. Parker, Jr.). Capacity to market successful wines known as ‘competition wines’	Capacity to develop wines acclaimed by wine critics Capacity to develop technical skills and develop innovation and know-how	Capacity to combine winemaking expertise with market trends, allowing them to produce successful wines	Capacity to better position the wine by developing a brand and an image Capacity to diversify their activities (winemaker, wine judge, wine critic, columnist and TV personality, etc.).
Driver of nomadic dynamic capabilities (as a source of relocation strategy)	Influence the location strategies of firms The name of a famous international winemaker proves more rewarding than the <i>terroir</i> , grape content or producer’s plantation FWM become a PR tool FWM transfer their reputation to the wines they develop & the vineyards they supervise	Benefit from multi-localized (or glocalized) opportunities reflected in wine characteristics from different vineyards and wineries	Move away from traditional established practices to better address new wine market expectations and tastes	Create a portfolio of experience and expertise Create a global network Bring back internalized practices and latest technologies related to winemaking when establishing their own activities in their region of origin Nomadism is first based on external capabilities; then practices and know-how are internalized, which facilitates their dissemination worldwide
Role as nomad entrepreneurs	Have the ability to better gather and disseminate knowledge	Create knowledge and processes allowing them to develop their wines	Use, increase and contrast their knowledge in different contexts, taking advantage of the dynamics of exchange	Identify unorthodox and unique methods in ways that have never been used before

- *Entrepreneurial*. Such capabilities enable the entrepreneurs to sense, shape and exploit new opportunities on a global scale (Teece, 2014), while developing the resources needed to pursue these opportunities (Arthurs and Busenitz, 2006).
- *Global*. Such capabilities are globally consistent and locally specific, adapting, integrating and reconfiguring internal and external resources to address global market opportunities (Griffith and Harvey, 2001) and internationalization processes (Karra et al., 2008).
- *Spatiotemporal*. Such capabilities are multi-localized (Torrès, 2004) and are deployed across and beyond borders (Isenberg, 2008). They rely on the continuous evolution of individual dynamic capabilities

and on the use of multiple localization strategies (Castellano et al., 2015).

However, existing studies that explain the accelerated internationalization of nomad entrepreneurs do not capture the way dynamic capabilities are developed on a global scale (Weerawardena et al., 2007). The micro-foundational approach shows that the ability to create and/or sense opportunities is clearly not uniformly distributed among individuals or enterprises (Teece, 2007) and that individual skills, knowledge and capabilities might be important sources of performance (Ardito et al., 2019). In particular, this paper focuses on the entrepreneur’s ability to leverage nomadic opportunities on a global scale.

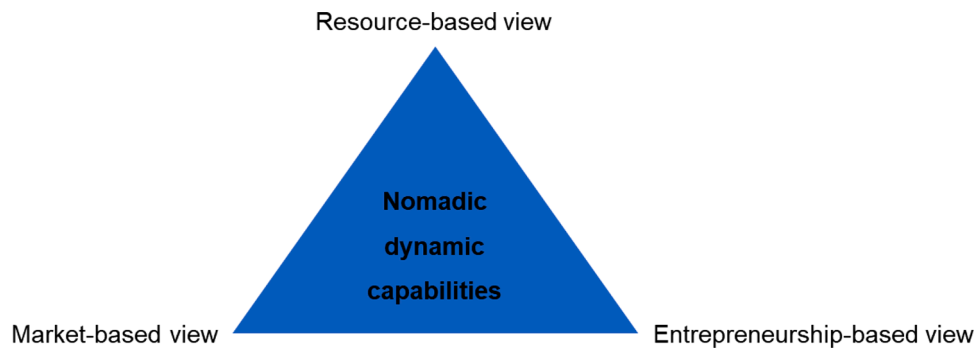


Fig. 2. The nomadic dynamic capabilities triangle.
Source: The Authors

4. Exploring the microfoundations of dynamic capabilities and nomadic entrepreneurship

Past research has analyzed the outcomes of dynamic capabilities such as competitive advantage and improved effectiveness (Zahra et al., 2006), while other studies have stressed the interwoven dynamics between the micro-level (individual) and the macro-level of dynamic capabilities (Altintas, 2009). According to Newbert (2005), the dynamic capability of a new firm's formation is "*a process executed at the individual level*." As such, global entrepreneurial capabilities can be viewed as microfoundations of dynamic capabilities. Identifying opportunities and sensing changes globally are key managerial and organizational processes that support the deployment of individual dynamic capabilities (Woldesenbet et al., 2012).

Rapid changes in the globalization of the marketplace have accelerated the need for organizations to coordinate work across geographical and temporal boundaries (Lipnack and Stamps, 1997). Opportunity creation and/or discovery by individuals requires both access to information and the ability to recognize, sense and shape developments, involving specific knowledge (Teece, 2007). For instance, individual entrepreneurs form novel alliances that contribute to the effectiveness of transfer technology and knowledge sharing. From the micro-level perspective, dynamic capabilities allow entrepreneurs to identify new areas in terms of products, services and/or market development by learning from each other's knowledge, expertise, technology and network and market channels (Chesbrough and Schwartz, 2007). Nomad entrepreneurs, as identified by Marchesnay (2014), are heavily dependent on innovation, knowledge-sharing and work flexibility, as the global exchange of know-how is based on openness.

Individual-level characteristics determine individuals' heterogeneity. This heterogeneity thus relies on skills and capabilities that may directly influence nomad entrepreneurs' relocation strategies. Idiosyncratic individual differences exist, highlighting the need to analyze the microfoundations of dynamic capabilities (Scuotto et al., 2020) among successful FWM. Table 2 presents such characteristics for each of the 4 FWM profiles. Overall, the initial resources and competencies of FWM before going abroad (background), the orientation of nomadic dynamic capabilities, and the anchor points of dynamic capabilities (dynamic capabilities to influence the global wine market, and drivers of relocation strategy) play an important role in their nomadic behavior (see Appendix 2).

First, gatekeepers and interpreters base their initial resources and competencies on traditions, while pollinizers and explorers are more likely to follow a modernism-based model. Second, gatekeepers are domestically focused, while interpreters and pollinizers base their nomadism on the host country, and explorers are considered as 'born global'. Third, when it comes to nomadic dynamic capabilities developed over time and across places, gatekeepers and interpreters rely on wines acclaimed by wine critics, while pollinizers and explorers prefer a market-based approach (market trends, brand strategy). Consequently,

each profile adopts different drivers of nomadic dynamic capabilities as a source of relocation strategy. The location strategy of gatekeepers is based on the extent to which their home-based reputation can be transferred across places. Interpreters tend to benefit from the multi-localized opportunities reflected in the wines developed in different wineries. Pollinizers relocate to better address market expectations and tastes, while Explorers follow a network approach in their relocation strategy. Finally, the four profiles of FWM differ in terms of their role as nomad entrepreneurs. Gatekeepers are good at efficiently disseminating knowledge, Interpreters create knowledge to design their wines, Pollinizers enhance and contrast their knowledge in different contexts, while Explorers mainly identify unique methods.

Because it is 'global', the dynamic capability perspective of the nomad entrepreneur focuses on fast adaptation and flexibility across multiple environments. This approach explains the new nature and essence of nomadic entrepreneurship in globalized and knowledge-intensive activities (Pitelis and Teece, 2010). FWM become orchestrators. Orchestration opportunities increase in line with the FWM's dynamic capabilities (Sirmon et al., 2011) and their nomadism. FWMs are also opportunity seekers. As nomad entrepreneurs, they seek to stay informed of relocation opportunities and market needs worldwide (Teece, 2014) to create additional value that can be developed on a global scale. Their aim is to have a positive impact on the wine industry in terms of quality and spreading best practices. Hence, they reorganize the quality wine market from geographical and conventional standpoints (Lagendijk, 2004). Wineries can benefit from FWM as connectors and gain access to specific know-how and practices. Wine specialists and FWM can benefit by developing their skills in many ways, including wine growing and wine making practices in the different wine regions around the world.

As previously stated, nomadic dynamic capabilities are global, entrepreneurial and spatiotemporal. Building on Schneckenberg et al. (2015), below we analyze the role of FWMs, the type of knowledge transferred, the sources of knowledge and the underlying processes behind the transfer of knowledge.

4. Nomad entrepreneurs and knowledge dynamics on a global level

The dynamic capability framework is particularly relevant to globalized knowledge-based industries (Pitelis and Teece, 2010). Relocation decisions foster the capacity for both potential knowledge acquisition and assimilation, as well as realized knowledge transformation and exploitation (Zahra and George, 2002). To compete in VUCA business environments, entrepreneurs need to tap into external sources of knowledge (Ferraris et al., 2017). However, from a micro perspective, entrepreneurs differ in their approach to global environments and the way they exploit external knowledge (Ardito et al., 2019). Diversity is a preliminary condition for innovation since a broad range of skills and knowledge fosters the introduction of novel ideas and solutions,

differing perspectives and access to the diversity of cognitive resources (Scuotto et al., 2020). In knowledge transfer and collaborative knowledge sharing, individuals from different educational and professional backgrounds and/or different disciplines create various benefits (Schneckenberg et al., 2015), helping individuals to realize many different types of projects by exploring various ideas and eliminating knowledge barriers during social and informational exchanges.

We analyze how FWM, as nomad entrepreneurs, develop the capacity to relocate from place to place and how they act as connectors to transfer tacit knowledge across borders in global contexts.

4.1. Role of FWM with respect to knowledge in the global wine industry

First, FWMs act as knowledge suppliers (Pezzillo et al., 2014), providing technical and market knowledge (Doloreux and Turkina, 2017) and acting as knowledge dissemination facilitators (Aylward, 2005) by offering advice about the latest technologies, quality measures, maceration and oak practices (Aylward and Zanko, 2006). FWM help wineries to acquire, assimilate, transform and exploit new knowledge developed by other wineries (Doloreux and Turkina, 2017). Second, FWMs act as individual-based connectors in the global wine industry. They acquire and absorb practices and know-how in different parts of the world and extend them across firms, countries and hemispheres. They are diffusers of oenological innovation internationally (Aylward and Zanko, 2006), activating and developing innovation within wine firms (Doloreux and Turkina, 2017). Third, FWMs act as interpreters. They provide information about wine features and production practices that can boost the wine's success (Corrado and Odorici, 2009). Finally, FWMs act as influencers. They are public relations experts, conferring their own reputation on wineries (Corrado and Odorici, 2009). FWM are also quality and marketing symbols, with considerable influence on innovation, especially marketing innovation (Doloreux and Turkina, 2017).

4.2. Type of knowledge transferred

FWM interact with wine growers and offer specific on-site knowledge, mainly through tacit knowledge transfer (Pezzillo et al., 2014). With their scientific knowledge of the wine-making process, FWM play a key role in the national and international transfer of tacit and codified knowledge (Giuliani and Bell, 2005). New technologies (i.e., water systems for irrigation, grape trellis systems) are now being transferred internationally at a faster rate than ever before.

4.3. Source of knowledge

Various tensions (internal vs external, local vs global) are widespread and serve as sources of knowledge that FWM use throughout their career. First, external resources from local wineries and internal resources from nomad entrepreneurs (Wu, 2007) are used as sources of knowledge. This interplay between the organization (winery) and the individual (FWM) who travels from country to country acts as a novel path for global knowledge transfer. FWM – as individual connectors – are employed along with external knowledge sources to improve innovation in the wine industry (Doloreux Turkina, 2017), benefitting all players in the globalized wine industry. Second, FWM draw together the local and the global. They are agents of interconnected 'locales' (Legendijk, 2004), reflecting the phenomenon of the "glocalization of wine" (Veseth, 2008). Some of the shared practices and know-how is global in nature and can apply to any type of vine and wine. However, another segment must adapt to local characteristics. Furthermore, the earliest flying wine making profiles had an inside-out strategy (transferring Australian practices beyond the country's borders). FWM have since adopted an outside-in approach, attracting the world's attention to a particular location. Nomad entrepreneurs also take advantage of the globalized market. As Fernando Ravera – an Argentinean oenologist

who spent three months in Napa Valley in the United States – explains: "It was an incredible experience to mingle with South Africans, Italians and French in a Californian wine cellar. I saw winemaking methods rarely used in Argentina [...]. It was certainly a very rewarding experience" (Wine Republic, 2007). Overall, FWM boost the global exchange of know-how and traditions that have long existed in the wine industry (Veseth, 2008).

4.4. Knowledge transfer dynamics

FWM are at "the center of interactive learning systems within which they create, transfer and apply new knowledge" (Doloreux and Turkina, 2017, p. 1528). They link wine-making regions not only to each other and to knowledge centers but also to their competition (Legendijk, 2004). FWM manage whole operations conveyed from one country to another to overhaul a winemaking region. Such operations are usually one-directional, from the new to the old world (Aylward and Zanko, 2006). Knowledge and technology flows take place through in-demand winemakers hired as consultants or supervisors for specific producers during the vintage process (Aylward and Zanko, 2006). Such knowledge transfer occurs over time and across places and is cumulative.

5. A nomadic dynamic capabilities model

First, dynamic capabilities can be sequenced over time and across different geographic markets (Teece, 2014). Regarding the time dimension, nomad entrepreneurs have developed core resources related to wine-growing and wine-making activities over a specific timespan (human capital and know-how). Additionally, the resources provided by each local winery that FWM work with over time also fit into the time dimension (Wu, 2007). Regarding the space dimension, nomad entrepreneurs' networks (Wu, 2007), derived from relocation activities in geographically dispersed wine regions, display significant dynamic capabilities. Capability redeployment takes one of two forms: the sharing of capability between the old and the new, and/or the geographic transfer of capability (Teece, 2007). FWM are ubiquitous in nature (Aylward and Zanko, 2006). These nomad entrepreneurs fly from one wine region or vineyard to another one – just as bees fly from flower to flower in their role as pollinators – sometimes on different continents and/or during the off-season in their home region. FWM can consequently oversee 2 to 3 harvests (and vintages) annually (Wine Republic, 2007), extending the supervision of wine growing and winemaking to different countries. As such, FWMs connect wine-making places, knowledge centers and wine exhibitions and fairs (Legendijk, 2004), helping to reshape the dissemination of practices and knowledge transfer at global level.

Second, the transfer of knowledge is cumulative. FWM orchestrate their prior knowledge gained from previous relocation decisions with the knowledge of the local winery they are working with at any given moment (Santoro et al., 2017). The greater the nomad entrepreneurs' own dynamic capabilities, the greater the willingness of the local winery to collaborate with FWM (Wu, 2007). Prior international experience and learning capacity enables FWM to seek out and exploit international market opportunities (Weerawardena et al., 2007) and promulgate knowledge. Additionally, the more they fly, the more knowledge they disseminate. FWM extend knowledge (Rothaermel and Hess, 2007) on grape-growing and wine-making processes across various places (Pezzillo et al., 2014). Given that prior knowledge influences the absorptive capacity of firms to obtain new knowledge (Wu, 2007), dynamic capabilities represent a cumulative process as each relocation decision increases the FWM's knowledge (Weerawardena et al., 2007).

Based on the analysis of FWM that relocate from winery to winery the world over, we identified factors that help us to understand how nomad entrepreneurs build their nomadic dynamic capabilities. FWM (1) have connecting and orchestrating capabilities to (2) combine internal and external capabilities (3) that are developed across space and

time and (4) that are cumulatively disseminated based on prior experience (see Fig. 3).

Two trajectories lead from local-based capabilities to nomadism. Due to low prior knowledge, some nomad entrepreneurs (NE) like the ‘explorers’ first acquire external capabilities by relocating to different locations/firms (i.e., wineries) and then intensively developing internal capabilities over time (‘Path 1 NE’). This category of entrepreneurs builds on the space dimension (Bruinsma et al., 1998; Torrès, 2004) across the globe to acquire nomadic capabilities. The time dimension then helps them to develop these capabilities. Other nomad entrepreneurs such as the ‘gatekeepers’ develop strong home-based/local internal capabilities and then transfer these capabilities abroad where external locations/firms (i.e., wineries) can benefit from them and contribute to the nomad entrepreneurs’ knowledge (‘Path 2 NE’). These nomad entrepreneurs initially act as traditional embedded entrepreneurs (Dahl and Sorenson, 2009), building on the time dimension when acquiring their capabilities in their home-based location. They then develop their capabilities through a space dimension by moving abroad. Finally, the ‘interpreters’ and the ‘pollinizers’ create hybrid paths as drivers (internal vs. external) of nomadic dynamic capabilities. Overall, the paths adopted influence the speed, scope and extent of the nomad entrepreneurs’ internationalization (Karra et al., 2008).

6. Conclusion

The wine industry has undergone major changes, particularly in relation to the globalization process, leading to the emergence of a new type of actor. FWM are individuals who represent the microfoundations (Felin et al., 2012) of nomadic dynamic capabilities. These nomad entrepreneurs help to disseminate new practices and know-how inherent to the globalization of the wine industry. Nomadic dynamic capabilities are global (Griffith and Harvey, 2001), entrepreneurial (Arthurs and Busenitz, 2006; Teece, 2014) and spatiotemporal (Castellano et al., 2015; Isenberg, 2008; Torrès, 2004). Through an analysis of fifteen FWM, we unpacked the elements and characteristics (Evangelista, 2005) that inform the deployment of nomadic dynamic capabilities (FWM, market and process). We created a model of nomadic dynamic capabilities and presented two types of nomad entrepreneur, based on the underlying processes identified – the type of capabilities developed (internal vs external), the role of the nomad entrepreneur (orchestrating capabilities at local and global level), and the rate of dissemination of prior knowledge acquired in other locations/firms. We showed how dynamic capabilities have evolved over time and space in which the initial model was characterized by a unique center (the old world) that

created and disseminated knowledge. In a globalized world (the new world), the knowledge flow is facilitated by nomad entrepreneurs and is multi-directional. Such entrepreneurs are connectors whose role is to pollinate firms worldwide with their knowledge through cross-border nomadic dynamic capabilities.

Our research contributes to the literature in several ways. From a theoretical perspective, this paper is the first to use nomad entrepreneurs to bridge the gap between the microfoundations of dynamic capabilities, entrepreneurship and globalization. Nomadism (Torrès 2004; Marchesnay 2011) is a new trend that calls for further research in these streams of the literature. Nomadism explains individual and organizational processes such as knowledge transfer (Del Giudice and Maggioni 2014) and business performance (Scuotto et al., 2017). Nomad entrepreneurs play a key role in transferring knowledge and technologies in a knowledge-intensive industry and fostering innovative capabilities at global level (Schneckenberg et al., 2015). In particular, the article contributes to the international entrepreneurship and global dynamic capabilities literature. First, reflecting micro-level evidence of globalization, the nomad entrepreneur enriches past research that analyzed the role of individuals to explain the different steps in the internationalization process (i.e., born global). More specifically, globalized industries seek out nomad entrepreneurs who act as connectors across and beyond borders. As such, our model shows that the spatiotemporal dimension adds a global dynamic capability to a nomadic one. Second, we also contribute to the microfoundations of the dynamic capabilities stream of literature. Our paper shows the extent to which globalization has influenced the dissemination and transfer of practices, knowledge and know-how. For nomad entrepreneurs, the world is their playing field and knowledge acquisition, assimilation, transformation and exploitation shape their relocation strategies. Our model shows that two main sources of nomadic dynamic capabilities (internal vs. external drivers) contribute to the micro-level driven research agenda in terms of the concrete actions of nomad entrepreneurs to elucidate macro-level phenomena.

From a managerial perspective, nomad entrepreneurs engaging in globally collaborative networks are exposed to different and novel processes in various stages of the production cycle. One obvious benefit of nomadic dynamic capabilities through collaborative networks in knowledge-intensive industries is that social knowledge capital allows operational excellence, innovative production techniques, and creative marketing methods to be sustained through increased access to new knowledge, resources, markets and technologies (Guzman and Wilson, 2005). Similarly, the activities explored and exploited by firms are dependent on access to new information and resources that are

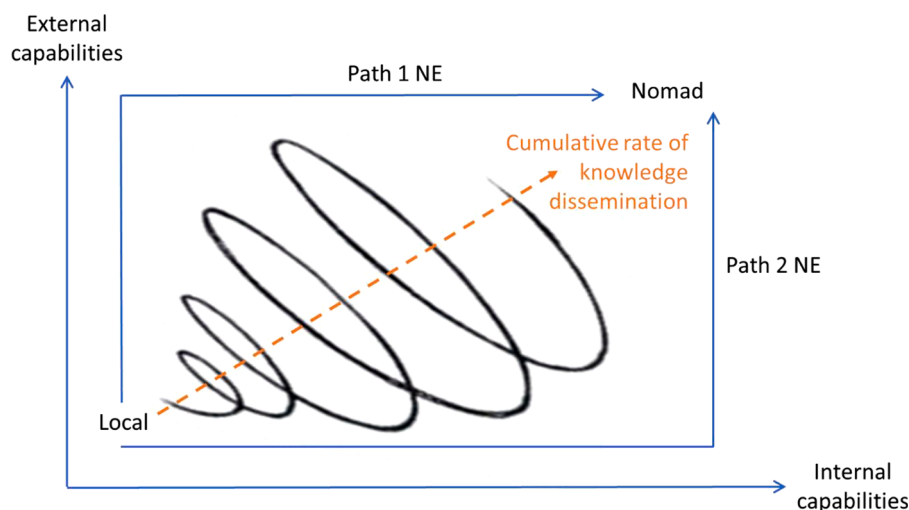


Fig. 3. A stylized model of the microfoundations of nomadic dynamic capabilities.
Source: The Authors

influenced by the dynamic capabilities of interorganizational alliances and interpersonal networks (Scuotto et al., 2020).

Our paper also provides empirical evidence that dynamic capabilities transform historically traditional industries into innovative and knowledge-based entrepreneurial industries. FWM activities are catalysts for firms' internal and external sources of innovation and expertise (Bender and Fish, 2000). They act as exploiters (capturing innovations) and explorers (generating new knowledge), fostering firms' entrepreneurial knowledge and innovation (Usai et al., 2018). The typology provided explains how the interplay between capturing and creating new innovation works.

We thus advance understanding of dynamic capabilities in the wine industry (Doloreux and Turkina, 2017). The suggested model of nomadic dynamic capabilities can be further developed using comparative studies (knowledge-intensive; low vs. high tech, established vs. traditional industries, etc.) (Castellano et al., 2017; Vrontis et al., 2016). Future studies could analyze nomadic entrepreneurship in cultural and creative industries (Santoro et al., 2020; Manfredi-Latilla et al., 2018) such as DJs diffusing different styles of music worldwide, fashion

designers operating in several luxury houses who diffuse the next style, and craftsmen who shape tomorrow's designs through the use of heritage and innovation.

Finally, new research can empirically add to and validate the microfoundations of nomadic dynamic capabilities. Our paper raised the issue of knowledge and technology transfer in the wine context. Further interesting insights could be identified by examining innovative capabilities and reputation as well as institutional perspectives, complementing the knowledge-based approach adopted in this paper. The analysis of the microfoundations of ambidexterity (Dezi et al., 2019) and their role in developing dynamic capabilities in globalized contexts could offer an alternative and insightful stream of research.

CRediT authorship contribution statement

Sylvaine Castellano: Conceptualization, Writing - original draft. **Insaf Khelladi:** Writing - review & editing, Supervision. **Rossella Sorio:** Data curation, Formal analysis. **Mehmet Orhan:** Data curation, Formal analysis. **David Kalisz:** Resources, Visualization.

Appendix 1. Key features of the FWM studied

Name	Origin	Number of clients	Number of countries covered	Experience in winemaking (in years)
Almudena ALBERCA	Spain	2	3	15
Eric BOISSENOT	France	180	5	30
Michel ROLLAND	France	240	14	50
Paul HOBBS	USA	35	7	40
Stéphane DERENONCOURT	France	130	17	30
Alberto ANTONINI	Italy	30	8	40
Kym MILNE	Australia	10	5	38
Demei LI	China	5	2	20
Sam HARROP	New Zealand	3	4	20
Hubert DE BOUARD	France	80	7	40
Denis DUBOURDIEU	France	70	4	40
Eddie MCDUGALL	Australia	5	4	10
ONEOTEAM (Stéphane TOUTOUNDI / Thomas DUCLOS / Julien BELLE / Marie-Laure BADET-MURAT)	France	400	3	17
John WORONTSCHAK	Australia	80	25	35
Peter BRIGHT	Australia	na	na	30

Appendix 2. Analysis of FWM profiles

- Category 1: The too famous – traditionalist FWM.

These FWM are internationally famous experts and the most influential winemakers, flying around the world. One example is Michel Rolland. Originating from the Old World, the FWM tend to have more than 40 years of winemaking experience, with extensive client portfolios and country coverage. They are compared to “*star scientists*”, considered as more innovative and influential than the average player in their specific field. They produce terroir-inspired wines, attracting global attention to specific ‘terroirs’. As Michel Rolland pointed out: “*A consultant must have the following quality: adaptation [...]. Winemaking must always consider the place where wine grows and the concept of ‘terroir’ [...], the typicality is related to the soil and climate. The oenologist cannot shape it. At best, he can only exploit its potential, but he cannot completely change the characteristics of the grape in a given place*” (Terroir Experience, 2018). These FWM have a major impact on wine processes (i.e., propagating traditional wine practices and knowledge transfer), as Michel Rolland explained: “*There are no secrets to what I do (...): I make wine the way I made it 20 years ago, but always with small changes. Yes, there are still winemakers who say, ‘I make wine like my father and his father before him’, but you can be sure of this, those are the vineyards that are going downhill. The best way to negate quality is to ignore the technological developments and research findings of our time*” (cited in Legendijk, 2004:523). They also have a major impact on wine products (i.e., propagating their own organoleptic features of wine and their own wine flavors). Atkin (2015) said about Michel Rolland: “*He always liked ripe reds, made from late picked grapes, with smooth tannins and prominent oak. That’s not to say that he doesn’t have an interest in terroir – [...] the wines he likes to make (and drink) are a reflection of his personality. He’s a hedonist at heart: Mr Merlot, with a palate formed by the clay of Pomerol rather than the limestone of Saint Emilion.*” In such cases, the wine is said to be ‘Rolland-ized’ (foodwineclick, 2017). Such FWM influence the location strategies of firms and, as gatekeepers, are able to gather and disseminate knowledge better. They impact the wine market through their high-ranking wines acclaimed by famous critics (e.g., Robert M. Parker, Jr.). This was the case for Michel Rolland: “*In the 1990s, Rolland’s star rose in*

tandem with that of his good friend, Robert Parker. By and large, Bob likes the wines that Michel makes and, if his written pronouncements are a guide, shares many of the latter's views about wine quality and ripeness. Together, Parker and Rolland have dominated the fine wine scene in Bordeaux, California, Argentina and Chile (and places further afield) for the last two decades" (Atkin, 2015). Their proximity with wine critics makes their influence prescriptive as they push wine consumption while promoting their own quality standards and tastes. This allows them to make commercially successful wines (also called 'competition wines'). Displaying the name of a famous international winemaker adds more value than highlighting the terroir, grape content or producer plantation. According to wine specialists, these FWM have become experts in PR, transferring their reputation to the wines they develop and the vineyards they supervise. However, they tend to develop international wine styles as their experimentation and experience takes them worldwide. Such styles tend to suppress the distinctiveness of local wine qualities. "The Rolland style is as popular with winery owners, who regard his brand as a stamp of quality, as it is with a certain type of consumer" (Atkin, 2015).

- Category 2: The distinguished – traditionalist FWM.

These FWM are internationally distinguished winemakers, mainly originating from the old world. Paul Hobbs, Stéphane Dorenencourt, Eric Boissenot and Alberto Antonini belong to this category. They generally have over 30 years of winemaking experience and a relatively large client portfolio and country coverage, although some of them prefer to limit their list of clients (such as Paul Hobbs). Some have decided to relocate to benefit from multi-localized (or glocalized) opportunities reflected in wine characteristics from different vineyards and wineries. Stéphane Dorenencourt exemplifies this category: "He organizes his customers' wines by soil type, the basis of his approach" (foodwineclick, 2017). These FWM produce terroir-driven wines, although they do not strongly impact the wine processes, as Paul Hobbs points out: "The true character of a site is only revealed through the work and determination of tending each vineyard with meticulous care and vinifying with minimalist winemaking techniques that fully express the terroir." They do not propagate their own organoleptic features or their own wine tastes and preferences. Paul Hobbs explained: "I don't arrive at a site attempting to make a wine in a style driven by analytical parameters. If I were to look at a plant and see numbers, the dance that exists between us; between man and Nature, would fall apart. Winemaking as a dogmatic set of rules, driven by man-made, cultural zeitgeists, does not interest me. It would be a little like painting-by-numbers, or coloring within the lines of someone else's mechanical drawing" (<http://paulhobbs.com>). These FWM act more as interpreters by creating oenological processes to develop their wines, as Eric Boissenot explained: "I regard each vineyard as an individual unit with its own character and expression. One must respect this in every way – when dealing with the vines, the grapes or the wines. The global complexity of the raw material is directly linked to the quality of the 'terroir' (soils, micro-climate) and this explains the hierarchy of Bordeaux wines. As long as the blending is carefully managed to best express the terroir, whether the material is rich or less rich, the tasting will always be a pleasure" (<http://www.agence-fleurie.com/2012/09/focus-eric-boissenot>). Such FWM impact the wine market with their critically acclaimed wines through the technical and practical innovations and know-how they propagate that boost the wine's consumption. As Atkin (2015) said: "Antonini thinks that consumer tastes are shifting, but he wants to lead the market, rather than follow it." Alberto Antonini himself added: "It's up to me to explain to people why I'm doing what I'm doing. It's time we persuaded people to switch from Schwarzenegger to Michelangelo's David" (cited in Atkin, 2015). These FWM are neither creators of 'competition wines', nor propagators of their oenological signatures. They are FWM of the 'discreet school' (Chauvin, 2010). They are neither endorsed by wine producers nor associated with a specific type of wine product. As Stéphane Dorenencourt explained: "the goal is not to boost competition wines but to create wines that look and keep their character while progressing. These wines then gain in audience and logically flirt with the best scores among influential critics and aim for the best places in the reference guides. Without losing their soul, these good results are a precious help to a quality marketing." They are not hired to flaunt big names, but rather: "clients prize an ability to help create a blend that translates their terroir into something truly special" (The Drinkers Business, 2013).

- Category 3: The modernist FWM.

Most FWM in this category, such as Kym Milne and Sam Harrop, originate from the new world. They have over 20 years of winemaking experience and small client portfolios and country coverage. They typically received their technical training in universities and laboratories rather than through a family heritage or tradition transmitted from generation to generation, as is the case for many old-world wineries (i.e., France, Italy, Spain). These FWM propagate modern winemaking practices and produce style-driven wines. They moved away from traditional established practices to better address current wine market expectations and tastes. Flying wine making activities represent the opportunity to use, develop and extend their knowledge in different contexts, taking advantage of relocation dynamics (Suckling, 2006). As Kym Milne explained: "in general I would say a lot of my influence for my higher-end clients is often about focusing on more elegant styles – often looking at options of reducing alcohol a little, sometimes reducing the amount of new oak in some styles" (The Drinks Business, 2013). They impact the wine market with their ability to combine winemaking expertise and market trends, enabling them to produce successful wines. As Sam Harrop pointed out: "many winemaking teams don't get to the market enough, they are starved of trends and information from the market. The problem is, many marketers and sales people don't speak or understand the technical language of the winemaker, so there is a breakdown in communication between the two disciplines within the organization [...] As a winemaker with a good commercial understanding of and presence in the market place, I can help the winemakers create wines that not only have a reason for being, but suit the markets they are destined for and with any luck over-deliver as well" (The Drinks Business, 2013).

- Category 4: The new generation – modernist FWM.

These FWM are young individuals in the wine market who engage in several regions/countries to create a portfolio of experience and expertise. Mostly originating from the new world, they have about 10 years winemaking experience and a very small client portfolio and country coverage. They create a global network before settling in their region of origin and bring the internalized practices back to their home region when they decide to set up their own activities there. These FWM propagate modern winemaking practices and produce style-driven wines, focusing on building a strong personal brand to better position their wine by giving it a brand or an image. When flying abroad, these FWM take with them the practices, knowledge and latest technologies related to winemaking acquired from their university training, rapidly gaining an excellent good reputation abroad. They do not have a strong impact on wine processes but focus more on consumers' tastes. They develop wines that address niche markets as well as future millennial wine drinkers. One example is Eddie McDougall, a native of Hong Kong who was educated in Australia. He is an award-winning winemaker, wine judge, columnist and owner of a wine gallery in Hong Kong. He is chairman of the Asian Wine Review, a wine critic, and TV personality behind The Flying Winemaker, one of Asia-Pacific's most dynamic wine brands. He recently won the prestigious Young Achiever of the Year award, presented by the drinks business in 2018. His-TV show ('The Flying Winemaker') focuses on finding nontraditional winemaking regions and people who use

nontraditional winemaking practices. Eddie describes himself as an “urban winemaker [...] born from vines in the King Valley”, making wines for “[...] people who aren’t afraid to place [my] bottle smack in the middle of the lazy Susan at their next dim sum meal, in the back seat of their car on the way to the year’s best music festival or simply crack one open to make date-night that much better.” (Sassyhongkong, 2015). His drivers are discovering “unorthodox and unique methods for growing quality grapes in new environments,” and teaching “local communities the secrets to pairing wines with local dishes in ways that have never been done before” (The Flying Winemaker, 2018). For these FWM, the decision to relocate is based on the desire to promote wines made in traditional, old and remote vineyards. Nomadism, for them, is first underpinned by external capabilities; practices and know-how are then internalized, facilitating their dissemination worldwide.

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