

# **PLATFORM COMPANIES' INTERNATIONALISATION PROCESSES: THE ROLE OF PLATFORM BUSINESS TYPES**

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## **ABSTRACT**

This paper addresses a controversial issue pervading the research about the internationalisation of digital Platform Companies (PCs). While some authors argue that the asset-lite nature of such companies enable them to easily spread worldwide, others underline the existence of liabilities of outsidership (LoO) that constrain their internationalisation. We submit that the differences may be due to the specific characteristics of the business types followed by PCs. This enables a more fine-grained perspective of PCs' internationalisation. Our research questions are the following: how do the characteristics of PCs' activities influence (1) their need to establish localised ecosystems? and (2) the process of creating and nurturing ecosystems abroad? A taxonomy of the business types performed by PCs (Fully-digital businesses, Marketplaces, and Offline locally-delivered services) was developed. It was applied to three PCs, one for each business type. The results show that the process of creating and nurturing local ecosystems is carried out at different levels according to the business type. A key feature is the way in which the geographic expansion of the network is carried out. This is influenced by the mix of network interactions that occur inside and outside the platform. While Fully-digital platforms are more prone to generate online reputations and less influenced by location features, it was found that PCs' internationalisation is not necessarily easy. It faces hurdles, especially when multiple location-based ecosystems need to be established and stimulated.

**Keywords:** Platform Companies; Business Types; Internationalisation, Local ecosystems; Inside- and outside platform interaction.

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## PLATFORM COMPANIES' INTERNATIONALISATION PROCESSES: THE ROLE OF PLATFORM BUSINESS TYPES

### Introduction

We live in an increasingly digitized economy, dominated by platform companies (PCs). These provide services on a daily basis to millions of users around the world. The number of people served by *Facebook* and *YouTube* is larger than the population of the World's biggest countries (China and India), while the users of *WhatsApp*, *WeChat*, *Instagram*, *Alibaba* or *Twitter* exceeds US population (McKinsey Quarterly, 2018). There is a widespread view that PCs are able to achieve a strong global presence in a short period of time (Parente, Geleilate & Rong, 2018; Yonatany, 2017), following a "lean internationalisation mode" (Autio & Zander, 2016). However, several empirical cases – for instance, *Uber* in China and in Denmark, and *Airbnb* in Barcelona – have shown that PCs' internationalisation may be fraught with problems. This research is aimed at understanding the reasons behind such seemingly contradictory evidence. More specifically, our research questions are the following: how do the characteristics of PCs' activities influence (1) their need to establish localised ecosystems? and (2) the process of creating and nurturing ecosystems abroad?

The case of *Eskimi*, a Lithuanian platform that became the leading social network in Nigeria (Autio & Zander, 2016), epitomizes the idea that internationalisation becomes easy, since the issue is just providing an appropriate platform, and customers will flock to use it, irrespectively of their location. In the same vein, Parente et al. (2018) argue that the asset-lite nature of PCs is the main driver behind their fast internationalisation. Anchored on the internalisation theory, Banalieva & Dhanaraj (2019:1377) contend that digitalisation increases the cross-border transferability of a firm's technological advantages by enhancing its modularity and the firm's ability to bundle it with a local firm's specific advantage.

Another current of literature on PCs' internationalisation goes in a different direction. Drawing on the concepts of liabilities of foreignness (LoF) (Johanson & Vahlne, 1977; Zaheer, 1995) and especially liabilities of outsidership (LoO) (Johanson & Vahlne, 2009), it is argued that internationalisation requires the setting up of local networks in the target country (Brouthers, Geisser and Rothlauf, 2016; Ojala, Evers & Rialp, 2018). Stallkamp & Schotter (2018) call the attention to the influence of types of externalities (within-country

*versus* cross-country) dominant in the industry concerned in shaping speed as well as the difficulties faced by platform business internationalisation. Hennart (2019) underlines the heterogeneity of preferences, some of them location-based, while raising questions about the international relevance of network externalities.

The motivation for the present paper is to respond to the seemingly contradiction in extant literature. Instead of looking at PCs in general, we go more in-depth by identifying specific types of platform businesses, mostly based on the characteristics of the items transacted through the platform. A taxonomy of platform business types (Fully-digital businesses, Marketplaces, and Offline locally-delivered services) is developed, and its likely implications for internationalisation are analysed on five dimensions: network interactions; local market adaptation; user network expansion; lock-in effects, and location dimension. The taxonomy is applied empirically to three distinct PCs, following a case study method.

This paper provides four contributions to the growing IB literature on platform business. The first is the design of the taxonomy itself, providing a frame to improve our understanding about the internationalisation challenges faced by distinct PC types. The second is the finding that all platform business types face LoOs, though their intensity may vary according to the business type. Moving quickly from an outsider to an insider situation with regards to the various users in a given geography was found to be a must for the companies investigated, in line with Brouthers et al. (2016). The third contribution regards the fact that the process of creation and stimulation of dynamic ecosystems is undertaken at different levels according to the type of business the PC operates in. The main differentiating factor is the way in which the network's geographic expansion is affected, a feature that is directly influenced by the pattern of interactions occurring both within and outside the platform. Finally, our empirical research confirmed that the internationalisation of PCs is not as easy as Autio and Zander (2016) or Parente et al. (2018) have suggested. It faces difficulties, especially when multiple, largely independent localized ecosystems need to be established and developed.

The paper has eight sections, including the present introduction. The next section provides a revision of the literature on platform internationalisation. The third section develops the framework of platform internationalisation challenges according to the type of business performed and introduces the research questions. The case study method followed is presented in the fourth. The next provides a brief summary of the three case studies. The

sixth section provides the main finding from the inter-case analysis and responds the research questions. The main findings are discussed in the seventh section. The paper closes with the key conclusions, limitations and suggestions for further research.

## **Literature Review**

### *Platform Companies: Definition and Main Features*

The concept of platform business model goes back to the pre-digital era. Businesses such as shopping malls, newspapers and credit cards already followed a platform approach; they were aimed at fostering interactions among various users in order to generate mutually beneficial exchanges (Evans and Schmalensee, 2016; Parker, Van Alstyne & Choudary, 2016). However, those pre-digital platforms were limited to some industries and bounded by physical distance and capacity limitations (Stallkamp & Schotter, 2019). It was the development of the internet and the ubiquity of 3G mobile phones that enabled the fast spread of a new type of platform business that are now encircling the world; these are mainly located in Asia and in the US, SAP being the only European company in the top 10 (Evans & Gawer, 2016).

Drawing on Evans & Schmalensee (2016) and Parker et al. (2016) we define PCs as enterprises based on digital business models, providing a virtual space for different types of customers to interact<sup>1</sup>. Making use of the internet and often of proprietary apps, they are geared to create markets by enabling different types of users to undertake transactions. Platforms may be double- or multi-sided, according to the number of user types involved in the platform (Evans & Schmalensee, 2016; Rochet & Tirole, 2003; Eisenmann, Parker & Van Alstyne, 2006; Hagiu & Wright, 2015; Helfat & Raubitschek, 2018; Cennamo, 2019).

For platform firms to encourage value-creating interactions, they must play three key functions: attract, facilitate and combine different players (Parker et al., 2016). The capability to attract is intrinsically intertwined with the “chicken & egg problem” (Caillaud & Jullien, 2003), that is, the need to attract a minimum number of users from one side for participants from other sides to join the platform. The facilitating function refers to the capability of a platform firm to accelerate the creation and exchange of value through its infrastructure (reducing barriers to use, avoiding unwanted interactions, and setting up tools for interaction). Finally, the combinatory function has to do with the development of

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<sup>1</sup> We thank an anonymous reviewer for the comments provided on an earlier definition.

efficiency in the matching of appropriate users, with recourse to filters intended to enhance user experience.

Network effects are at the core of PCs' development. Positive intra-side and inter-sides network effects are key sources of value creation and competitive advantage, by fostering virtuous circles of interactions among users while eliciting potential users to join the platform (Caillaud & Jullien, 2003; Evans and Schmalensee, 2016, Parker et al., 2016). In order to achieve the emergence of virtuous circles, the platform needs to provide the required conditions for the creation of scale effects, which demands the reduction of friction with respect to the users' ability to get involved quickly and easily within the platform and to become engaged in value-creating processes<sup>2</sup>. However, network effects may also have a negative impact on the platform ecosystem. As more players join the platform, the risk of undesirable behaviours increases. This requires additional curation efforts, namely through the setting up of filters and controls to limit the access of undesired participants to the platform, the activities they participate in and the interactions they establish with other participants (Evans & Schmalensee, 2016; Parker et al., 2016). The setting up and nurturing of a vibrant ecosystem, generating virtuous circles is the objective of platform managers (Helfat & Raubitschek, 2018). In this article, we draw on Evans & Schmalensee (2016), Adner (2017) and Jacobides, Cennamo & Gawer (2018) to define an ecosystem as follows: a set of individuals, businesses (including complementors and competitors), governmental and non-governmental organisations, regulations and other institutions that, by their multiple complementarities and interactions, affect the value that a platform can generate.

A key issue to understand platform internationalisation is whether PCs' ecosystems have a global or a local nature. Stallkamp and Schotter (2018) developed a framework identifying three levels of direct and indirect network externalities<sup>3</sup>: negligible, within-country, and cross-country. This approach provides a good starting point to address platform internationalisation.

### *The Internationalisation of Platform Companies*

There is consensus in the literature that the setting up of a dynamic ecosystems is essential for platform success (Evans & Schmalensee, 2016; Helfat & Raubitschek, 2018). As briefly

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<sup>2</sup> This does not mean, however, that the value created will be evenly shared among the members of the platform ecosystem (Teece, 2018; Helfat & Raubitschek, 2018; Simões, 2018)

<sup>3</sup> Direct network externalities refer to same side interactions while indirect network externalities concern other side externalities.

pointed out in the introductory section, the widespread adoption of this business model throughout the world is one of the largest and fastest internationalisation movements to date (Autio & Zander, 2016; Parente et al., 2018). Such speed was due to the lower need to transfer physical assets worldwide (Parente et al., 2018) as well as to the fact that digitalization reduces the dependence on location specific assets, while attenuates vertical asset specificity (Autio & Zander, 2016). Therefore, digitalization enables firms to generate and build on line reputations in foreign markets, which is likely to mitigate the LoF (Autio & Zander, 2016).

There is, however, another view that, while recognizing how fast some PC have internationalized, points out that PCs face significant challenges when it comes to the international replication of the platform's ecosystem (Brouthers et al., 2016; Ojala et al., 2018; Simões, 2018; Chen, Shaheer, Yi and Li, 2019). In this view, the key issue not minimizing the risks associated with LoF but rather the capacity to replicate the business ecosystem in the foreign market (or extending it from a previous location),

The networks relevant for setting up appropriate platforms' ecosystems are different from those addressed by traditional industrial markets, in the vein of the Industrial Marketing and Purchasing approach. In other words, the concept of industrial network significantly differs from the concept of network in the case of platforms (Banalieva & Dhanaraj, 2019). Here, the focus is the development of interactions inside the ecosystems, in which users take multiple roles: suppliers, customers, complementors (Parker et al., 2016; Evans and Schmalensee, 2016; Helfat & Raubitschek, 2018). Thus, the ability of these companies to overcome the LoOs is contingent on their capabilities to build up a new network of users and/or to integrate into an existing network of relationships in another geographic context (Brouthers et al., 2016; Ojala et al., 2018; Helfat & Raubitschek, 2018; Hennart, 2019). By rapidly moving from an outsider to an insider of a network in a different geographic arena, the company strengthens its ability to attract enough users to reach critical mass and secure a solid market position (Eisenmann, 2006). However, the establishment or even replication of a platform ecosystem rich in interactions in another location is likely to require a significant effort (Brouthers et al., 2016; Ojala et al., 2018).

Since PCs encompass different approaches (Hennart, 2019), a question emerges: is such an effort independent from the characteristics of the items transacted in the platform? In other words, is the effort contingent upon the type of business the platform is engaged in?

Unfortunately, with a few exceptions —most notably Hennart. (2019) and, on a different vein, Evans & Gawer (2016) and Cennamo (2019) —, extant empirical literature has overlooked the question raised above. Most approaches have addressed platform businesses in general without examining PCs’ specific characteristics. There is a need for increased granularity in the research on PCs’ internationalisation. In the next section we will address the question by developing a more fine-grained taxonomy of the types of businesses carried out by PCs.

### **A Taxonomy of Platform Companies: Implications for Internationalisation**

The success of PCs derives from their ability to generate value through the provision of a platform and the organization of user interactions (Brouthers et al., 2016; Parker et al., 2016). This is related with the capacity to create and nurture dynamic ecosystems, involving the orchestration of relationships among different players (Ojala et al., 2018; Helfat & Raubitschek, 2018; Simões, 2018). However, the way how the ecosystem is managed is likely to be contingent upon the type of business, which impinges upon the kind of interactions taking place inside and outside the platform itself.

We carried out an analysis of multiple PCs to identify the characteristics of the items transacted and the kind of inside-and outside-platform interactions. This led to the identification of three basic business types: (1) Fully-digital businesses, such as *Facebook*, *Instagram*, *Pinterest*, and *YouTube*, (2) Marketplaces, as is the case of *Amazon*, *E-Bay*, *Farfetch*, and *Alibaba*; and (3) Offline locally-delivered services (*Uber*, *Glovo*, *Airbnb*, and *Uniplaces*). In the first type, the interchange between the partners involved is exclusively carried out by digital means, through a website or an app. In contrast, in the second, the transaction cannot be fully consummated online, since it involves the exchange of tangible goods (including, for instance, books, grocery items, machinery or garments). The establishment of relationships with logistics “complementors” (Nalebuff & Brandenburger, 1996), either national or international, is essential. In the third type, interactions are more complex and localisation requirements increase. Although the interaction leading to the transaction starts on a digital platform, often drawing on an app, the service itself has to be provided off-line through face-to-face interaction, because it involves the use of physical enablers, a motorcar in the case of *Uber*, or the delivery of physical goods, such as a meal for *Glovo*. These aspects are summarised on Table 1 below.

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Besides interaction characteristics, the taxonomy proposed has implications on three additional dimensions, also shown on Table 1: market adaptation; user network expansion and lock-in effects. The adaptation to the market is intended to meet local users' needs and to improve their user experience. It includes aspects such as delivery of the platform app in local languages, and local/national regulations that may restrict the setting up of the technological infrastructure and the attraction of third parties endowed with market knowledge, which may contribute to create more value in the platform (Brouthers et al., 2016; Ojala et al., 2018; Parente et al., 2018). The expansion of the user network differs according to the PC's business type. It is likely to be faster for Fully-digital business, in line with Autio & Zander (2016), but is usually carried out more gradually and in smaller areas in the case of Offline locally-delivered services. Network expansion is also influenced by other factors, namely the provision of complementary services for the accomplishment of the interaction (Brouthers et al., 2016; Simões, 2018), the ease of access and platform connectivity (Parente et al., 2018; Ojala et al., 2018), and the intensity of demand and supply interactions in the market concerned (Stallkamp & Schotter, 2018). Online reputations may emerge as suggested by Autio & Zander (2016). However, as Chen et al. (2019) have found, even for Fully-digital businesses international network effects have a limited effect on the likelihood of penetrating new countries; such effects are also moderated by the relevance of "country clout" (Chen et al., 2019). The lock-in effect is directly related to users' motivation to engage in repeated transactions and interactions in the platform, and the incentives that are provided by the PC to repeat and improve exchanges (Amit and Zott, 2001). A relevant objective of a PC is to prevent the migration of users to potential competitors, which also means to discourage multihoming (Caillaud & Jullien, 2003; Parker et al., 2016; Landsman & Stremesch, 2011). This entails the use of curation instruments as well as the assurance of complementary services by reliable external entities.

The combination of different levels of interaction, platform adaptation to the market, network expansion and the lock-in effect are likely to have a significant influence on PCs' internationalisation patterns, especially on the requirements for local integration and the setting up of national/local ecosystems. Platform business success is dependent, as Evans &

Schmalensee (2016), Parker et al. (2016) and Brouthers et al. (2016) have argued, on reaching a critical mass of local platform users.

This leads to the formulation of two research questions:

**Research Question 1:** How is the perception of the need to create and develop business ecosystems in different locations influenced by the type of business?

**Research Question 2:** How does the process by which platform companies endeavor to create and nurture dynamic ecosystems abroad vary according to the type of business?

## **Research Method**

To respond the questions formulated above a case study approach was followed. The unit of analysis is the PC. The purpose is to figure out how distinct types of PCs have internationalised and developed their business (and ecosystems) abroad. Three PCs based in Portugal, one from each type of business, were deeply investigated. The rationale for undertaking case studies, case selection, the process of data gathering, and information validity are addressed next.

### *Why case studies?*

According to Yin (2009), the use of a case study is most appropriate to address *how* and *why* research questions. By allowing deeper contact with the agents involved, more detailed and in-depth information is obtained, showing details that might otherwise go unnoticed. Furthermore, the use of a case study method is more appropriate in the early stages of the research of new phenomena (Eisenhardt, 1989 and 1991; Eisenhardt & Graebner, 2007), as is clearly the case of PCs' internationalisation. Piekkari, Welch & Paavilainen (2009) argued that case studies have become the most common approach to perform qualitative research in international business journals. For research with an experimental flavour, as the present one, case studies are suited to the objectives of knowledge expansion and theory generalisation (i.e. analytical generalisation) instead of frequency enumeration (i.e. statistical generalisation).

The focus on Portuguese PC was due to four reasons. First, there is a dearth of research on the internationalisation of Europe-based platforms, the exceptions being Brouthers et al. (2016), Ojala et al. (2018) and Autio & Zander (2016). Second, Portugal is a small European country with a low "country clout" (Chen et al., 2019), thereby ensuring that the analysis is less biased by extra-company factors. Third, it was easier to get access to

the relevant managers to elicit detailed information about company strategy and behaviour. Fourth, the recourse to cases grounded in the same country avoids inter-country contextualization issues (Michailova, 2011).

Since the purpose is to compare cases pertaining to different business types, we carried out a multi-case study. According to Yin (2009), this is important to deepen the level of knowledge about a particular phenomenon, and to generate more robust explanations. The case studies protocol<sup>4</sup> was designed specifically taking into account the key features of the taxonomy provided above. Information collection was intended to get information about the various aspects considered as potentially relevant to influence the internationalisation pattern and the approaches followed with regard to ecosystem management.

#### *Case Selection*

The initial selection of PCs was carried in the context of a larger research project on start-up companies that presented a platform-based business model and that appeared to have already reached a global presence. Through a desk research, a database of potential cases was developed, including a standardized set of information on the PCs (founders, year of business launch, international scope, business characteristics, and company specific features). The database served as the launching pad to select PCs, taking into consideration international expansion and the type of business (Fully-digital businesses, Marketplaces, and Offline locally-delivered services). Throughout this process, we took into consideration Miles and Huberman (1994) position that the selection of case studies should be guided by theory, so as to establish a reference to respond to research objectives.

The above procedure allowed the identification of about twenty companies that appeared to meet the requirements for our research. Introductory contacts were undertaken by sending an email and a direct message to the founders through social networks (*LinkedIn* and *Facebook*). The message contained information on the research objectives, a brief description of the concept of PC and the suggestion of a meeting in order to obtain more information on the evolution of the company's business and the conduct of international activities. Six companies responded our approach, of which four agreed to cooperate in the research. Of the four companies that expressed openness to participate in the interviews, one did not agree to provide information regarding the strategies followed in the international expansion process. Therefore, the final set of cases is three, one regarding each platform

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<sup>4</sup> This protocol is available upon request.

business type. The cases are the following: *Aptoide*, an online game and app-sharing platform; BUYIN.PT, a marketplace geared to export Portuguese products; and *Landing.Jobs*, a recruitment platform specialised on IT jobs.

#### *Data Collection*

One of the advantages of qualitative research approaches, namely case studies, is the possibility of studying phenomena in their natural contexts, thereby enabling data collection to occur close to the situation under research (Yin, 2009; Miles and Huberman, 1994). To avoid possible discrepancies in the information available, we followed a triangulation method (Hurmerinta-Peltomäki & Nummela, 2006; Jick, 1979; Yin, 2009), using two main sources: interviews with the founders or members of the promoter team and public documentation on the companies. This reinforces the reliability and validity of the research carried out (Eisenhardt, 1989; Yin, 2009).

Public documentation was obtained mainly online in various formats as well as in magazines, videoconferences and newspaper articles. These documents essentially included interviews with the companies' founders and/or with the promoting team, news reports, and the financial reports. Most of this information was used to verify the characteristics of company concerned and to build a solid basis for the interview phase.

Interviews were carried out with founders or executives who were directly involved in the companies' international expansion. A script was prepared in advance, based on the information already collected about the companies, in order to respond the research objectives<sup>5</sup>. The script allowed the conduct of semi-structured interviews with open questions focused on understanding the sequence of events regarding the creation and development of the company, the internationalisation process and the characteristics of the platform itself. This interview format allowed participants to discuss the issues and explore the field (Eisenhardt, 1989), allowing to achieve three objectives: to understand the company's context, to figure out the internationalisation logic and strategies, and to detail the process followed, including ecosystems' creation and nurturing. The initial interviews took place during the month of August 2018 at the company's premises, being followed by additional interviews and occasional phone and web contacts; in the case of *Aptoide* one of the interviews was carried out by videoconference. The average length of the interviews was 90 minutes; they were transcribed following an adapted version of the Yin (2009) case study

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<sup>5</sup> The script is available upon request.

protocol, in order to ensure the validity of the information. The interviewees were the following: Tiago Soares, Vice President of Asia-Pacific, and Inês Cunha, Community Manager, *Aptoide*; Ricardo Wallis, CEO and co-founder of BUYIN.PT; and Diogo Oliveira, Head of Business Development at *Landing.Jobs*.

#### *Information Validity*

A set of procedures was followed in developing the case studies with a view to ensure the validity of the information obtained (Yin, 2009). In line with the guidelines provided by Yin (2009), we addressed the following four validity dimensions: (i) construct validity, by using and matching different information sources; (ii) internal validity, through the identification of within-case patterns and the explanation of the relationships between them; (iii) external validity, using to the extent possible a logic of replication in the cases studied; and (iv) external reliability, by implementing a case study protocol.

### **Case Presentation**

#### *Aptoide*

The idea of creating an open-source Android application store, with a focus on the user ecosystem, came up in the development of a doctoral thesis in the area of Computer Science, by Paulo Trezentos. *Aptoide's* business model emphasises the provision of a content-sharing platform alternative to *Google Play*. The idea was to create a non-centralized platform for distributing Android games and apps, allowing any person or company to create their own store, with applications selected from the central store. “*It works much like YouTube, where users can create their own channels*”.

With the growth of the platform user ecosystem in the Iberian market, *Aptoide* began to expand to Latin America, drawing on word-of-mouth (WoM) among the Iberian user community. In 2013, the company raised a seed round of one million dollars from *Portugal Ventures*, the Portuguese public venture capital organization, geared to expand the team and to implement user attraction and retention measures. *Aptoide* began by developing programs of influencers and ambassadors, which allowed to reach more easily the target public and to extend its ecosystem in the Latin American market.

Although the initial efforts were directed to the European and Latin American markets, the founders decided in 2015 to extend its scope to the Asian market. This decision was taken after conducting market studies, which pointed to a boom in the use of

smartphones in Asia. Soon after taking the decision to invest in the Asian market, the co-founders of *Aptoide* sought help for a series A investment round. A four million dollar investment round was funded by *E.Ventures*, *Portugal Ventures* and two Asian companies, the Singaporean *Golden Gate Ventures*, and the Chinese *Gobi Partners*. The investment provided the funds for the company to accelerate its growth in the target markets, Latin America and Southeast Asia, as well as to build strategic relationships with regional partners, more specifically with integrators and OEMs, such as *Vivo* and *Oppo*. To support this operation, *Aptoide* opened offices in Shenzhen, China, and Singapore. According to Tiago Soares, Asia Pacific VP, "*there is a strong need to establish a close relationship with Asian market partners*", and the offices were intended to meet such need. The moves taken led to the pre-installation of *Aptoide* games in a million devices in the first half of 2017, in the Southeast Asian market. In July 2018, *Aptoide* had approximately 850,000 apps and 380,000 stores with applications and games from the central store, available worldwide. At the time of the interview, it encompassed a global community of 200 million users.

#### *BUYIN.PT*

Founded in 2011, the *BUYIN.PT* project, the first marketplace platform to support Portuguese exporting companies in accessing international markets, stems from several years of international trade experience of Ricardo Wallis, the company's current CEO. Initially, the platform was designed as a sophisticated online store, in which all the suppliers' products were available, but which did not allow direct interaction between suppliers and customers.

To provide the necessary conditions to create a dynamic ecosystem with a simple and transparent structure, the founding team geared their efforts towards the establishment of strategic partnerships to support the platforms' customers with regard to logistics and transportation services (*DHL Worldwide Express*), translation services (*Crossingwords*), insurance (*MDS Group*), among others. In 2016, despite the good acceptance of the marketplace by domestic companies, there was a need to attract more foreign companies to achieve a more balanced platform, enabling network interactions. Therefore, the company applied for the *Web Summit Alpha Program* in 2016; this was the first major opportunity to showcase the platform to a global community. From September 2016 until January 2017, *BUYIN.PT* established several international partnerships, joined international trade associations and launched the app for Android. As a result, in February 2017, the platform

opened internationally, secured by strategic partnerships that provided logistics and transport services, consultancy, legal services, insurance, and translation services. In order to reach critical mass and strengthen the platform's ecosystem, it was decided to bet on the Chinese market. In March 2017, the first business trip to Macao, a former Portuguese colony close to Hong Kong, was made. The mission was facilitated by the knowledge about Portuguese products among several segments of Macao's population, since the territory had been under Portuguese administration for several centuries. The goal was to generate greater awareness of the platform among business associations and leading Chinese import companies. According to Ricardo Wallis, "*BUYIN.PT's business model is similar to Alibaba's.*" The goal is to help Portuguese SMEs to export their products to the Chinese market. The exporters' selection process is carried out by the founder, the purpose being to ensure the integrity and added value of the platform. A rating system was implemented by assigning stars to service quality, based on a set of evaluation criteria. This curation method intended to generate a balance between the appropriate users in the ecosystem, by guarantying the platforms' credibility.

The company's big bet continues to be on the Chinese market, where it hopes to establish more strategic partnerships on a regional base. By August 2018, *BUYIN.PT* had 1200 foreign importing companies, and about 200 Portuguese exporters in its user ecosystem.

#### *Landing.Jobs*

Founded in March 2014, *Landing.Jobs* has emerged with the intention of revolutionizing the recruitment of human resources in the Information Technology (IT) market. Pedro Oliveira and José Paiva, with previous experience in the areas of technology and recruitment, detected the struggle faced by IT firms in recruiting employees. Given the high demand for IT professionals, *Landing.Jobs* endeavoured to find a way to take advantage of this opportunity by providing a recruitment services platform. The uncertainty and lack of transparency in the market led to the creation of a business intended to activate the community of IT professionals and to fuel the matching process between both sides of the recruitment market. Lisbon was used as the launching pad, and the first contacts and hirings were based on the founders' networks. However, local companies in Lisbon were comfortable working with recruiting agencies. This led *Landing.Jobs* to generate higher levels of B2B engagement in order to foster a dynamic community, which consists of IT

companies, on the one hand, and international IT professionals, on the other. As a result, the first *Landing.Festival* was held in Lisbon, in June 2017. The event brought together, in a single space, 50 would-be recruiting firms and 1500 professionals.

In 2015, the company received a funding round of €750,000 from *Portugal Ventures* and *LC Ventures*, a Portuguese venture capital firm, intended to kick-start the internationalisation process. To strengthen the platform's interactions network and to activate the ecosystem, the expansion process began in a progressive way towards cities with perceived growth potential. The first inroad abroad was made in Barcelona, given the ease of cultural adaptation and the existing connections to the market. After a thorough market analysis, it was decided to expand the business to Berlin, due to the growth in the demand for IT professionals, the existence of diverse pool of technological firms and the openness to employ international candidates. In March 2018, the company held its first recruiting event, labelled *Landing.Festival*, in Berlin. To accelerate its international expansion, the company counts with specific partners to stimulate the matching process in the platform. These partners are specialized in providing work visas (*Berlin Partner*) and improving the hiring process in the local markets (*Elephant HR*, in Berlin).

By September 2018, *Landing.Jobs* appeared to be a sustainable company that has reached the break-even point. The company was positioning itself to raise a series-A investment round in 2019. Its user ecosystem encompasses a total of 2,500 companies and 80,000 professionals, the main markets being Lisbon, Barcelona, Berlin, Hamburg, Oporto and Amsterdam.

### **Inter-case analysis**

This section explores and confronts the cases at the light of research questions:

RQ 1 – How is the perception of the need to create and develop business ecosystems in different locations influenced by the type of business?

RQ 2 - How do PC endeavour to create and nurture dynamic ecosystems abroad vary according to the type of business?

As to the first research question, the examination of the cases confirms that PCs, irrespectively of the business type, feel the need to build and develop ecosystems, involving users, complementors, facilitators and other players. Such a need is anchored on three aspects: the struggle of businesses based on a small European country to overcome the LoO, the reach of a critical mass of users' interaction, and the development of conditions for lock-

in. The problem of outsidership is essentially the lack of awareness about the network of users in foreign markets, as in the case of *Landing.Jobs* and *BUYIN.PT*, and the lack of diversity in the network of relationships that provides access to other organizations, as in the case of *Aptoide* for the expansion to Southeast Asia. The establishment of partnerships was found to be essential to both counter LoO and get traction in the platform. *Landing.Jobs* founders started with their contact databases, but soon perceived that “*the existing network was not enough to reach critical mass*”. Initially *Aptoide* largely relied on WoM, since its business was fully-digital. However, when it endeavoured to approach the market of Southeast Asia it felt that partnerships were mandatory for a successful entry.

Besides these similarities, perceptions were also strongly influenced by the type of business performed. For *Aptoide*, the original perception was that the use of WoM would lead to the creation of regional communities (Iberian Peninsula, Latin America) that might coalesce into a worldwide community. WoM allowed the company to create a bridge between users from different markets. Therefore, “*the growth of the user base in South America occurred in an organic way, although Aptoide was always available worldwide*” (Tiago Soares, *Aptoide*). In contrast, *BUYIN.PT* had, since inception, the acuity that it could not rely so much on WoM, and that the kernel of its business development relied on achieving a critical mass of foreign importers, which required geographic concentration. The issue was “*to establish a network of contacts in different markets and to identify which companies can get value from participating in the marketplace*”. For *Landing.Jobs* the key was to get insiderisation into the IT specialists’ community, whose members are internationally mobile. However, the recruiting companies were already settled in specific places. Therefore, to ensure a good matching, a fine-grained geographic approach, targeted roughly European cities, was followed<sup>6</sup>. Through the launching of specific events in the main target locations *Landing.Jobs* intended to “*generate a lot of buzz around the company*”. The evidence suggests, therefore, that while the need to create ecosystems is felt for all business types, the geographic approaches followed were very much influenced by the patterns of inside and outside-platform interactions between the targeted users.

The second research question has to do with the procedures used to create and nurture dynamic ecosystems. The evidence collected indicates that the type of business has a direct

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<sup>6</sup> At the time of writing this article, information available suggests that *Landing.Jobs* is considering the extension of its geographic scope to Toronto, Canada.

impact on how the interactions are carried out inside and outside the platform, therefore influencing the creation and stimulation of dynamic ecosystems.

Adopting a Fully-online business approach, as mentioned above, *Aptoide* used WoM and users' connectivity to expand in the Iberian Peninsula and in Latin America. Without requiring developers to put games and apps on the platform, "*users around the world go to their own store (within the platform), put their favourite apps and games and share with the global community*". On the B2B (Business-to-Business) side, the platform enables the creation of customizable stores with *Aptoide* content, through an API (Application Programming Interface) available to partners. When going to Southeast Asia, the need for partnerships became more intense. The support provided by Asian investors enabled the company to establish partnerships with mobile phone manufacturers, to increase its user base and to open offices in Singapore and Shenzhen. Tiago Soares (*Aptoide*) confirms that "*the involvement of Asian investors turns out to be a hallmark of trust and helps create credibility in the market*". The links with telecom operators and electronic equipment manufacturers have accelerated the company's internationalisation process and improved its performance. This included the development of a 'lite' version of the application and a specific application store for each market, to suit to local preferences. Although the partnerships play a significant role in the dynamization of the platform's ecosystem, *Aptoide* also has *AppCoins*, an open-source protocol for application stores, based on block chain technology. This protocol aims to achieve three objectives: to enrich the platform's ecosystem by providing users with new forms of payment; to increase transparency and efficient monetization of apps by developers; and to bring about an universal language to ensure the platform's reliability, without the need for intermediaries.

*BUYIN.PT* and *Landing.Jobs* faced far more difficulties in attracting the first users to the platform. *BUYIN.PT* started to implement strategies to attract Portuguese exporting companies, such as the creation of a commercial team whose purpose was to contact companies and create market awareness. This was just one side of the coin: getting foreign customers was a more daunting issue. It required the establishment of partnerships with business associations and large importing companies, with a geographical focus, and further supported by face-to-face contacts. Ricardo Wallis states "*partnership with business organizations is aimed at attracting large customers*". Business trips to Macau, Dubai and Abu Dhabi were aimed at "*making the e-marketplace known*" to importing companies. The

founder's active participation in international conferences and fairs was envisaged as a tool for stimulating awareness about the platform, expecting that it might inject dynamism in the ecosystem. By introducing complementary services and establishing partnerships with market organizations that are "*sober of imported products from the First World*" there was the intention to make the platform attractive to both Portuguese exporters and to foreign importers, creating positive indirect network effects. Although the platform was not responsible for the delivery of the products themselves, the difficulty in designing a compelling business case for distant suppliers and customers to trade together has seriously undermined platform's growth.

With regard to *Landing.Jobs*, the initial perception of anchoring all business development in action in the web was changed. Actions were launched to attract users, based on digital marketing and pop calling. However, this did not work. The perception of the need to focus on the candidates' side emerged; a system of references with a bonus for those who made more references was implemented. Tools such as matching algorithms and candidate search also allowed for an "*increase in established interactions between both parties*" and increased community satisfaction with "*delivery of quality service*". According to Diogo Oliveira (*Landing.Jobs*), "*30 to 40% of the company's growth is due to WoM [and] to the creation of a community that enjoys the experience on our platform and makes referrals to bring more people*". But there was simultaneously the need to further encourage employers, which are less mobile. Therefore, more geographically focused actions were needed; for the recruitment process to be completed, IT specialists and potential employers have to meet together, physically. Therefore, the company also launched offline events to foster the interaction between both sides. After the success of the first *Landing.Festival* in Lisbon, the event was replicated in Berlin. This proved to be "*a great tool to enter the market*", since it is not only a job fair but also an "*opportunity to make the platform known to the right people and to foster interaction and matching between companies and candidates*".

Therefore, *Landing.Jobs* follows a city-to-city approach (Lisbon, Oporto, Barcelona, Berlin, and Amsterdam). The process entails significant levels of local market adaptation. For instance, the company draws on specific partners to help with reallocation and matching issues in Barcelona and Berlin. Here, the company cooperates with the *Berlin Partner*, which provides support for work visas, and with *Elephant HR*, which aims to accelerate the selection process for applicants. "*Partnering with Elephant HR helps us with the matching*

*processes, as we do not have so much knowledge of the German market and of not being there physically", said Diogo Oliveira.*

In conclusion, our investigation shows that, while there are again some common thrusts to the various cases, differences between the business types are clear. These are largely linked to the relative importance of inside- and outside-platform actions needed to foster the ecosystem development and the adaptation requirements for different geographical markets. When co-location is required to ensure the completion of the deal, as it happens with Offline locally-delivered services (*Landing.Jobs*), the relevant territory becomes the city, and not the country. The main findings are summarized on Table 2 which provides a synthesis of application of the taxonomy presented on Table 1 to three case studies.

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## **Discussion**

A key purpose of this research is to understand how PCs' business type influences the creation of dynamic ecosystems in different locations. The case studies developed and contrasted above provide interesting findings that contribute to the literature on PCs' internationalisation. The case studies have shown the existence of commonalities, but have also highlighted their differences, which are largely due to business type differences.

Three commonalities clearly emerged. The first is the perception of the need to set up local ecosystems abroad, involving other types of players besides those interacting in the platform. This finding confirms the views of Brouthers et al. (2016), Evans & Schmalensee (2016), Parker et al. (2016) and Helfat & Raubitschek (2018). Even for a Fully-digital business like *Aptoide*, the need to create and nurture localized ecosystems was felt. However, such a need was more strongly perceived in the other two business types, due to the offline elements required to carry out the business. The second commonality was the reliance on WoM. This was particularly stressed by *Aptoide* and *Landing.Jobs*. WoM is envisaged as key element to generate network externalities, in line with Stallkamp & Schotter (2018), and to promote online reputations (Autio & Zander, 2016). However, WoM effects are limited even for Fully-digital businesses. *Aptoide* perceived the need to take further initiatives to foster awareness, by drawing on ambassadors and influencers; and when it decided to enter Southeast Asia different approaches were required. This suggests that, even for Fully-digital

businesses, the benefits from online reputations are limited, and may need to be supplemented by other instruments. The third concerns the reliance on partnerships for international business development. Such partnerships include the links with electronic equipment manufacturers (*Aptoide*), with business associations in China (*BUYIN.PT*), and with companies specialized in reallocation processes or more cognizant of local work markets (*Landing.Jobs*). Partnerships are envisaged as tools to pursue five objectives: to attenuate LoO effects, confirming Johanson and Vahlne (2009) and Brouthers et al. (2016); to foster awareness and reputation (Parente et al., 2018); to get access to complementary capabilities (Helfat & Raubitschek, 2018; Alcácer et al., 2016; Ojala et al., 2018); to keep asset-light operations (Banalieva & Dhanaraj, 2019; Parente et al., 2018); and to spark and strengthen ecosystems' dynamics, in line with Brouthers (2016) and Parente et al. (2018).

It is against this background that inter-business types differences emerge. Our empirical research confirms that business types and the associated characteristics of transacted items and inside- *versus* outside-platform interactions strongly influence companies' behaviours. The differences have to do with both the perception of the need to create and develop localized business ecosystems and the actions undertaken to do so.

With regard to the territorial nature of ecosystems, the approaches by the Fully-digital platform (*Aptoide*) and the Marketplace (*BUYIN.PT*) are contrasting. While the former assumed that WoM and online reputation would be the basis to generate enough traffic and reach critical mass, for the latter the attractiveness of exporters based on a low "clout" country (Chen et al., 2019) was since inception perceived as insufficient to entice customers to join the platform. Furthermore, the need for geographic concentration of customers was important to reduce transaction and transportation costs. This led to location focus, China, Dubai and Abu Dhabi being envisaged as target markets, in which partnerships had to be established. The Offline-delivered services platform (*Landing.Jobs*) comes in between. While WoM is still relevant, due to the specific nature of the IT profession, it was soon felt that courting potential customers had to be carried out on a city-by-city basis. The relevant territorial unit is an IT services hub, to enable critical mass. With hindsight, it became clear that cities are relevant for both demand (the location of recruiting firms) and supply (the level of city attractiveness for individuals and families).

The analysis suggests that as the mix of inside-platform versus outside-platform tilts in favour of the latter, the relevance of location, eventually on a sub-national basis, increases.

Therefore the argument that digitalization reduces the dependence on location specific assets (Autio & Zander, 2016) needs to be taken with caution, as shown by the *Landing.Jobs* case. Such mix, combined with the other three elements of the taxonomy (local market adaptation, user network expansion, and lock-in effect), strongly influences the characteristics of network externalities. This suggests that our taxonomy may provide a more workable tool with regard to the industry level proposed by Stallkamp & Schotter (2018).

Turning now to the actions undertaken to create and nurture dynamic ecosystems, three main differences emerge: the first has to do with the inside- *versus* outside-platform mix of interactions; the second concerns the locus of such actions; and the third is related to the kind of further players courted to join the ecosystem.

While for every type of business platform attractiveness and curation were relevant to enhance user experience, the size and depth of intra-platform actions were more significant for the Fully-digital platform (*Aptoide*) than for the other cases. *Aptoide* made use of API to streamline the participation (inside-platform) and developed the *AppCoin* to make payments easier. This had the double effect of enhancing both within-country and inter-country network externalities (Stallkamp & Schotter, 2018), as they are carried out through the platform. The same did not happen in the other cases. Offline initiatives had to be developed to attract more members from one side of the platform, including the development of partnerships with Chinese associations, to elicit customers (*BUYIN.PT*) and the launching of events to stimulate potential employers and IT specialists to use the platform (*Landing.Jobs*). This need for offline interactions confirms the findings of Brouters et al. (2016), regarding the use of change agents, and Ojala et al. (2018).

The main locus of ecosystem development actions is different in the three cases. For *Aptoide*, the virtual space is envisaged as the main interaction place, in spite of off-platform collaboration with telecom operators and electronic equipment manufacturers. Outside-platform meetings with organisations that might pave the way for new members to join the platform were held by *BUYIN.PT* especially on a regional or even city basis. The purpose is to attract a number of players enough for the platform to get traction in selected locations. Finally, for *Landing.Jobs*, the *Landing.Festivals* are held in specific cities, as was the case of Lisbon and Berlin. This is also related to specific characteristics of local markets and with the need to focus to achieve a denser interaction network. Therefore, our findings converge with the arguments by Evans & Schmalensee (2016) and Stallkamp & Schotter (2018).

However, we go further than the latter authors do by providing empirical examples of differences and by focusing on specific interaction features instead of industries.

The characteristics of the players approached to join the ecosystem were found to be contingent upon the type of business. This concerns the way in which transactions are consummated and the need for complementors. For *Aptuide* the links with OEM are essential for the platforms' games and apps to spread faster. For *BUYIN.PT* the main issue is still to have increased traffic; hence, the focus on facilitators geared to attract customers. However, other actions were taken to reduce the perceived risk and to enhance user interaction, such as the cooperation with logistics and insurance companies. Our findings confirm extant literature regarding the need to set up linkages (Brouthers et al., 2016) and to combine complementary resources (Ojala et al., 2018) to grow internationally. There is, however, a caveat to be raised: the pattern of the players attracted to the ecosystem is also contingent on platforms' maturity. It would be therefore useful to develop further empirical research focused on PCs following different business types but having similar maturity levels.

This research was intended to address how PCs' business types influenced (1) the perceived need to establish localized ecosystems, and (2) the process of creating and nurturing ecosystems abroad. It was found that for all the cases the need to develop localised ecosystems was found. However, the density and scope of such ecosystems is contingent upon the platform's business type. This means that, contrary to the suggestion by Autio & Zander (2016), the development of online reputations is not a seamless process and does not proceed in the same way for all businesses; even for Fully-digital platforms, online actions have to be supplemented by additional initiatives. The process of developing ecosystems is also influenced by the pattern of inside- and outside-platform transaction requirements. Such pattern may even lead to a focus on infra-national territorial scope, such as a city, to enable the establishment of dense and interactive ecosystems.

## **Conclusions**

This paper is intended to respond a specific issue regarding PCs' internationalisation: the relevance of PCs' business types characteristics in shaping the development of local ecosystems. While a literature stream has argued that such internationalisation is easy due to the asset-lite characteristics of PCs (Autio & Zander, 2016; Parente et al., 2018; Banalieva & Dhanaraj, 2019), another stream has underlined the existence of internationalisation barriers (Ojala et al., 2018), particularly LoO (Brouthers et al., 2016) and heterogeneity of

preferences (Hennart, 2019). By designing a taxonomy of PCs, based on the type of business performed (Fully-digital businesses, Marketplaces, and Offline locally-delivered services), and proceeding to its empirically analysis, we provided a more fine-grained perspective of PCs' internationalisation processes. Our findings are more in line with the latter view.

The research undertaken made clear that the process of creation and stimulation of local dynamic ecosystems is carried out at different levels according to the type of business performed by the PC. A key feature is the way in which the geographic expansion of the network proceeds. This is directly influenced by the mix of network interactions occurring inside and outside the platform. Although there is a variation of the efforts made in the geographic expansion of the network, market adaptation and the stimulation of platform use are relevant for any type of business. While Fully-digital platforms may be more prone to generate online reputations and to be less influenced by location features, it was found that the internationalisation of PC is neither immediate nor easy. It faces difficulties, especially when multiple localized ecosystems need to be established and nurtured.

Our findings contribute to the IB literature on PCs in four ways. The first corresponds to the development of a taxonomy of business types; this is likely to be a very important factor for understanding how different PCs manage their internationalisation processes. The second concerns the general relevance of LoO, although it is contingent upon the business type. The third contribution has to do with the fact that the process of creating and stimulating dynamic ecosystems is influenced by the pattern of interactions occurring both within and outside the platform, a feature which depends on the type of business. Finally, PCs' internationalisation, though faster than traditional internationalisation processes, is not immune to difficulties, especially when multiple, largely independent localised ecosystems need to be established and developed.

The research has two main limitations. First, it would have been desirable to have at least two cases for each business type to enable sounder conclusions. Second, the companies studied are based on a single country, low "clout" country (Portugal). Though this choice has the advantage of attenuating contextualization issues (Michailova, 2011), it somewhat constrains the application of the taxonomy.

Regardless of these limitations, this research enabled the identification of several research axes to be explored. The most obvious suggestion concerns the application of the taxonomy to companies based in other countries. Other research paths concern the following:

the influence of business types on the approaches to overcome LoO and LoF; the way how strategic partnerships for stimulating dynamic local ecosystems are developed; the application of the taxonomy to specific businesses, such as the FinTech activity; and the analysis of the influence of platform openness on the internationalisation process. We do hope that this paper might contribute to entice young IB scholars to carry out further research on this increasingly important theme.

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Table 1: A Taxonomy of Platform Business Types, and its implications for Internationalisation

Business Type	Examples	Network Interaction	Local Market Adaptation	User Network Expansion	Lock-In Effect	Location Dimension
<b>Fully-Digital Businesses</b>	<i>Facebook Instagram Pinterest YouTube</i>	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>• Key interactions in the virtual platform</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>• May occur, but not essential to the nuclear interaction</li> </ul>	<ul style="list-style-type: none"> <li>• Language adjustment to suit local markets</li> <li>• In some cases, collaboration with developers to adapt the platform (app) window</li> </ul>	<ul style="list-style-type: none"> <li>• Global expansion, given the ease of access and (mobile) connectivity <ul style="list-style-type: none"> <li>• Network expansion occurs in a viral way.</li> <li>• Provision of additional assets for each local ecosystem (developers)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Creation of large virtual communities</li> <li>• Potential for lock-in effects, the larger the user base.</li> <li>• Curation tools, according to market and platform integrity needs</li> </ul>	<ul style="list-style-type: none"> <li>• Possibly not relevant due to the low need for market adjustments and expand user network.</li> <li>• Complementarities by third parties (developers) are held in the platform</li> </ul>
<b>Marketplaces</b>	<i>Amazon E-Bay Farfetch Alibaba</i>	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>• Product marketing through the online platform</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>• Delivery of physical good outside the platform (complementary service)</li> </ul>	<ul style="list-style-type: none"> <li>• Language adapted to the market</li> <li>• Complementary services (delivery and payment) provided in the local market</li> </ul>	<ul style="list-style-type: none"> <li>• Controlled expansion, due to the need for additional services in each market (country), <ul style="list-style-type: none"> <li>• Then, faster expansion, stimulated by the development of complementarities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Trust building with customers, based on transactional reliability</li> <li>• Creation of a network of independent, highly credible partners</li> </ul>	<ul style="list-style-type: none"> <li>• More relevant when demand and/or supply are local. <ul style="list-style-type: none"> <li>• Potential for adaptation of complementary services to the specific market</li> </ul> </li> </ul>
<b>Offline locally-delivered services</b>	<i>Uber Glovo Airbnb Uniplaces</i>	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>• Service provision via the online platform</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>• Independent partner directly provides the service ("face-to-face")</li> </ul>	<ul style="list-style-type: none"> <li>• Language, content and some platform features adapted to the local market.</li> <li>• Integration of local partners to provide the service</li> </ul>	<ul style="list-style-type: none"> <li>• Gradual expansion in confined spaces (cities) to strengthen user network externalities.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of rating systems to increase users' trust. <ul style="list-style-type: none"> <li>• Service customisation to better meet users' needs in a given geographical context.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Relevant, due to users' spatial proximity.</li> <li>• May lead to gradual expansion, densifying platform and ecosystem interactions,</li> </ul>

Source: Developed by the Authors

Table 2: Empirical Application of the Taxonomy of Platform Business Types

Case	Business Type	Network Interaction	Local Market Adaptation	User Network Expansion	Lock-In Effect	Location Dimension
<b>Aptoide</b>	Exchange of information and/or content	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>Sharing apps and games from the user community.</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>Very limited, though they may occur has a result of the nuclear interaction established <i>a priori</i></li> </ul>	<ul style="list-style-type: none"> <li>Language adaptation of the app to every market (40 different languages).</li> <li>Platform content adapted to local needs, supported by the users' network, local developers and ambassadors.</li> </ul>	<ul style="list-style-type: none"> <li>Fast expansion of international users' network, due to ease of platform access and user connectivity.</li> <li>Organic growth in South America through word-of-mouth.</li> <li>Strategic growth in Southeast Asia, with the support of Chinese investors and further connections.</li> </ul>	<ul style="list-style-type: none"> <li>Strong lock-in effects, due to high levels of interaction of the user network in sharing apps and games.</li> <li>Content diversity, fostered by the collaboration of local developers.</li> <li>Curation tools to enhance the platform's reliability and quality, and security of the shared content.</li> </ul>	<ul style="list-style-type: none"> <li>Relevant, due to the market adaptations, generating high engagement with the local community.</li> <li>Partnerships in the Asian market key to achieve insiderisation and to encourage local ecosystems' development.</li> </ul>
<b>BUYIN.PT</b>	Exchange of physical goods	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>Interaction between Portuguese exporters and foreign importers.</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>The interaction is completed with the payment and delivery of the goods outside the platform.</li> </ul>	<ul style="list-style-type: none"> <li>English language (no use of other languages).</li> <li>Adaptation of complementary services to streamline transactions between users.</li> </ul>	<ul style="list-style-type: none"> <li>Controlled network expansion</li> <li>Efforts to establish partnerships with credible companies for the provision of complementary services.</li> <li>Participation in international events to create market presence and attract companies to the platform.</li> </ul>	<ul style="list-style-type: none"> <li>Intended lock-in effects: Quick ordering system, quality of service, and international projection.</li> <li>Partnerships (supplementary services) to foster platform's reliability.</li> </ul>	<ul style="list-style-type: none"> <li>Relevant to achieve scale economies and promote network externalities.</li> <li>Presence in international trade fairs and conferences to stimulate the interconnection between local ecosystems.</li> </ul>
<b>Landing.jobs</b>	Provision of services	<p><b>Inside Platform:</b></p> <ul style="list-style-type: none"> <li>Interaction between companies and candidates. The selection process begins on the platform.</li> </ul> <p><b>Outside:</b></p> <ul style="list-style-type: none"> <li>Implementation of the nuclear interaction, for conducting the final interview between the company and the candidate.</li> </ul>	<ul style="list-style-type: none"> <li>English language (the <i>lingua franca</i> for the IT community).</li> <li>Adaptation to the German market selection process.</li> </ul>	<ul style="list-style-type: none"> <li>Gradual user network expansion, following a city-by-city approach.</li> <li>Local presence of IT companies requires more effort to locate the platform ecosystem and densify market interactions.</li> </ul>	<ul style="list-style-type: none"> <li>Satisfaction and service delivery as drivers for the lock-in effects.</li> <li>On the company side, credibility and expertise in the market.</li> <li>On the candidates' side, transparency of information (salaries and relocation processes).</li> </ul>	<ul style="list-style-type: none"> <li>Essential due to the need for high spatial proximity between demand and supply sides.</li> <li>City-based approach to enable the achievement of critical mass.</li> <li>Significant efforts to develop trust and foster local ecosystems.</li> </ul>

Source: Case studies developed by the authors