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Institutional distance and the internationalization process: The case of mobile operators

Nicolai Pogrebnyakov^{a,*}, Carleen F. Maitland^b

^a Department of International Business and Management, Copenhagen Business School, Frederiksberg 2000, Denmark

^b College of Information Sciences and Technology, The Pennsylvania State University, University Park, PA 16802, United States

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ABSTRACT

This paper applies the institutional lens to the internationalization process model. It updates the concept of psychic distance in the model with a recently developed, theoretically grounded construct of institutional distance. Institutions are considered simultaneously at the national and industry levels. It also aims to understand whether the internationalization process of service firms is different from the behavior predicted by the model, which was developed for the manufacturing context. We empirically test the model using proportional hazard analysis with 130 instances of entry and presence of mobile operators in Europe and South America over 13 years. Influences of regulative, normative and cognitive institutional aspects were disaggregated and shown to have differing effect on internationalization. This suggests that institutional distance is a viable alternative to other distance measures used in the internationalization process research. The results also indicate that the internationalization behavior of this type of service firms might differ from the staged process predicted by the internationalization process model.

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1. Introduction

The significance of institutions has been highlighted in the different aspects of organizational behavior (Scott, 1995). However, the question of how much they influence market choice of internationalizing firms remains largely unanswered. This facet of the internationalization process has grown drastically in significance. Only three decades ago market choice was not an issue of prime importance, since the majority of the world was either not accessible or not significant for multinational firms. Geopolitical changes combined with economic liberalization that occurred in many countries have dramatically increased the number of available markets for entry and the number of firms in the new markets vying to expand to the outside world. Thus, most countries today are both accessible and important markets, which brings the problem of market choice to the fore for the internationalizing firm (Fink et al., 2002). And with much attention devoted to institutions, it is remarkable how few studies have statistically examined their influence on internationalization over time.

Further, the number and value of cross-border market entries has grown remarkably in the past several decades. The opening of new markets has been paralleled by a structural shift in the world economy from manufacturing to services. With 70% of the world GDP accounted by services in 2007 (World Bank, 2009), many economies today are service-based. Many of the firms in the newly opened markets are in service industries, as is the majority of foreign direct investment: two-thirds of FDI is now in services (UNCTAD, 2004), and while this sector has experienced the most drastic decline during the crisis, it is also expected to drive the recovery in FDI (UNCTAD, 2009).

Much research has been dedicated to internationalizing firms. However, many of the existing theoretical frameworks were developed for the manufacturing sector, and the shift from manufacturing to services has been reflected in research to a lesser

* Corresponding author. Tel.: +45 3815 2332; fax: +45 3815 2500.

E-mail addresses: nicolaip@cbs.dk (N. Pogrebnyakov), cmaitland@ist.psu.edu (C.F. Maitland).

extent (Coviello and Martin, 1999; Goerzen and Makino, 2007). At the same time, new understandings of the dynamics of organizational behavior have been proposed. One of such recent advances is the recognition of the role of institutions. The institutional perspective allows better understanding of how cultural beliefs, norms as well as formal rules influence the operation of organizations (Gooderham et al., 1999). The mutual influences of institutions and organizations on one another have been systematically investigated (DiMaggio and Powell, 1983). Furthermore, the separation of institutions into different levels, including world, societal, organizational and individual, have led to a recognition of the differing influences of institutions at each of these levels on organizations and other types of actors (Scott, 1995).

This paper has three objectives. First, it integrates the recently developed construct of institutional distance with insights from the internationalization process model. That construct has origins in institutional theory, which has been applied to many aspects of organizational behavior. Whether institutional distance affects behavior of internationalizing firms is as yet unclear.

Second, it contributes to statistical studies of internationalization research. Qualitative methodology in this domain allows to gain insight of motives or decision-making processes involved in internationalization. By contrast, quantitative examinations allows understanding of the “big picture” and observe larger-scale patterns of internationalization. However, statistical studies have been somewhat underrepresented in favor of qualitative studies (Barkema et al., 1996), and this paper is an attempt to bridge that gap.

Finally, it aims to enhance our understanding of internationalization of service firms. Its theoretical foundation is the internationalization process model, which was developed for the manufacturing sector and applied to services with mixed results. In particular, it asks whether firms in the mobile telecommunications industry, with its end product that has global appeal and little cross-country variation, are subject to learning experience when entering foreign markets as predicted by the model. This objective is timely and important because it addresses calls for thorough research of internationalization of service firms, of which there have been few studies (Cicic et al., 1999).

To address these objectives, we construct a Cox proportional hazards regression model using data on 130 instances of foreign entry and presence of mobile operators in 36 countries of Europe and South America over 13 years.

The study is set in the context of the mobile telecommunications industry. Mobile services have diffused across the globe faster than any previous technology (World Bank, 2008). Mobile telephony was used by over 60% of the world's population in 2008, up from a quarter five years before, and is projected to grow strongly despite the recent economic turmoil (International Telecommunications Union, 2009). However, while the use of mobile services is generally widespread, significant differences in demand and supply exist. On the demand side, countries vary in their levels of adoption (e.g., 50% in Moldova compared with 94% in France in 2008) and patterns of use (e.g., text messaging was until recently more widely used in Europe than in the United States). On the supply side, mobile operators are often national firms with investments from or in competition with foreign firms from a variety of countries. For example, in the U.S., Verizon Wireless, a domestic firm, is in fact a joint venture with the British firm Vodafone and competes against the German firm T-Mobile.

The paper is structured as follows. Section 2 reviews theoretical foundations, including the internationalization process model and institutional theory. Section 3 brings together these theoretical foundations and develops hypotheses. This is followed in Section 4 by the description of the methodology, data collection process and descriptive statistics of the data. Section 5 presents results, followed by a discussion in Section 6. Section 7 concludes the paper.

2. Background

With the number of foreign market entries by firms reaching unprecedented levels in the past decades, internationalization has received significant attention from researchers. Many theories applied to studies of internationalization consider this phenomenon as essentially static and explain differences between entry modes of firms at a specific time (Andersen, 1997). Such static theories include the internalization theory (Hymer, 1976), the eclectic paradigm (Dunning, 1980), transaction cost theory (Williamson, 1985) and a recently introduced born-global concept (Knight and Cavusgil, 1996). Most of these theories also focus predominantly on internal firm factors: firm environment is largely not considered as influencing its behavior. Furthermore, some of the more traditional theories, such as the product life cycle (Vernon, 1966), are well suited for manufacturing firms but do not reflect well the realities of today when services account for a much larger share of GDP than manufacturing, at least in developed countries (Axinn and Matthyssens, 2002).

2.1. Institutional theory and institutional distance

Institutional distance is rooted in one of the institutional traditions, that of Scott (1995). (See Peters (2005) for a review of different strands of institutional theory.) Scott views institutions as consisting of regulative, cognitive and normative components.

The *regulative* component of institutions reflects formal constraints in the form of rules and regulations that exist in the society (Scott, 1995). Examples of such formal constraints are laws, government regulations and policies that promote particular types of behavior. The *normative* component reflects norms and values that exist in a society, thus reflecting appropriate and desirable models of behavior, as well as specifying the way in which things are expected to be done (Scott, 1995). This component of institutions can thus manifest itself as a barrier to entry for operators due to the need of maintaining legitimacy in several institutional environments simultaneously, while norms are often neither externalized nor made readily available, especially to outsiders (Eden and Miller, 2004). The *cognitive* component is a reflection of shared beliefs and perceptions on what constitutes

social reality and meaning in the society (Scott, 1995). As such, this component is semantically close to culture, and Scott has referred to it as the cognitive-cultural component.

Institutions permeate several levels of analysis, from the organizational subsystem (part of an organization) up to the world system (global level) (Scott, 1995). This distinction among levels of analysis is helpful in defining and understanding different factors that may be at play at each level. Institutions also may change over time (North, 1990). Institutional change occurs in all types of societies and political systems (Streeck and Thelen, 2005), and thus should be included in institutional analysis.

This clear and understandable explication of the construct provides a sound theoretical base on which theoretical and practical advances have been made in several fields. These include the institutional context of technology (Orlikowski and Barley, 2001), technology adoption (Munir, 2002), organization science (Tempel and Walgenbach, 2007), international business (Kostova, 1997; Xu and Shenkar, 2002; Gaur and Lu, 2007), economics (Busenitz et al., 2000; Bénassy-Quéré et al., 2007) and political science (Laffan, 2001; Barnes et al., 2004). The concept of institutional distance has been used to explain foreign ownership strategy of multinational firms (Eden and Miller, 2004; Gaur and Lu, 2007), patterns of foreign direct investment (FDI) (Bénassy-Quéré et al., 2007), international trade flows (Beugelsdijk et al., 2004) and increasing homogeneity of organizational forms across countries (Tempel and Walgenbach, 2007).

Institutional distance is a measure of differences between two given countries on each of the three components (Kostova, 1996). This measure has been taken one step further and separated into national and industry-specific institutional distances (Xu and Shenkar, 2002). *National* institutional distance describes differences between institutions at the national level, for example, the regulatory quality in a country. *Industry-specific* distance refers to institutions at lower levels, such as the level of a particular industry. Institutional distance typically has been considered so far either only at the national level or only at the industry-specific level.

Mobile telecommunications, being a regulated industry, contains industry-specific institutions. These mobile-specific institutions often differ from country to country, with some of the more important differences being the existence of an independent telecommunications regulator and the method of awarding mobile spectrum licenses.

2.2. The internationalization process model

The internationalization process model takes a dynamic view of foreign expansion of the firm (Johanson and Vahlne, 1977). Firm learning is a central concept and it manifests itself in two ways: over time, the firm both expands into new markets and becomes more committed to the markets it already entered. The firm starts international expansion in countries that are relatively similar to the firm's country of origin. As the firm gains experience in operating in such somewhat familiar environments, it further expands into increasingly dissimilar countries. The model postulates that the knowledge being accumulated by the firm in the internationalization process is mostly tacit, firm-dependent and difficult to transfer outside of the firm. Thus there are few other sources to gain this knowledge except through experience, and each firm undergoes this process of entering increasingly dissimilar countries. The model also identified four stages of increasing commitment of a manufacturing firm to newly entered markets: no export activities, export via independent representatives, establishment of a sales subsidiary, establishment of production units.

While the model has received much empirical attention for manufacturing activities, it has also been applied to service industries, with mixed results. Some studies concluded that staged theories of internationalization developed in the non-service context may not apply to service firms (Bell, 1995; Knight and Cavusgil, 1996; Alexander and Myers, 2000). However, as 70% of the world GDP is produced by services, the concept of a "service industry" in fact encompasses a wide variety of different industries. Internationalization process may apply to some service industries but not to others: for example, firms in some service industries may skip particular internationalization stages (Knight and Cavusgil, 1996; Cicic et al., 1999; Coviello and Martin, 1999).

Recent research also suggests that many companies experience partial rather than full globalization (Ghemawat, 2003). Indeed, Rugman and Brain (2003) found that of the 500 largest multinational firms that collectively account for over half of the world trade, very few are pursuing a truly global strategy. Instead, they concentrate on particular regions (Elango, 2004).

At the same time, the firm's experience affects its choice of the market through psychic distance. Johanson and Vahlne described psychic distance as uncertainty of operation in the international environment caused by "the lack of market information" available to the firm (Johanson and Vahlne, 1977). Much research has come to understand the salient features of this environment that represent uncertainty for the internationalizing firm as "cultural distance" (Kogut and Singh, 1988). While culture is an important aspect of the international environment, it is not the only one. A culture-focused interpretation of Johanson and Vahlne's psychic distance reduces the firm's awareness space in internationalization to a) only cultural factors and b) country level of analysis. Both reductions have been debated, with researchers pointing out that they may unnecessarily narrow the scope of internationalization research (Brewer, 2007; O'Grady and Lane, 1996; Sousa and Bradley, 2008).

Specifically, extant research suggests that cultural distance may not be the only environmental factor affecting the internationalization process. Congruence of the governance infrastructure and legislation between the home and host country may increase investment between these countries (Bénassy-Quéré et al., 2007). Moreover, harmonization of legislation among several countries has been shown to positively affect "investment spillovers" by outside investors (Barrell and Pain, 1999), lending support to the learning-based behavior predicted by the internationalization process model. Further, differences in norms of the home and the host environments, which reflect perceived behavior, may affect international strategy, market selection and the choice of the entry mode (Xu and Shenkar, 2002). Thus the influence of factors other than culture on internationalization behavior has been well documented.

Further, recent theoretical and empirical developments make it clear that the environment in which the internationalizing firm operates is multi-level and complex. Perceptions of individual decision-makers within firms may significantly affect foreign operations, and do so independently of the national environment (Hofstede, 1994). In many cases, the influence of intra-organizational logic or international industry standards on internationalization behavior is more pronounced than national factors (Kostova et al., 2008). Differences in national cultures are of lesser importance for products with global appeal (Bird and Stevens, 2003). These findings suggest that while the national level is important, considering it alone in the studies of internationalization leaves out other important levels of environmental opportunities, constraints and pressures faced by international firms.

Thus, there are inconsistencies between the definition of psychic distance and its theoretical conceptualization and empirical applications within contemporary internationalization theory.

2.3. Summary

Several gaps exist in the two bodies of literature that are our theoretical foundation. First, the internationalization process model included psychic distance in its original formulation. While this distance construct is at the core of the model, it has been loosely operationalized and many studies relied on well-defined cultural distance instead. The recently introduced construct of institutional distance includes other factors beyond culture and operates at several levels of analysis, thus being closer to the original description of psychic distance. However, it has not yet been applied to studies of the internationalization process.¹ Second, institutional distance has primarily been considered only at the national or only at the industry-specific levels. Few models have included institutions at both levels. Third, the internationalization process model was developed and extensively tested for manufacturing industries. The results of its application to service industries have so far been ambiguous, and qualitative methodology has prevailed over statistical models.

3. Theoretical model

This study addresses the gaps in the literature identified in the previous section. We construct a model of international entry of service firms that includes previous experience as well as national and industry-specific institutions.

3.1. Model of mobile operator internationalization

We draw on two major theoretical perspectives to determine the role of institutions in internationalization: the internationalization process model and institutional distance. In doing so, we substitute the psychic distance construct in the internationalization process model with the recently developed institutional distance. In addition to this update, our goal is also to contribute to the nascent literature on internationalization of service firms.

The model of internationalization is constructed for the entry of mobile operators. We build on the internationalization process model of the firm to investigate the role of previous experience (*EXPERIENCE*). The model incorporates institutional distance and considers institutions at two levels: country and industry. We use the labels national and industry-specific institutional distance, respectively. All three components of national institutional distance are included: regulative (*NATIONAL_REGULATIVE*), normative (*NATIONAL_NORMATIVE*) and cognitive (*NATIONAL_COGNITIVE*). Our industry-specific distance consists of the regulative component that includes the regulatory (*INDUSTRY_REGULATIVE_1*) and licensing (*INDUSTRY_REGULATIVE_2*) items. Consideration of industry-specific factors is limited to the regulative component because of data availability and the need to include the most relevant constructs in the model.

Consistent with the regional argument (Rugman and Brain, 2003), we also test the influence of regional factors by considering the role of the regional telecommunications regulator (*REGIONAL_REGULATOR*). We control for several characteristics of the host country: wealth expressed as GDP per capita² (*GDP_CAP*), the amount of FDI per capita in the country (*FDI_CAP*) and the level of technology adoption operationalized as the proportion of population with mobile phones (*MOBILE_ADOPTION*).

As such this model focuses solely on the factors influencing entry, irrespective of the mode of entry. Data sources in many instances did not provide details for the mode of entry. Thus we chose to not differentiate among modes of entry instead of significantly reducing the number of entry instances in the data set. However, our model does account for possible institutional changes within the timeframe under consideration.

3.2. Hypotheses

One of the goals of this study is to test the relevance of institutional distance in the firm's internationalization process. We consider institutional distance at two levels: national and industry-specific. The internationalization process model suggests that

¹ We chose to test the applicability of institutional distance to the internationalization process model in the context of service industries. However, nothing in our analysis prevents this distance to be applied to manufacturing as well.

² Considering wealth at the country level is a necessary approximation, since within each country there are variations in wealth between different regions or between rural and urban areas. However, in mobile telecommunications in particular operating licenses are predominantly awarded for the whole country rather than for particular regions (Brazil has been a prominent exception until mid-2000s). Additionally, using country-level data on wealth is customary in internationalization studies (Ojala and Tyrväinen, 2007).

firms internationalize to countries with successively greater psychic distance from their home country. Applying this logic to the concept of institutional distance, it can be expected that operators internationalize to countries with successively greater *institutional* distance from their home country. To test this assumption and to identify the influence of national and industry-specific institutional distance on the internationalization process, we hypothesize:

H1. *National institutional distance* between the mobile operator's home and host countries is negatively related to the timing of operator entry into the host country.

H2. *Industry-specific institutional distance* between the operator's home and host countries is negatively related to the timing of entry into the host country.

A necessary factor in the internationalization process is past experience of the firm. It can be expected that many of the countries that are institutionally close to the firm's home country are located in the same region. To test the importance of regional experience, we hypothesize:

H3. Past *experience* in other countries in the same region is positively associated with the timing of operator entry into the country.

Another important factor specific to the mobile telecommunications industry is the regulator. In recent years many regions (e.g., European Union, South African Development Community, Mercosur) have established telecommunications regulators at the regional level. These regulators are important because depending on the level of regional integration, the regional regulator may have more power than the national ones. Thus we include regional-level regulators into the model and hypothesize:

H4. Presence of a regional-level *telecommunications regulator* is positively associated with the timing of operator entry in a member country of the region.

4. Methodology and data

Our hypotheses are tested with a dataset that covers the period of 1995–2007 and includes 130 instances of entry and presence of mobile operators in 36 countries of Europe and South America. Following previous research on mobile operators (Gerpott and Jakopin, 2008), we included those operators that had entries or presence in the 36 host countries in the selected timeframe.

The time span for this study was chosen for several reasons. First, many changes in the approach to telecom regulation caused by liberalization and privatization in the sector have been occurring during this time. These changes include the creation of independent regulatory authorities and the adoption of more market-oriented licensing methods. Second, it is the period when mobile telephony was being actively adopted across the world, which was paralleled by a significant increase in international expansion by operators. Finally, some independent variables, including data on the regulative component of institutions, are only available from the middle of 1990s.³

The two regions were selected because they are similar in some respects while disparate in others, which allows to draw comparisons within and between regions. Europe displays a higher degree of homogeneity on the regulative component of institutional distance, while South America is more homogenous culturally and with respect to methods used to allocate licenses. Including these two regions also allows enhancing the external validity of the results: most countries in South America are classified as developing, while most European countries are developed.

4.1. Survival analysis

As internationalization is a process that occurs over time, we use survival analysis to test the effect of independent variables on time until operator entry into a country.

We use the semi-parametric Cox proportional hazard model (Cox, 1972). It is semi-parametric in the sense that there is no need to specify the baseline hazard function, which specifies a particular functional form of the time to event. At the same time, this model allows to consider the effect of parameters, or independent variables, on the time to event. The baseline hazard need not be specified to interpret the results as well (Lee, 1992). The Cox model has been used in studies of investment mode strategies in international business (Chung and Beamish, 2005), as well as technology diffusion in mobile telecom and patterns of telecom demand (Kauffman and Techatassanasoontorn, 2005).

The event under consideration is the entry of an operator into a country. The hazard function, or the *hazard rate*, describes the instantaneous probability that operator entry into the country will occur at a particular time $t + \Delta t$ given that it has not occurred before time t . The inverse of the hazard rate can be interpreted as the expected time until mobile operator entry occurs. For example, if a hazard of entry into a particular host country for an operator is 0.1 (with time measured in years), then operator entry into this country is expected to occur in 10 (1/0.1) years (Kauffman and Techatassanasoontorn, 2005). The Cox model estimates the hazard rate for entry into country x_i in the form $h(t | x_i) = h_0(t) \exp(x_i \beta_x)$, where x_i are the independent variables and coefficients β_x are to be estimated from data. h_0 is the baseline hazard function and is left unspecified. Leaving h_0 unspecified requires that the ratio of hazard rates of two subjects x_i and x_j is constant over time. For example, if it is assumed that the hazard of

³ Some companies have had foreign entries outside of the time span under consideration. In particular, many mobile operators have their origins in state-owned telecommunication companies, which entered foreign markets before 1995. Mobile operators also had entries before 1995. However, our methodology is robust to such truncation of the sample, as explained in the description of survival analysis.

operator entry into a country with an independent telecom regulator is twice as high as entry into a country without a regulator, this ratio stays constant over time. This *proportional hazard assumption* has to be tested after the model is estimated.

A common feature of data used in survival analysis is that they may contain censored or truncated observations: some observations are known to have occurred before or after a certain point in time but this point is unknown (censoring), or some observations are excluded from the sample because they do not experience the event of interest before a particular time (truncation) (Klein and Moeschberger, 2003). We included censored observations in the form of presence of operators in countries under consideration where entries occurred before the considered timeframe. Thus, this method is robust to the fact that some operator entries in Europe and South America have occurred or will occur outside the time period under consideration.

4.2. Data

We built a dataset of mobile operator entries for this study. The dependent variable is the instance of entry of operators into foreign countries. It is a binary variable with 0 indicating non-presence and 1 indicating presence of an operator in a country. Data for operator entry were collected in a two-stage process to ensure reliability. At the first stage, data on operator presence and year of entry were collected from operators' websites, general and specialized telecom news sources (e.g., BBC News, telegeography.com, etc.) and industry association websites (e.g., GSM Association, CDMA Development Group). At the second stage, these data were verified and expanded using consistent search queries on LexisNexis Academic, a news aggregator service that includes data from such sources as Financial Times, Wall Street Journal, Agence France-Presse, The New York Times, AFX News and Business Wire.

Data for the independent variables came from several sources. The regulative component of national institutional distance was operationalized by the Regulatory Quality component of the World Governance Indicators. This component measures the amount of regulation, burden imposed by excessive regulation as well as the existence of market-unfriendly policies (Kaufmann et al., 2004). The normative component was accounted for by the amount of cross-border mergers and acquisitions (M&A) in a country as percentage of GDP.⁴ These data came from the United Nations Conference on Trade and Development (UNCTAD) statistics database. The cognitive-cultural component was constructed as a combination of linguistic and religious affiliation of countries.⁵ Data on languages spoken in a country were obtained from the Ethnologue database (Gordon, 2005), and data on religious affiliation were drawn from "L'État des religions dans le monde" (Clévenot, 1987).

Data on mobile subscribers came from the International Telecommunications Union. Data for wealth, which we operationalize as GDP per capita, are from the World Economic Outlook Database (International Monetary Fund, 2007), and M&A data are from the UNCTAD database. Data on membership in regional telecommunications regulators were obtained from the websites of these regulators: the European Regulators Group (ERG), which was established in 2002, and Regulatel in South America, established in 1998.

4.3. The cognitive-cultural component of institutional distance

In this study, the cognitive-cultural component of institutional distance is operationalized as the differences in languages and religions between countries.⁶ The smaller the value of the cognitive-cultural distance, the more similar the countries are.

The cognitive-cultural distance d_{ij} was calculated using the following formula:

$$d_{ij} = \sum_{k \in \{L_{ij}; R_{ij}\}} (w_{ik} - w_{jk}) \cdot w_{jk} \quad (w_{ik} \geq w_{jk}),$$

where L_{ij} is a set of languages common between countries i and j (i.e., languages spoken in both of these countries); R_{ij} is a set of common religions; w_{ik} is the percentage of speakers of language or adherents of religion k in country i ; similarly, w_{jk} is the percentage of speakers of this language or adherents of this religion in country j .⁷

Smaller values of d_{ij} indicate greater similarity between the two countries. No weighting was applied to language and religion and they were treated with equal significance.

The rationale for the formula above is as follows. $(w_{ik} - w_{jk})$ is the difference between proportionate speakers of the language or adherents to the religion in the two countries. It shows how different these countries are (i.e., the largest the value, the more

⁴ The amount of cross-border M&A in a country indicates the strength of a corporate governance regime. It has been shown that M&A activity volume is higher in countries where accounting standards are higher and shareholder protection is stronger (Rossi and Volpin, 2006). This measure therefore may serve as a proxy for corporate norms and values, indicating, among other, the integrity of business conduct in a given country, which reflects norms and values of a country's business environment well.

⁵ Linguistic similarities are an indication of a common relationship between two countries, currently or in the past (Matei, 2006), which in turn is an indicator of differences in values. Furthermore, people's religious affiliations capture attitudes towards work ethic, conservatism as well as individuality vs. collectivism, among others, which have been used in various operationalizations of cultural dimensions (Norris and Inglehart, 2004). An additional benefit of using linguistic and cultural variables compared to cultural dimensions constructed from surveys is that they are readily available and can be used in studies of the widest geographic scope. It is also important to note that institutional distance captures differences between countries per se, and qualitative descriptions of these differences are not pursued in this research.

⁶ We did not use an existing measure (such as Kogut and Singh's (1988) cultural distance) because none of the established cultural distance measures cover all countries in our data set.

⁷ Linguistic and religious minorities that represent less than 5% of the country population were not included.

Table 1

Mobile operators included in the analysis, number of their entries into Europe and South America and presence in the rest of the world.

Mobile operator	Home country	Entries in Europe ^a	Entries in South America ^a	Total Europe and South America	Presence in the rest of the world ^b
América Móvil	Mexico	0	8	8	3
Cosmote	Greece	2	0	2	5
Deutsche Telekom	Germany	7	0	7	5
France Télécom	France	14	3	17	17
Hutchinson Whampoa	Hong Kong	8	0	8	10
KPN	Netherlands	5	0	5	0
Portugal Telecom	Portugal	0	1	1	7
Radiolinja	Finland	1	0	1	0
TDC	Denmark	10	0	10	1
Telecom Italia	Italy	4	8	12	1
Telefónica	Spain	9	8	17	6
Telekom Austria	Austria	2	0	2	0
Telenor	Norway	8	0	8	3
TeliaSonera	Sweden	12	2	14	7
Vodafone	UK	18	0	18	11
Total		100	30	130	76

^a Note: excluding presence in the home country. Source: own calculations.^b Note: excluding entries in Europe and South America. Source: derived from Whalley and Curwen (2006).

different are the countries). The expression $(w_{ik} - w_{jk})$ is multiplied by the smaller of the two percentages, w_{jk} , to adjust for the significance of the language or religion in the country's linguistic or religious composition. This also helps prevent over-inflation of the distance measure when w_{ik} is very large (close to 1) and w_{jk} is very small (close to 0), in other words, when a language or a religion is very widespread in one country and very limited but present in the other.

4.4. Descriptive statistics

The data used for the analysis describe 130 instances of entry of 15 mobile operators from 15 home countries into 36 host countries of Europe and South America. Table 1 shows entries of these operators in Europe and South America and their presence in the rest of the world.

Of these 15 mobile operators, 12 have entered markets not considered in this study and thus have experience in a wide range of contexts. The overlap between European and South American activities is relatively low, with only four operators having operations in both regions. For example, América Móvil from Mexico targets almost exclusively South American countries, while Deutsche Telekom has operations throughout Europe but none in South America. Telecom Italia and France Télécom are examples of mobile carriers operating in both regions, with the latter having a substantial number of interests in other parts of the world as well.

5. Results

From the internationalization process model it follows that the effect of experience and institutional distance on the firm should become weaker with continuing internationalization. We included a squared term of previous entries in the region ($EXPERIENCE^2$), or the effect of previous experience on itself, into the model to test its influence on entry.

5.1. Pre-estimation test for multicollinearity

Before estimating the model, we performed a test for multicollinearity. Multicollinearity refers to a situation when two or more independent variables are correlated, which can lead to large variances of parameters of collinear variables (Kennedy, 2003). We tested for multicollinearity by calculating pairwise correlation coefficients between independent variables, with values of the coefficients over 0.7 indicating high correlation (Kennedy, 2003). This test revealed no multicollinearity in our model.

5.2. Survival analysis results and hypothesis testing

The results of estimating the proportional hazard model is shown in Table 2.

Overall, the model is significant (likelihood ratio $\chi^2 = 105.83$, $p < 0.001$). Of the individual variables, the regulative component of national institutional distance ($NATIONAL_REGULATIVE$) is not significant. Conversely, the normative ($NATIONAL_NORMATIVE$) and cognitive ($NATIONAL_COGNITIVE$) components are significant. $NATIONAL_NORMATIVE$ has a coefficient of 0.209 and a hazard ratio of 1.232. Thus, an increase in the normative distance between the home and host countries of 10% increases the hazard rate of operator entry by 2.1% ($[1 - \exp(0.1 \times 0.209)] \times 100\%$). For example, in 2001 the normative distance between Austria and Switzerland was approximately 10% higher than between Austria and Sweden. This indicates that, all else being equal, an operator from Austria has a 2.1% higher hazard of entering Switzerland than Sweden in that year. Likewise, an increase of 10% in cognitive

Table 2

Proportional hazard model of influence of institutional, regional and country-level factors on operator entry.

Variable	Coefficient	Std. error	Hazard ratio
NATIONAL_REGULATIVE	0.014	0.285	1.014
NATIONAL_NORMATIVE	0.209*	0.095	1.232*
NATIONAL_COGNITIVE	−1.157***	0.306	0.314***
INDUSTRY_REGULATIVE_1	−0.503*	0.248	0.605*
INDUSTRY_REGULATIVE_2	−0.474*	0.198	0.622*
EXPERIENCE	0.524***	0.085	1.686***
EXPERIENCE ²	−0.026***	0.006	0.974***
FDI_CAP	0.174	0.133	1.190
GDP_CAP	−1.12e-5	1.49e-5	1.000
MOBILE_ADOPTION	−0.003	0.009	0.997
REGIONAL_REGULATOR	0.075	0.414	1.077

Notes: 130 observations, 15 home countries, 36 host countries. Log likelihood −493.046. Likelihood ratio $\chi^2 = 105.83$, significance $p < 0.001$. Bayesian Information Criterion (BIC) 1078.271.

* $p < 0.05$.

*** $p < 0.001$.

distance (*INST_COGN*) decreases the hazard rate by 10.9%. These results lead to partial support of H1: national cognitive distance between the home and the host countries is negatively related to operator entry, while normative distance is positively related to entry and the effect of regulative distance is not significant.

Both regulative components of the *industry-specific institutional distance* are significant, and H2 is fully supported. Similarity on the independent regulator variable, *INDUSTRY_REGULATIVE_1* (either a regulator exists in both the home and the host country or does not exist in both) increases the hazard rate of entry by 40%. A one-unit increase in the similarity of the licensing method, *INDUSTRY_REGULATIVE_2*, increases the hazard by 37%.

H3, which tests the effect of *previous experience* on operator entry, is supported. Operator's experience in the region, or the number of previous investments, exhibits an inverted U-shaped relationship with entry into another country of the same region, as indicated by the significant positive effect of the linear term, *EXPERIENCE* ($p < 0.001$), and the significant negative effect of the quadratic term, *EXPERIENCE*² ($p < 0.001$). The hazard rate of operator entry increases, reaches its maximum at 10 (0.5238/[2 × 0.026]) previous entries in the region and then decreases. Four operators included in the analysis have 10 or more entries in Europe: France Télécom, TDC, TeliaSonera and Vodafone, and each has operations outside the region.

We found no support for H4 regarding the influence of a *regional-level telecom authority* (*REGIONAL_REGULATOR*) on operator entry. Further, the effect of control variables was not significant, as indicated by the statistically insignificant hazard ratios of *FDI_CAP*, *GDP_CAP* and *MOBILE_ADOPTION*.

5.3. Post-estimation tests: proportional hazard assumption, goodness of fit and predictive power

All post-estimation tests yielded positive results.

We checked the *proportional hazard assumption* for our model using the test of scaled Schoenfeld residuals of time-dependent independent variables (Grambsch and Therneau, 2003). It tests the null hypothesis that the slope of generalized linear regression of scaled Schoenfeld residuals has a zero slope, and rejection of the null hypothesis means that the proportional hazard assumption does not hold. The results of the test are shown in Table 3.

Because the test results for all variables have an insignificant p -value, there is not enough evidence to reject the null hypothesis. Thus, the proportional hazard assumption is not violated.

We tested the *goodness of fit* of the model using Cox–Snell residuals (Cox and Snell, 1968). If a model has a good fit, Cox–Snell residuals form a straight line at a 45° angle, perhaps with certain variability in the right-hand tail. Such pattern of Cox–Snell residuals was observed, which demonstrated an adequate fit of the model to the data.

Table 3

Results of the test of proportional hazards assumption.

Variable	ρ	χ^2	p -value
NATIONAL_REGULATIVE	−0.102	0.99	0.320
NATIONAL_NORMATIVE	0.059	0.34	0.562
NATIONAL_COGNITIVE	−0.082	0.63	0.428
INDUSTRY_REGULATIVE_1	0.078	0.55	0.457
INDUSTRY_REGULATIVE_2	0.125	1.50	0.220
EXPERIENCE	−0.124	1.29	0.256
FDI_CAP	−0.089	0.82	0.364
GDP_CAP	0.137	1.46	0.227
MOBILE_ADOPTION	−0.078	0.70	0.402
REGIONAL_REGULATOR	−0.026	0.06	0.805

We also performed a test of the model's *predictive power*. We did this by splitting the sample into two groups: one for years 1995–2006 and the other for year 2007. We then calculated the predicted value of the hazard ratio for 2007 and compared the predicted values with actual values. The comparison was performed with Theil inequality coefficient (Theil, 1958). The value of the coefficient of 0 indicates perfect predictions and 1 indicates that actual and predicted values are negatively proportional (Leuthold, 1975). The value of Theil coefficient was $U = 0.08$. This indicates that the difference between predicted and actual outcomes is small, and thus the model possesses a satisfactory predictive power (Frey and Schneider, 1981).

5.4. Robustness checks

We performed four robustness checks of the results obtained from the base model in Table 2. First, we used an alternative operationalization of the regulative and normative components of national institutional distance from the Global Competitiveness Report (World Economic Forum, 2006). Second, we checked whether cultural distance only is a better explanation than the institutional distance approach. Third, we estimated the model with a one-year lag on all independent variables. Fourth, we used the rate of change in fixed telecom lines instead of mobile adoption data to account for telecom industry characteristics.

The base model and the four alternative models are not nested: they all have the same set of variables but differ in the data used for operationalizing these variables. Therefore, to compare the base model with alternatives we used the difference in models' Bayesian Information Criterion, BIC (Schwarz, 1978). A difference in BICs greater than 10 indicates strong evidence towards selecting the model with the smaller BIC (Raftery, 1995). Because BIC is calculated based on the size of the sample, we adjusted the size of sample used to calculate the base model according to the sample size of each of the alternative models.

The results indicate that the base model in Table 2 is superior to all four alternative models.⁸ The base model has the smallest BIC, and the differences between the base model and all four alternative models are greater than 10.

6. Discussion

6.1. Internationalization of mobile operators

We found support for some of the hypotheses that relate institutional distance with the time to entry of the operator. Some components of national institutional distance exhibit the hypothesized relationship while others do not. Specifically, only cognitive distance has the hypothesized negative effect on the time to entry. The effect of regulative distance is not significant, and the effect of normative distance is positive, the opposite of the hypothesized. The effect of industry-specific institutional distance is consistent with the hypothesized: its two components are significant and negative.

The effect of the *cognitive-cultural* component of national institutional distance is significant and negative: entry is more likely to occur into host countries that are culturally closer to the operator's home country. This finding agrees with previous studies that found a significant relationship between smaller cultural distance and firm entry (Barkema et al., 1996). The significance of cognitive-cultural distance may suggest that culture-based behavior in internationalization is more important than region-based behavior. In regions with small cognitive distance between the countries (such as South America) pursuing a purely regional strategy is justified. However, when cognitive distances within the region are large (such as in Europe), a combination of a regional and a cognitive distance-based approach may be used by the operator. For example, Telefónica from Spain is active in both Europe and South America, and Spain has a low cognitive distance with South American countries.

By contrast, the national *regulatory* environment of a country does not influence operator entry. This is counterweighted by the significant and negative effect of the industry-specific institutional distance measures: entry is more likely to occur into host countries with small differences in mobile telecom-specific regulations. This may indicate a need for a more nuanced approach to the role of regulation in internationalization behavior. Of particular interest is the importance of national institutional similarities between countries when regulated industries, such as mobile telecom, are concerned. Our results suggest that the quality and the burden of mobile industry-specific regulation may be of higher importance to operators than the quality of overall regulation.

The (national) *normative* component was found to have a significant and positive effect on internationalization. Operators are more likely to enter host countries with a different structure of business norms and values than that of their home country. This result, although not hypothesized, may be a consequence of the "psychic distance paradox" (O'Grady and Lane, 1996). It has been noted in the context of the internationalization process model that firms that enter psychically close countries may underestimate the amount of adjustment they would need to undergo in these countries. This would happen precisely because of this perceived closeness, which turns out to be deceptive. Our result may also be interpreted in that light and suggest that firms have a skewed understanding of the normative environment of their host country. Alternatively, firms may conscientiously pursue entry into countries where norms are different than their own in the hope that this would give them competitive advantage. For example, if the firm's home country is tolerant to risk-taking, entering a country with low tolerance for risk-taking may give the firm advantage over local rivals.

⁸ The model with cultural distance only was tested using both *NATIONAL_REGULATIVE* and Kogut and Singh's (1988) cultural distance metric. The alternative model with *NATIONAL_COGNITIVE* is nested, and we performed a likelihood ratio test and a BIC-based test, both of which demonstrated the superiority of the base model ($p < 0.001$ in the LR test). Since Hofstede's (1980) data on which Kogut and Singh's measure is based is not available for all countries in our sample, we tested the base model and the alternative model only for the countries available in Hofstede's data set.

The effect of *experience* on entry is positive and significant. Generally, this lends support to studies of internationalization in service industries that highlight the importance of experience (Goerzen and Makino, 2007). However, our results also add an interesting detail. We found that previous experience in the region has an inverse U-shaped relationship with operator entry. Thus, there are diminishing returns to experience: up to a certain level, experience in the region has a positive effect on the entry of the operator into a country of the region. After this level of experience has been reached, further experience does not significantly affect the likelihood of operator entry in the countries of the region.⁹ This is generally consistent with the argument on regionalization, rather than globalization of business (Ghemawat, 2003; Rugman and Brain, 2003). The difference and the importance of the result in this paper, however, is that it identifies that the impact of the region starts to decline after 10 entries in that region.

6.2. Institutional distance and the internationalization process

The consideration of institutional distance in the internationalization context reflects current understanding of institutions as a major and fundamental factor affecting organizational behavior (Scott, 1995). This paper addresses two inconsistencies between the definition of psychic distance on one hand and the practice of reducing it cultural distance on the other. First, institutional distance brings into the analysis a wider range of external factors, in addition to culture, which may affect the internationalization process. Second, institutional distance draws attention to the multi-level and complex environment in which international firms operate. On both counts institutional distance fits well within current debates on the role of psychic distance and developments in the institutional realm (Kostova et al., 2008; Sousa and Bradley, 2008). The need to “go beyond culture” is also due to the much wider diversity of institutional features of countries available for firm entry caused by the massive opening of new markets in the past two decades (Flores and Aguilera, 2007).

The recently developed construct of institutional distance answers these calls. It is close to Johanson and Vahlne's (1977) description of psychic distance, is theoretically grounded (Kostova, 1997; Xu, 2001) and has been thoroughly tested (Busenitz et al., 2000). This suggests that institutional distance is a valid substitute for the psychic and cultural distance in studies of the internationalization process.

Institutional distance is a theoretically grounded alternative to the constructs currently used as operationalizations of psychic distance. The latter was defined as “the sum of factors preventing the flow of information from and to the market” (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977), with examples including “language, education, business practices, culture, and industrial development” (Johanson and Vahlne, 1977). Cultural distance, which is often used as an operationalization of psychic distance, reflects this construct only partially, as it captures only the cultural element of Johanson and Vahlne's definition. By contrast, institutional distance includes regulations, norms, business practices as well as culture. Thus it is conceptually closer to the original formulation of psychic distance than cultural distance, while being better operationalized and grounded in recent theoretical developments than psychic distance.

The three pillars of institutional distance influence internationalization in several ways. The regulative component of institutions may act as a tangible and explicit barrier preventing the flow of information. Specific regulatory practices may ban or, conversely, facilitate or even mandate (e.g., the Sarbanes–Oxley Act) disclosure of information by firms to the market. Because of its explicit nature, this component may be quickly learned by the firm or outsourced to a local knowledge repository, such as a local law firm. By contrast, the normative component includes practices and constraints that are based on values. Since such constraints are often tacit, the firm has to internalize them through a learning process through its own experience or the behavior of others. For example, perceptions of environmental friendliness vary widely across countries. Firm practices that would be of significant public concern in some countries may go largely unnoticed in others. Thus firms that correctly interpret and act on normative signals from the market may obtain significant competitive advantage. The cognitive-cultural component refers to a large extent to national culture as well as language. Degrees of formality, work ethic, layers of language all represent potential barriers that may hinder a firm's understanding of the local environment. Some aspects of the cognitive component may be learned rather quickly (“we work 7 h a day and take 5-week-long vacations in this country”); others may require a “cultural interpreter” or longer adaptation. For example, what would appear as naturally respectful and confrontation-avoiding behavior by the Chinese may be interpreted as intentionally evasive and misleading by Westerners (O'Keefe and O'Keefe, 1997).

Our results highlight the differing effects of institutional distance at multiple levels of analysis. Our model included the regulative pillar of institutional distance simultaneously at the national and industry levels. The results suggest that national difference does not affect internationalization in this industry, while industry difference does. The national level approach considers the distance to be a generic construct not anchored in any particular industrial context (Linders et al., 2005), while the industry level one considers institutional distance to be specific to a particular domain (Busenitz et al., 2000). Given that mobile telecommunications are a regulated industry, this result suggests that internationalization may in some instances be influenced more by industry-specific than by general national institutional factors.

This fits well within the perspective of the multinational firm immersed in and affected by an environment that spans multiple levels (Kostova et al., 2008). It stands to reason that the different levels of the environment affect, among other, internationalization behavior. The logic of the internationalization process suggests expansion into increasingly less familiar

⁹ An alternative explanation is that when this inflection point of experience has been reached, there are few countries in the region left to enter and the service provider cannot but internationalize outside of the region. However, at 10, this inflection point is fewer than 26 countries that were considered in Europe, and no service provider has a European-wide or South America-wide presence. Thus, this explanation may be partial at best.

countries. If this logic is applied to the multi-level view of the environment, it suggests that the firm will expand into increasingly less familiar environments. These do not necessarily have to be national-level environments (Bird and Stevens, 2003). For example, internationalization decisions of a firm may be more affected by standards in the industry or by the need to efficiently manage its subsidiary network than by national regulations. In the particular case of mobile communications, the regulated nature of the industry may lead firms to emphasize industry-level regulations over general national ones.

Further, our results show diminishing returns to experience and indicate that operators follow the learning curve suggested by the internationalization process model. We also found that previous experience has a more significant impact on operator entry at the early stages of internationalization, and thus the regionalization approach is more useful for explaining operator internationalization at the beginning of the internationalization process. By contrast, the institutional distance approach is more applicable for explaining internationalization at later stages, since the effect of institutional distance on entry does not change with experience.

6.3. Internationalization of service vs. manufacturing firms

Internationalization of service firms has been thoroughly studied in the past decades. However, different studies often arrive at diametrically opposite results regarding the process and the outcomes of internationalization (Coviello and Munro, 1997; Alexander and Myers, 2000). Thus, the question of whether the internationalization process model applies to service industries remains open.

One of the reasons for such variety in research outcomes may lie in the emphasis on “service industries” as opposed to manufacturing industries. This leads to repeated attempts to arrive at theories that would either explain internationalization of any service industry (similarly to internationalization of any manufacturing industry) or be agnostic about the nature of the service. However, with approximately 70% of world GDP in 2007 generated by service industries (World Bank, 2009), the juxtaposition of services and manufacturing may be misleading. With services occupying such a large proportion of the world economy, one may wonder whether it would be more relevant to focus on distinctions among service industries than between services and manufacturing.

Despite the large size of services, there have been only a limited number of studies that would generalize beyond individual service industries, but not to the point of treating all of them equally as simply “services”. Most of these studies have been done in the marketing literature (Lovell, 1983; Bowen, 1990; Silvestro et al., 1992; Cicic et al., 1999) and thus emphasize the individual level of analysis. Still, some of the characteristics of services identified in these studies (e.g., exportability, degree of customization, location dependence) are transferable to the organizational level and are suitable for internationalization studies. Clearly, more work is needed to differentiate between the types of service industries in their relation to the internationalization process (La et al., 2005).

Furthermore, the application of the internationalization process model to service industries yields interesting implications for firm learning. In the original, manufacturing-oriented formulation of the model, learning manifests itself in two ways: increasing, staged commitment to countries that the firm already entered and entry into more psychically distant countries. For service firms, the stages of the internationalization process might not be relevant. A firm offering non-exportable services is unlikely to undergo the four commitment stages, because the service is *always* locally produced (Cicic et al., 1999). It cannot be gradually transitioned from being “exported” to being “locally produced,” as may be the case in manufacturing. Thus the firm is fully committed to the market from day one. (The firm may increase the scope of its local operations over time, but in that regard it does not differ from any other local firm trying to expand its market share, a process unrelated to internationalization.)

As an example, consider the entry of mobile operators into a country. Entry of an operator is usually conditioned upon obtaining a spectrum license, without which it cannot provide service. Most countries offer their spectrum licenses in a competitive procedure, and usually there are more participating companies than licenses. Operators that won the licenses proceed to rolling out the mobile network and starting service provision. Operators that did not obtain a license, in effect, do not enter the country at all, despite their participation in the competition for a license.

6.4. Implications for managers

Managers that formulate and implement strategy at service firms and particularly mobile operators may find our results useful from several perspectives: the applicability of the experience of manufacturing firms to service firms; the validity of assumptions built into the firm's international strategy and the potential advantage resulting from a critical assessment of these assumptions.

Our results suggest that not all internationalization experience of manufacturing firms can be directly applied to service firms. In particular, the recommendation to first establish an importing subsidiary before starting manufacturing in a new country does not apply to services. Instead, the firm should quickly familiarize itself with the aspects of the local market that affect its core processes and competencies. In the case of mobile telecommunications, we found that differences in industry regulations and culture appear to affect operator behavior while national regulations do not. One of the reasons may be that since for mobile operators national regulations generally are tangential to their core operations, dealing with them may be to a considerable degree outsourced to a local law firm. By contrast, effectively navigating and even influencing regulations governing the telecommunications industry can be a source of competitive advantage for operators. Similarly, the use of mobile services and consequently the structure of mobile service proposition are considerably affected by local culture. Thus foreign firms that better

understand the intricacies of both industry regulations and local culture may be better positioned to reap the benefits of the new market.

Further, we bring attention to the assumptions mobile operators make – conscientiously or not – in their strategy. Individual operators may analyze their strategy in light of our findings and assess any assumptions that are incorporated in them. For example, a firm may give undue preference to the familiarity of national regulations or wealth of a potential entry country rather than its culture or the favorability of its industry regulations. Critically assessing such assumptions may lead to uncovering new, previously unconsidered but potentially more beneficial markets.

Competitive advantage may also be gained by bucking the trend. Results of this research reflect overall trends and patterns of internationalization undertaken by mobile operators. Mobile operators that are courageous enough to enter radically different countries from the cultural or regulatory point of view may reap significant advantages, boosted by their experience elsewhere. For example, Telenor of Norway owns a majority stake in grameenphone, the largest and a highly profitable mobile operator in Bangladesh.

6.5. Summary

The introduction of institutional distance into the research of internationalization process has been theoretically beneficial. This concept formally differentiates among the factors that hinder or facilitate information flows, as proposed by the original formulation of the internationalization process model in the psychic distance construct (Johanson and Vahlne, 1977). Our results indicate that different components of institutions have varying effect on internationalization. Institutional differences may also have broader implications for firm behavior in the host market, and may be of significant practical guidance to internationalizing firms. Thus we suggest that institutional distance be considered in future studies of internationalization.

We combined the national and industry-specific conceptualizations of institutional distance. Different levels of institutions may have different effect on internationalization: e.g., in our study the influence of national regulative institutional distance has not been significant, while the influence of industry-specific one has been so. Thus considering institutions at several levels may bring clarity and nuance to research findings.

Finally, our results suggest that the internationalization process model, which was developed for manufacturing industries, can also be applied to at least some service industries. We focused on mobile telecommunications, where differences between countries from the point of view of provision of service are not large. Still, we found that some components of institutions exert significant influence over internationalization of firms in this industry. Furthermore, while operators undergo a learning process during internationalization, the commitment to entered markets is unlikely to be “staged” as predicted by the model. At the same time, the review of the literature and our results highlight the need for a more nuanced approach to internationalization in different types of service industries.

7. Conclusion

There are three ways in which this research contributes to theory. First, it updates the internationalization process model with institutional distance. Bringing institutions into internationalization research allows differentiating between regulative, normative and cognitive-cultural environmental influences. Second, we draw further attention of internationalization scholars to the multi-level, complex environment in which internationalization firms operate. We do so by considering institutional distance at both national and industry-specific levels. Third, it suggests that the construct of learning in internationalization process model applies to service firms. However, the learning process primarily applies to entries into increasingly distant markets and does not include stages of commitment to existing markets. Our study also uses statistical analysis, which complements qualitative methodology that has been used in the majority of internationalization research.

From the practical perspective, the findings may be useful to managers. They outline factors that might be considered in strategies of companies that are expanding into often unfamiliar foreign countries. In particular, it draws attention of mobile operators to industry-specific regulations, suggesting that they have a greater influence on internationalization than general country regulations. This research also calls for a careful evaluation and critical assessment of assumptions built into international strategies of operators. Realizing the extent of such assumptions and potentially going against established internationalization patterns in the industry may bring about competitive advantages for the company.

This research may also help in the development and enhancement of FDI strategies by policymakers at the national and regional levels. The results highlight factors that influence internationalization, which can be used in development or adjustment of specific policies. For example, given that previous experience in the region influences operators, particularly when they begin to expand in this region, policymakers may pay particular attention to operators coming from outside of the region, assisting them with advice and otherwise facilitating adjustment to the unfamiliar environment.

Future research in this area may further probe into the influence of institutional distance at different level by considering, e.g., regional or intra-organizational pressures. Furthermore, the results presented here may be enhanced through examinations of the relationship between firm performance and learning in the internationalization process. This study also highlights a need to develop a typology of service industries that can be used in subsequent studies of internationalization. Such typology would greatly benefit the analysis of internationalization behavior, given the importance and sheer size of services in the world economy.

Appendix A. Entries of mobile operators in Europe and South America

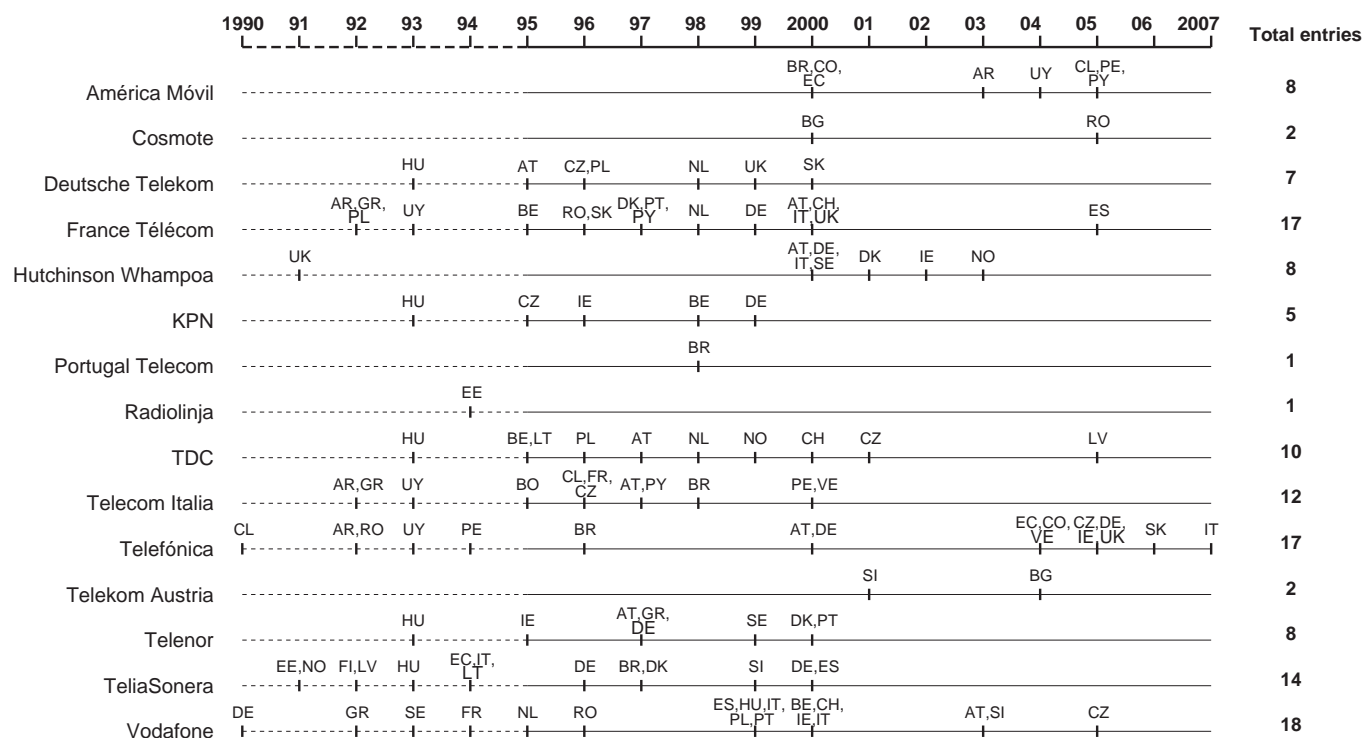


Fig. A1. Entries of mobile operators included in the research.

Fig. A1 shows entries of mobile operators. Note that for methodological reasons we included entries prior to 1995 when operations continued in 1995 or beyond, which is shown on the dotted lines. Country abbreviations are shown in Table A1.

Table A1
Country abbreviations used in Fig. A1.

Abbreviation	Country name	Abbreviation	Country name
AT	Austria	HU	Hungary
AR	Argentina	IE	Ireland
BE	Belgium	IT	Italy
BG	Bulgaria	LT	Lithuania
BO	Bolivia	LV	Latvia
BR	Brazil	NL	The Netherlands
CH	Switzerland	NO	Norway
CL	Chile	PE	Peru
CO	Colombia	PL	Poland
CZ	Czech Republic	PT	Portugal
DE	Germany	PY	Paraguay
DK	Denmark	RO	Romania
EC	Ecuador	SE	Sweden
EE	Estonia	SI	Slovenia
ES	Spain	SK	Slovakia
FI	Finland	UK	United Kingdom
FR	France	UY	Uruguay
GR	Greece	VE	Venezuela

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