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TITLE

Launch decisions and the early market survival of innovations: an empirical analysis of the Italian mobile Value Added Services (VAS) industry

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RUNNING TITLE

Launch decisions and the early market survival of innovations

ABSTRACT

There is a surprisingly high number of new products and services that fail to produce enough return on the firm's investments in development and launch activities. Literature has shown that these failures can be due to a poorly planned and executed launch. Although a vast stream of research has studied how strategic and tactical launch decisions affect the performance of new products and services, some issues still need theoretical and empirical investigation. This article aims to extend new product launch research in two ways. First, it studies how tactical launch decisions (i.e. investments in advertising and involvement of external organizations in the launch process) interact with an important strategic choice (i.e. the degree of radicalness of the new product or service) to affect new product performance. Second, it focuses on a particular dimension of performance, i.e. early market survival, which has been overlooked in launch strategy and tactics research so far. Using a dataset comprising more than 9,300 new mobile Value Added Services (VAS) launched in Italy between 2003 and 2006, the article finds that launch tactics interact with the radicalness of the innovation to affect early market survival. In particular, communicating the distinctive characteristics of the new product or service and partnering with external organizations during the launch process are tactics which work particularly well with radical innovations. This is possibly due to the fact that they help reduce customers' uncertainty regarding expected benefits and transaction costs and hence contribute to win their resistance to adopt the innovation soon after launch. Investments in corporate advertising lead instead to a tangible improvement of the probability of early market survival for both radical and incremental innovations. In other words, the positive impact on the probability of early survival of increasing investments in corporate advertising appears to be relevant for both radically- and incrementally-new services. One possible explanation is that this tactic helps increase the number of potential customers who come to know about the existence of the innovating firms and its offering soon after launch, but this is likely to be equally important to stimulate early diffusion of both incremental and radical innovations.

INTRODUCTION

It is well known that a remarkably high percentage of all new products and services fail to produce enough return on the firm's investments in development and launch activities (Cierpicki, 2000). As shown by Gourville (2006), market analysts tend to believe that the reasons underlying these failures are related to inaccurate product conception and development, which result into an innovation lacking some critical functionalities. In fact, the performance of a new product or service can be heavily affected by the strategies and tactics used to launch it in the market (Chiesa and Frattini, 2011).

As a result, a vast stream of research has developed with the aim to study how launch decisions affect the performance of new products and services (see, e.g., Hultink *et al.*, 1997; Di Benedetto, 1999; Talke and Hultink, 2010a,b). Launch decisions are those "[…] necessary to present a product to its target market and begin to generate income from sale of the new product" (Hultink *et al.*, 1997, p. 245). A relevant part of the launch decision-making occurs prior to making the marketing mix launch decisions, and even before the new product development (NPD) process is started. These are called *strategic launch decisions* and concern the "what" to launch, "where" to launch, "when" to launch and "why" to launch. They define the strategic context in which market launch occurs and regard the firm's innovation and competitive strategies, e.g., whether a radical or an incremental innovation should be developed and launched. Nonetheless, other launch decisions take place after the conceptual and physical development of the product is completed. These are named *tactical launch decisions* and concern the "how" to launch, i.e. refer to the elements of the so-called *marketing mix* (product, price, promotion and distribution decisions).

The aim of this article is to extend launch strategy and tactics literature in two ways. First, this body of research shows that strategic and tactical launch decisions should be consistent so as to maximize new product or service success (Hultink *et al.*, 1997; 1998). However, it does not study in details how specific tactical launch decisions interact with launch strategies to affect performance. This although managers make marketing mix choices several months or years after the strategic context in which launch occurs has been defined. Due to changes in market conditions or competitors'

reactions, there might be the need to intervene on the operational aspects of the launch and perhaps revise the intended tactics. It would be important therefore for product and marketing managers to have a deeper understanding of how the impact on new product or service performance of their tactical launch choices depends on the strategic decisions already taken in the development process, which define the strategic context in which launch occurs. In particular, in this article we study how two tactical launch decisions (i.e. investments in advertising and involvement of external organizations in the launch process) interact with an important strategic launch choice (i.e. the degree of radicalness of the new product or service) to affect performance.

Second, launch strategy and tactics research assumes that launch decisions have an influence over two dimensions of new product or service performance (Hultink *et al.*, 1998; Talke and Hultink, 2010a): product performance (e.g., the new product's quality and competitive advantage) and market performance (e.g., the new product's market share, sales or ROI). As remarked by Asterbo and Michela (2005), however, new product or service success entails at least one more criterion, i.e. the ability to survive and remain on the market. In order to achieve good market performance, a new product or service needs indeed to survive the introduction stage of its life cycle, i.e. it has to experience enough diffusion and meet the first sales targets so as to avoid being retired from the market. Early failure can happen also with very well-developed innovations, as shown in the cases of the IBM PC-Junior in 1985 and the Google Wave networking service in 2010. This indicates that there might be new products or services with the potential to achieve very good market performance, which fail to do so because of poor early market diffusion, and points to the importance of taking early survival into proper account in launch strategy and tactics research. In this article we specifically examine the impact of launch decisions on early market survival. Using the traditional product life cycle model (Day, 1981), early market survival is defined here as the ability of a new product or service to survive the introduction stage of its life cycle and not being withdrawn from the market before its sales can eventually enter the steady growth phase. It should be noticed that early market survival, as defined in this article, is conceptually different from the idea of "crossing the chasm" developed by Geoffrey Moore (1991). Moore explains that many high-tech innovations fail to bridge the "chasm" between early adopters and the majority of

their potential adopters, because of poorly conceived marketing strategies. Although these products or services are enthusiastically received immediately after launch, they never diffuse in the largest part of their target market. In this article we are interested instead in those new products and services that fail to diffuse among their early adopters (i.e. do not survive the introduction stage of their life cycle) and, as a result, are withdrawn from the market, on the basis of a rational decision, before they can eventually spread among the less innovative and more conservative (Rogers, 2003) market segments.

Figure 1 depicts the conceptual model underlying this article, which aims to study: (i) how the radicalness of the new product or service affects early market survival; (ii) how investments in advertising and the involvement of external organizations in the launch process affect early market survival; (iii) how investments in advertising and the involvement of external organizations in the launch process interact with the radicalness of the new product or service to affect early market survival.

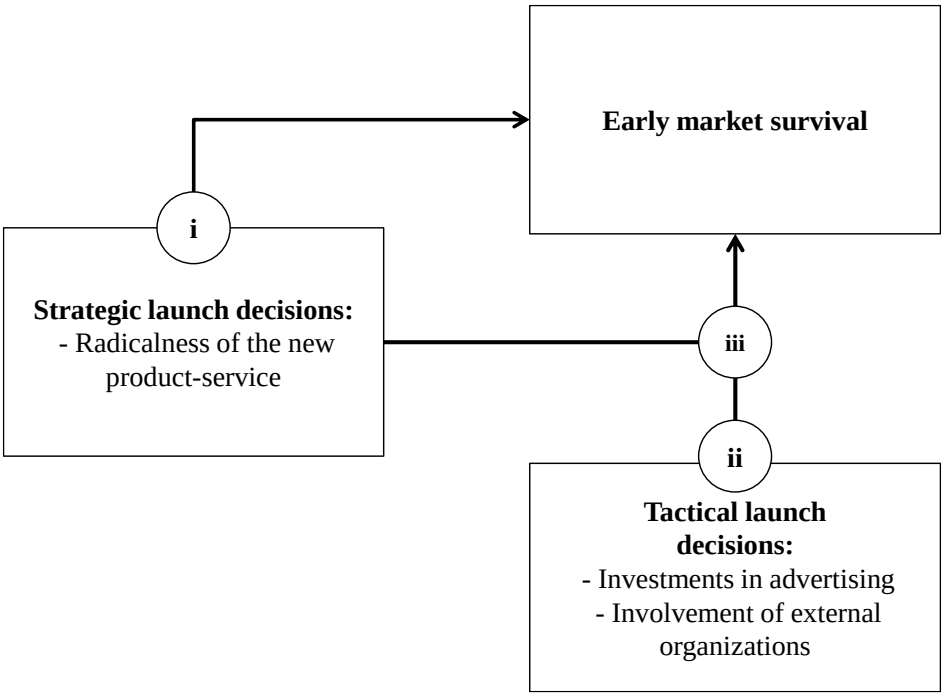

Figure 1: Conceptual model of launch decisions and the early market survival of innovations

The model is tested using a dataset comprising more than 9,300 new mobile Value Added Services (VAS) launched between 2003 and 2006 on the Italian market. Mobile VAS are defined in this article as application-to-person (A2P) services beyond

standard voice calls and fax transmissions. VAS is a popular telecommunications industry term for non-core services. This empirical setting is particularly appropriate for the purpose of the analysis because:

- Italy is the European country where mobile VAS have experienced the steadiest and most significant diffusion in the last decade;
- firms competing in the mobile VAS industry are very innovative and hundreds of new services are launched every year on the market;
- the mobile VAS industry is characterized by a very high mortality rate, with a sizeable percentage of new services being withdrawn from the market due to poor sales a few months after launch, and a limited number of VAS that survive for several years and become the source of substantial revenues and profits.

The structure of the article is as follows. The next section develops theory and hypotheses. Afterwards, an overview on the data and the methodology used in the analysis is given. The ensuing section describes and discusses the empirical results. Finally, conclusions and avenues for future research are outlined.

THEORY AND HYPOTHESES

Launch strategies and tactics

A host of empirical studies have been conducted to understand how strategic and tactical launch decisions affect new product or service performance (Hultink and Hart, 1998; Hultink and Robben, 1999; Talke and Colarelli O'Connor, 2011). One important finding of this stream of research is that successfully launching a new product or service requires consistency between strategic and tactical launch decisions. Hultink *et al.* (1997), e.g., identify four internally consistent sets of launch decisions, which are labeled as "niche followers", "niche innovators", "mass marketers" and "would-be me-toos". Similarly, Hultink *et al.* (1998) unearth three typologies of new product launch, i.e. "innovative new products", "offensive improvements" and "defensive additions". The assumption underlying these works is that, when it comes to make tactical launch choices, product and marketing managers basically put into practice the strategic decisions already taken in the development

process. However, as discussed in the introduction of this article, to the best knowledge of the authors there are no studies investigating how tactical, marketing mix decisions interact with earlier strategic choices to affect the likelihood of new product success. This is instead an important concern for product and marketing managers who are required to continuously adjust their launch tactics to the changing market and competitive context.

Similarly, how launch strategies and tactics influence early survival remains a largely overlooked topic. A notable exception is research on pioneer advantage (e.g., Golder and Tellis, 1993), which investigates how one critical strategic launch decision (i.e. timing) affect the ability of a new product or service to remain on the market for long time. In a study of the predictors of the survival of innovations, Asterbo and Michela (2005) include some decision variables regarding the launch process (e.g., marketing and sales costs), but their model is mainly focused on exogenous, not controllable predictors. Finally, Chiesa and Frattini (2011) explain how and why launch decisions can determine new product failure, but they do not distinguish failure due to an early withdrawal of the product from the market or to its inability to achieve substantial customer acceptance. There are also some studies in which the notion of new product survival is used ambiguously. For instance, Thieme *et al.* (2003) define a new product as surviving in the marketplace if it attains targets regarding, e.g., return on investment, profitability, sales, market share.

This brief review of the literature points to the need for further theoretical and empirical analyses on how tactical launch decisions interact with strategic decisions to affect new product or service early survival.

As regards strategic decisions, in this article we focus on the radicalness of the new product or service. A radical innovation is defined as "a new product, generally containing new technologies, that significantly changes behavior and consumption patterns" in the target market. An incremental innovation is "an innovation that improves the conveyance of a currently delivered benefit, but produces neither a behavior change nor a change in consumption"[i]. This strategic decision seems to be particularly critical in affecting early market survival, as suggested by marketing and radical innovation research (Alexander *et al.*, 2008; Rice *et al.*, 2002). As regards

tactical launch decisions, this article focuses on two policies that product and marketing managers can adopt to improve the likelihood of achieving substantial market acceptance, i.e. investments in promotion and advertising activities and the involvement of external organizations in the launch process, e.g., through the establishment of partnerships and cooperation agreements. These have been identified as critical tactics by marketing researchers especially in high-technology, high-velocity industries (e.g., Beard and Easingwood, 1996), which are the main focus of our analysis.

Launch strategies: radicalness of the new product or service

A new product or service fails to survive the introduction stage of its life cycle because it experiences unsatisfactory levels of sales, i.e. because of limited customer acceptance. According to sociological theories of innovation diffusion (Turnbull and Meenaghan, 1980; Burt, 1987; Deroïan, 2002), the main reason why potential adopters decide not to purchase (or delay the purchase of) a new product or service is uncertainty. Innovations elicit indeed a great deal of uncertainty in prospective buyers, which often results into a postponement of the adoption decision (Chiesa and Frattini, 2011). Even when some specifications and consumer reports are available, and the cost of purchase is exactly known, adopters may still be unconfident about how the product will perform for them, whether it is suited to the uses they have in mind and whether it will receive support from suppliers of complementary equipments, software or additional services.

However, the degree of customers' pre-purchase uncertainty and hence their resistance to change vary considerably depending on the type of innovation. In particular, the greater the change in behavior and consumer patterns required to make the most out of a new product or service, the higher the degree of uncertainty the potential customer will perceive, which can slow and ultimately freeze early diffusion (Chiesa and Frattini, 2011). This proposition is also grounded in marketing research, which suggests that the likelihood of having a new product withdrawn from the market for poor commercial performance early after launch is particularly high for really-new products (Alexander *et al.*, 2008). This because, when confronted with a radically-new product, as compared with an incrementally-new one, customers perceive: (i) greater uncertainty about the consumption benefits and transaction costs (Hoeffler,

2003); (ii) the need to more deeply modify their behavior to reap the potential benefits of the new product (Gourville, 2006).

Put it differently, the more radical a new product or service, the higher the uncertainty perceived by potential adopters and hence the higher the likelihood that they will postpone purchase, this resulting into a limited after-launch acceptance of the innovation and eventually its withdrawal from the market. This argument is consistent with research on radical innovation management (McDermott and Colarelli O'Connor, 2002). Adopting the point of view of the firm developing and commercializing this type of new products or services, it shows that radical innovation projects are characterized by soaring levels of uncertainty (regarding market, technology, resources), which result into particularly high chances of market failure (Rice *et al.*, 2002). Therefore we posit that:

H1: The radicalness of the new product or service will be negatively associated with early market survival

Despite the above, it may be advisable to develop and launch a very radical new product or service because, if initial resistance to change is overcome, it can determine substantial advantages in terms of higher margins, expanded market and increased corporate reputation (Leifer *et al.*, 2001).

Launch tactics: investments in advertising and involvement of external organizations

Research on diffusion of innovation has long struggled to identify the reasons underlying diffusion and lack of diffusion of new products and services (Geroski, 2000). However, most of the existing interpretative and predictive models focus on the role of *demand-side* factors in shaping diffusion processes, e.g., characteristics of the prospective purchasers (Rogers, 2003), spread of information between them (Bass, 1969), imitation and bandwagon phenomena (Abrahamson and Rosenkopf, 1997), social contagion and cohesion effects (Burt, 1987).

The role of *supply-side* variables, i.e. those levers that can be directly controlled by the firm which introduces the innovation into the market, has been instead largely neglected so far. Exceptions are those pieces of research that have studied: (i) which

characteristics of the new product or service explain heterogeneous rates of diffusion (Rogers, 2003); (ii) which is the role of feedbacks and interactions between developers and users in shaping diffusion processes (Mukoyama, 2004). Moreover, several attempts to generalize well-known diffusion models have been made. For instance, the Generalized Bass Model (Mahajan *et al.*, 1995) has been developed with the aim to account for decision variables regarding, e.g., increase or reduction of prices. However, these contributions do not specifically focus on new product and service early survival and do not allow to consider the more qualitative aspects underlying launch tactics (Chiesa and Frattini, 2011).

As explained above, this article focuses on two basic tactics that product and marketing managers can adopt during launch, namely investments in promotion and advertising and the involvement of external organizations in the launch process, e.g., through the establishment of partnerships and cooperation agreements.

As regards investments in promotion and advertising, especially when undertaken using mass communication channels, we argue that they can help improve the likelihood of achieving satisfactory new product acceptance after launch because they increase: (i) the amount of information about the consumption benefits and transaction costs associated with purchase and use of the innovation that can reach potential adopters; (ii) the number of potential adopters who come to know about the existence of the innovating firm and its new product or service. Although world-of-mouth communication is key in determining substantial levels of diffusion into the more conservative segments of the potential market (Chiesa and Frattini, 2011; Rogers, 2003; Wind and Mahajan, 1987), initial uptake of an innovation and hence the likelihood of early survival depends on the amount of information disseminated through advertising and promotion campaigns. This is confirmed by both epidemic or disequilibrium diffusion theories (Mahajan *et al.*, 1990) and by sociological models of innovation diffusion, according to which customers who purchase early an innovation are those more exposed to external communication channels, such as mass-media, than the rest of the population (Van den Bulte and Lilien, 2001). Therefore we posit the following:

H2: Investments in advertising will be positively associated with early market survival

In this article we are especially interested in how investments in advertising and the radicalness of the innovation interact to affect early market survival. Based on the arguments presented so far, it can be assumed that the positive impact of investments in advertising on the innovation after-launch survival will be stronger for radically-new products, in comparison with incremental innovations. This because, as explained above, uncertainty surrounding adoption decisions and hence resistance to change will be more pronounced when the innovation requires potential adopters to substantially change their habits and consumption patterns, which happens in case of highly radical innovations (Alexander *et al.*, 2008; Rice *et al.*, 2002). This leads us to argue that:

H2a: Investments in advertising will have a stronger association with early market survival for more radical new products and services

Another approach that product and marketing managers can adopt to reduce perceived uncertainty and resistance to change entails the involvement of external organizations in the launch of the innovation. In the last years, more and more markets have taken on the characteristics of networks (Chakravorti, 2004). Therefore decisions regarding the adoption of new products and services are increasingly dispersed among many interrelated organizations, whose decisions influence each others'. These players constitute the so-called *adoption network* of the innovation (Chakravorti, 2003), which typically comprises: (i) companies supplying complementary hardware, software and contents; (ii) companies involved in distributing the innovation and information about it; (iii) companies providing complementary services (e.g., customer assistance, billing, payment). Winning customers' resistance to adoption is very challenging under these circumstances, because they might be highly unsure not only about the value of the innovation *per se*, but also as regards the degree of support that the members of this adoption network will ensure to the innovation. Therefore, increasing the involvement of the members of the adoption network in the launch of the innovation is useful to signal to potential purchasers that the new product or service is very well backed and receives support from the several parties whose role is critical to ensure a successful adoption of the new product. This is not a new concept in marketing research (e.g., Wind and Mahajan, 1987), but it has become even more important in today's highly interconnected markets. Therefore we posit the following:

H3: Involvement of external organizations in the launch of the innovation will be positively associated with early market survival

Again, in this article we are especially interested in how the involvement of external organizations in the launch process and the radicalness of the innovation interact to affect early market survival. Based on the above discussion, it is possible to argue that the positive impact of involving external organizations in the launch of the innovation will be stronger for radically-new products, in comparison with incremental innovations. This because, as explained above, uncertainty surrounding adoption decisions and hence resistance to change will be more pronounced when the innovation requires potential adopters to substantially change their consumption patterns (Alexander *et al.*, 2008; Rice *et al.*, 2002). It is under these circumstances that the signaling effect of having involved many external players in the launch process plays a more critical role in determining substantial early diffusion (Schilling, 2003). This is why we posit that:

H3a: Involvement of external organizations in the launch of the innovation will have a stronger association with early market survival for more radical new products and services

The conceptual model and the research hypotheses developed in this section are synthesized in Figure 2.

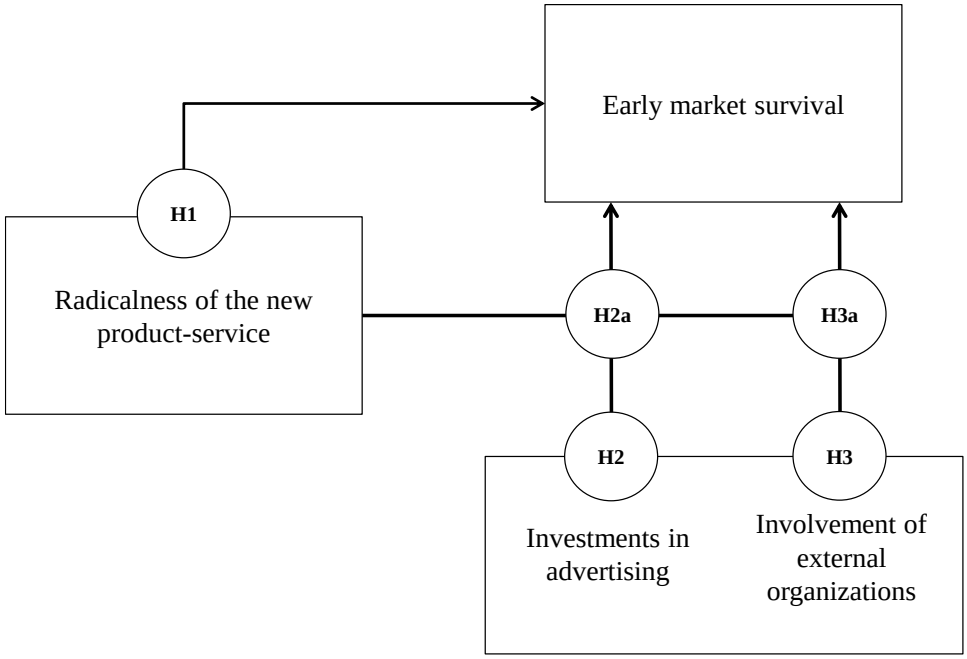

Figure 2: Research hypotheses

The next sections describe the empirical data and the analyses that have been undertaken to test our hypotheses.

METHODOLOGY

Empirical setting

The empirical setting of our research is the Italian mobile Value Added Services (VAS) industry. VAS comprise all services beyond standard voice calls and fax transmissions. Therefore, they *add value* to the standard telecommunications offering, encouraging subscribers to increase the use of their phone and allowing the operator to enhance its average revenue per unit (ARPU). The importance of VAS in the mobile telecommunication (TLC) market has substantially increased during the last years, especially in Italy. This is clearly evinced considering that Italy has the world's highest mobile VAS penetration and diffusion rates (IDATE, 2009; Informa, 2009). As shown in Figure 3, the average annual growth rate of the Italian mobile VAS market in the recent years is close to 26%.

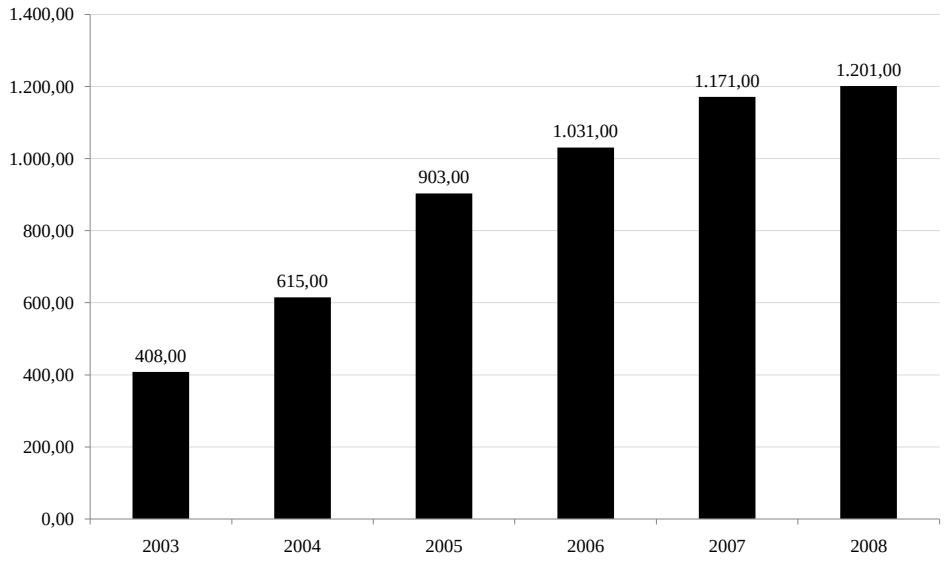

Figure 3: Overall annual turnover (in €) of the Italian mobile VAS market in 2003-2008 (source: Bertelè *et al.*, 2009)

Data on the Italian mobile VAS industry have been collected since 2002 by a research group within Politecnico di Milano, the *Information and Communication Technology & Management Observatory* (www.osservatori.net). Founded in 1998, it offers up-to-date analyses on the impact of information and communication technology (ICT) on private companies, public administrations and industries. The research project devoted to mobile VAS was started in 2002 and it represents today a very well-respected source of data for companies, consultants and analysts with an interest in the Italian mobile VAS industry. The ongoing research yearly provides a synoptic view of all the mobile VAS offered on the Italian market. In particular, the mobile VAS project has collected data on all the new services launched in Italy since 2003 (which was the first year when these services were offered to Italian mobile phones users). Because criteria for data collection changed in 2008, we narrowed the timeframe of our analysis to the mobile VAS launched between 2003 and 2007.

A mobile VAS can be delivered to customers using different technological platforms. The two largely prevailing in Italy in the 2003-2007 period were:

- *Short Message Service* (or SMS), which allows the sending of short text messages between mobile phones and other handheld devices. The first application-to-person (A2P) VAS based on SMS were offered to customers in Italy in 2003;

- *Browsing* (also known as mobile-browsing or micro-browsing), which allows the phone user to surf mobile-sites and mobile-portals like with traditional desktop internet browsers. The first A2P VAS delivered using Browsing appeared in Italy in 2004.

SMS and Browsing accounted for 80% of the total revenues in 2003 and 2004 and 70% in 2005, 2006 and 2007. Among the other marginal technologies, multimedia message service (MMS) accounted only for 5% of the total revenues during the period 2003-2007, whereas Download accounted for 15% of the total revenues in 2003-2004 and for 25% in 2005-2007.

Our study focuses on SMS and Browsing, which are highly representative of the Italian mobile VAS industry in the period under analysis. Both platforms were used to deliver to customer different contents: *Infotainment* are those services that provide information and/or entertainment contents (e.g., news, sport, cinema); *Personalization* are those that allow users to personalize their mobile phone (e.g., with logos, ringtones, wallpapers); *Community* services enable people to interact and communicate with each other on real time (e.g., chat); finally, *Gaming* services allow customers to play games on their mobile phone. No other different contents were offered to customers in the 2003-2007 period using the marginal technologies not included in our analysis (i.e. MMS and Download).

The complexity of the mobile VAS industry is due to the existence of different approaches that can be used by the Mobile Service Provider (*MSP*) to launch a new service. First, the different actors of the adoption network of a new mobile VAS, that can be involved in the launch process, are 5:

- the Mobile Network Operator (*MNO*), which provides access to the mobile communication infrastructure and platforms (e.g., the billing and customer care systems) and is responsible for the contractual relationship with the customer. The *MNO*s which operate in Italy are Tim, Vodafone, Wind and H3G;
- the Mobile Content Provider (*MCP*), which develops the contents to be delivered through the mobile VAS and receives royalties or fees based on the sales of the service;

- the Mobile Technology Provider (*MTP*), which is involved in the development of the underlying platforms for mobile communication;
- the Record & Movie Production Company (*RMPC*), which operates in media communication to end-consumers;
- the Web Editor (*WE*), which produces web contents and acts as a content aggregator.

These external actors can be involved by the *MSP* to a varying extent in the twelve distinct activities which are required to launch a new service, i.e. platform development, content development (which entails the following tasks: content creation, content packaging, content publishing, content management and portal provisioning), advertising (which includes two activities, i.e. advertising content creation and advertising bundling), delivery (which can be further distinguished into content delivery and content charging), billing (which includes accounting and customer relationship management). Of course some of these tasks are always under the responsibility of an external actor (e.g., the *MNO* is always involved in billing), but there is the chance for the *MSP* to enlarge the involvement of an external actor to several other activities (e.g., the *MNO*, which is highly visible to the end user of the mobile VAS due to its size and brand awareness, can be asked to participate in delivery and advertising). The mobile VAS research project allows to track which external actors have been involved by the *MSP* in each launch activity, for every mobile VAS launched in Italy in the period 2003-2007.

Variables

Preliminary interviews with experts in the Italian mobile VAS industry[ii] showed that a high percentage of new VAS do not survive the first months after launch. In particular, our data indicate that about 66% of the new services are no more offered to customers in the year that follows the one when they were first launched (i.e. have a life cycle which is shorter than 12 months). However, those services that survive the first year remain on the market for a long time (on average for more than 3 years) and become a major source of revenues and profits for the *MSP*. On average, our key informants estimate that the VAS surviving the first year have an operating profitability which is three times larger than those that fail in the first months after launch.

According to our key informants, it is not a viable strategy for the *MSP* to launch many new services, purposefully kill those that do not sell, and bet only on the few that experience an early success. This *probe and learn* type of strategy (Lynn *et al.*, 1996) is impeded by the high organizational complexity and sunk costs that launching a new VAS entails. Therefore, after having tested several concepts for new VAS with selected customers, the *MSP* launches only those that have the highest probability to stay on the market for long time. As a result, it is very unlikely that early market withdrawal in the mobile VAS industry is due to a purposeful decision of the *MSP*. Rather, it is typically the result of poor market acceptance of the new service.

That said, we decided to operationalize our dependent variable, i.e. *Early market survival*, as a binary variable which describes whether or not the new service stays on the market for less than 12 months (*Early market survival* equals to 0 if the new service stays on the market for less than 12 months, 1 otherwise). This operationalisation leads us to consider only the mobile VAS launched in Italy between 2003 and 2006. Table 1 shows that, in the 2003-2006 period, the number of new services launched through the Browsing technology was higher than those which used SMS. According to the experts that we interviewed, this is due to the higher flexibility of the Browsing platform, that allows *MSPs* to develop a broader range of VAS with heterogeneous functionalities.

Technology – Content	2003	2004	2005	2006	Total
SMS – Infotainment	106	563	383	227	1,279
SMS – Personalization	83	212	106	142	543
SMS – Community	66	279	312	117	774
SMS – Gaming	41	219	224	103	587
Browsing - Infotainment	0	1,347	873	1,870	4,090
Browsing - Personalization	0	0	0	114	114
Browsing - Community	0	376	275	548	1,199
Browsing – Gaming	0	320	208	202	730
Total	296	3,316	2,381	3,323	9,316

Table 1: New A2P mobile VAS launched in Italy between 2003 and 2006

As regards the *Radicalness of the new product or service*, our interviews showed that the extent to which customers need to change their behavior and consumption pattern when it comes to use a new VAS depends on both the content of the service and the technology used to deliver it. For instance, in 2004 customers were more skeptical as regards the opportunity to access an infotainment service (e.g., *Formula One news*) through micro-browsing than using the SMS technology. Whereas SMS was an already well-known and widely-used mobile communication means in Italy, several factors resulted in potential users' resistance toward purchasing browsing-based services. First, accessing a mobile VAS through Browsing required customers to completely change how they interacted with their handset. Second, customers preferably required handsets with large and colored screens and user-friendly interfaces, which were not available in Italy in 2004 yet. More importantly, most of the mobile phone users had pay-per-use payment schemes, which made it very costly to navigate the web. Of course user-friendly phones and flat tariffs gradually diffused after some years and customers' resistance toward using micro-browsing to access VAS have decreased. As regards the content of the service, in 2004 customers' insecurity regarding how enjoyable could be playing a game on the mobile phone was much higher than, e.g., reading daily sport updates, no matter which technological platform (SMS or Browsing) was used. Reading news did not require indeed a significant change in the way through which customers were used to interact with their handsets, as it happened instead when they tried to play chess for the first time on them. Of course, as long as games for mobile phones diffused and their user-friendliness improved, customers learnt how to play with their handsets and became able to evaluate the pros and cons of purchasing and using gaming VAS.

We needed therefore a method to measure the radicalness of the different categories of VAS (i.e., of each couple technology – content), over the years 2003-2006. We relied upon the assessments of a panel of experts, gathered using a two-round Delphi process (Dalkey and Helmer, 1963). The panel included 10 experts with different professional experiences: 3 are professors at Politecnico di Milano and actively participate in the *Information and Communication Technology & Management Observatory*, 4 are senior managers working for the major Italian *MNOs*, and 3 are managers with responsibilities for market development in different *MSPs*. They were asked to rate the radicalness, as defined in this article, of each couple technology –

content, for every year between 2003 and 2006. Assessments were given on a Likert scale ranging from 1 to 5. In the ensuing analyses, all the mobile VAS launched at year *t* and characterized by a specific combination of technology – content have been associated with the same mean radicalness identified through the Delphi method. For example, the panel of experts ranked gaming services delivered through Browsing in 2004 as significantly radical (4.4), while infotainment services offered through SMS in the same year were evaluated as incremental (1.3). It should be noticed here that the experts took into account, when they evaluated the radicalness of each couple technology – content, those factors (e.g., availability of user-friendly handsets and of flat tariffs) that affected the extent to which customers were required to change behavior and consumption pattern if they wanted to use a new VAS. As an example, the average value of the radicalness associated to Infotainment services delivered through the Browsing technology decreased in 2005 (from 1.8 to 1.6), because of the introduction of the first user-friendly smartphones, and in 2006 (from 1.6 to 1.4), as a result of the appearance of the first flat tariffs in Italy.

As regards investments in advertising, we operationalized this variable using two measures:

- First, each mobile VAS launched at year *t* has been associated with the annual advertising expenditures (measured in €, at year *t*) of the *MSP* that launched the service. This variable (named *Investments in corporate advertising*) captures the impact on early survival of investments in promotional activities (conducted using mass-media channels such as the TV or the web) aimed at increasing the brand awareness and the reputation of the *MSP*;
- However, our preliminary interviews suggested that a further critical tactical decision for the *MSP* is whether or not the characteristics of the specific service (e.g., *Formula One news*) should be advertised within the corporate promotional campaign. We captured this tactics through a binary variable called *Investments in service advertising*, which indicates whether the *MSP* decided to communicate the peculiarities of the VAS in the corporate advertising campaign (*Investments in service advertising* equals to 1) or not.

Finally, as regards the variable *Involvement of external organizations*, we decided to measure the extent to which the *MSP* involves external actors in the launch process by calculating the ratio between the number of different external actors that participate in the launch of the new VAS and the number of distinct activities required to launch it[iii]. The assumption is that the higher this ratio, the higher the presence of the external actors in the launch process and therefore the stronger the signaling effect toward potential adopters that the specific VAS will benefit from.

We also introduced a set of dummy variables to control for the possible impact on early market survival of the type of technology used to deliver the VAS (SMS or Browsing) and of its content (Infotainment, Personalization, Community, Gaming).

Table 2 provides descriptive statistics for our variables. For each of them the original values are reported, instead of the standardized ones, which will be used for the ensuing analyses. About 66% of the mobile VAS have a life cycle shorter than 12 months (see the row for *Early market survival*). The mean value of the *Radicalness* variable is equal to 1.65. On average, the *MSPs* invest annually 6.54 million € in corporate advertising activities and about 93% of all the new VAS are specifically advertised in corporate promotional campaigns. Finally, the *Involvement of external organizations* variable varies between 0.09 and 0.50, with the total number of distinct actors involved in the launch process which ranges from 1 to 4 and the total number of activities comprised between 8 and 12.

Variable	Mean	S.D.	Min	Max
Early market survival	0.34	0.47	0.00	1.00
Radicalness of the new product or service	1.65	0.61	1.30	4.40
Investments in corporate advertising (mln €)	6.54	3.55	0.03	33.25
Investments in service advertising	0.93	0.26	0.00	1.00
Involvement of external organizations	0.21	0.07	0.09	0.50

Table 2: Descriptive statistics

RESULTS AND DISCUSSION

Table 3 reports both direct and interaction effects of the Logit regression that we used to test our hypotheses.

	Direct and Interaction Effects
Independent variables	
H1: Radicalness of the new product-service	- 2.196** (0.219)
H2: Investments in corporate advertising	+ 0.259** (0.066)
H2: Investments in service advertising	+ 2.083 (0.151)
H3: Involvement of external organizations	+ 2.048** (0.160)
Interaction variables	
H2a: Radicalness of the new product-service X Investments in corporate advertising	+ 0.137 (0.121)
H2a: Radicalness of the new product-service X Investments in service advertising	+ 3.131** (0.762)
H3a: Radicalness of the new product-service X Involvement of external organizations	+ 3.714** (0.283)
Control variables	
Technology (Browsing)	+ 0.786** (0.045)
Content 1 (Infotainment)	- 0.187 (0.054)
Content 2 (Personalization)	+ 0.063 (0.029)
Content 3 (Community)	+ 1.995 (0.138)
Pseudo R^2 (Cox & Snell)	0.195
Chi-square	2,025.94**
Number of observations	9,316

Standard Errors (SE) in round brackets, *p<0.05; ** p<0.01

Table 3: Results of the Logit regression for *Early market survival*

Launch strategy: radicalness of the new service

Hypothesis H1, which posits that the radicalness of the new service is negatively associated with early market survival, is supported by our data. Not surprisingly, the probability of early survival is higher for incremental than for radical innovations. This suggests that the smaller the change in consumption behavior required to prospective customers when they use the new service, the lower the uncertainty they perceive as regards its expected benefits and transaction costs. This is likely to lower

their resistance to adopt the new service soon after launch and in turn increase its probability of early market survival.

Launch tactic: investments in advertising

Hypothesis H2, which posits that investments in advertising are positively associated with early market survival, is partially supported, depending on how the independent variable is measured. In particular, increasing investments in corporate advertising improves the probability of early survival, whereas communicating the characteristics of the VAS within the corporate promotional campaign does not (although the direction of the relationship is as expected, it is not statistically significant). It seems therefore that disseminating information regarding the *MSP* is a more effective tactic for accelerating early diffusion in comparison with advertising the features of the service. One possible explanation for this finding is that improving the probability of early market survival is a matter of enlarging the number of customers who come to know about the *MSP*, rather than illustrating to them the characteristics of the new service. This is suggested by sociological theories of innovation diffusion (Van den Bulte and Lilien, 2001), which show that those who purchase an innovation earlier than the *average* customer are more exposed to mass communication channels, but are more risk tolerant and have the lucidity and skills that enable them to value the characteristics of the innovation and estimate its expected benefits and costs (Rogers, 2003). As a result, it might be not that critical to give these early buyers information regarding the peculiarities of the new service, but rather to increase the number of individuals who, coming to know about the existence of the *MSP*, may purchase it soon after launch.

Now we deepen the analysis considering the interaction effects with the radicalness of the innovation. Also Hypothesis H2a, which proposes that investments in advertising have a stronger association with early market survival for more radical new services, is partially supported. Investments in service advertising have indeed a stronger positive impact on the probability of early survival for radical than incremental innovations. Considering only the radically-new VAS in our dataset (i.e. the new services with an associated radicalness higher than the average value of 1.65), we find that those able to survive the first year after launch are more likely to have been advertised in the corporate communication campaign that those that are not (see the *t*

test reported in Table 4). This does not happen however with incrementally-new VAS, as shown by the *t* test reported in Table 5: incrementally-new services which do not survive the first year after launch and those that remain on the market for a longer time don't show significant differences as regards investments in service advertising. These findings are in line with the direct and interaction effects regarding the *Investments in Service Advertising* variable reported in Table 3.

	Radically-new services which do not survive the first year after launch	**Radically-new services which survive the first year after launch**
Investments in service advertising	71.2%	98.4%
N	2,233	378
T	-23.597**	
Df	2,132.734	

*p<0.05; ** p<0.01

Table 4: Impact of *Investments in service advertising* on the *Early market survival* of radically-new VAS

	Incrementally-new services which do not survive the first year after launch	**Incrementally-new services which survive the first year after launch**
Investments in service advertising	100.0%	98.6%
N	3,884	2,821
T	1.288	
Df	2,820.000	

*p<0.05; ** p<0.01

Table 5: Impact of *Investments in service advertising* on the *Early market survival* of incrementally-new VAS

One possible explanation for this finding is that the more radical the innovation, the more important conveying the characteristics, the advantages and the peculiarities of the new service to potential customers becomes. This can be explained considering that, due to the high radicalness of the new service, even those adopters who are used to purchase early, who are on average more risk tolerant and able to value the benefits and costs of the innovation, perceive a soaring uncertainty and need information regarding how sophisticated the new service is and what additional functionalities it enables, to overcome their resistance to buy (Moore, 1991).

However, the positive impact on the probability of early survival of increasing investments in corporate advertising appears to be relevant for both radically- and incrementally-new services. Both radically-new and incrementally-new services able

to survive the first year after launch are associated indeed with investments in corporate advertising significantly higher than those not able to survive (see the *t* test reported in Table 6 and Table 7). This is in line with the results of the Logit regression for the *Investments in Corporate Advertising* variable shown in Table 3.

	Radically-new services which do not survive the first year after launch (mln €)	**Radically-new services which survive the first year after launch (mln €)**
Investments in corporate advertising	5.380	5.802
N	2,233	378
T	-6.337**	
Df	1,055.890	

*p<0.05; ** p<0.01

Table 6: Impact of *Investments in Corporate Advertising* on the *Early Market Survival* of radically-new VAS

	Incrementally-new services which do not survive the first year after launch (mln €)	**Incrementally-new services which survive the first year after launch (mln €)**
Investments in corporate advertising	6.274	7.909
N	3,884	2,821
T	-17.213**	
Df	6,703.000	

*p<0.05; ** p<0.01

Table 7: Impact of *Investments in corporate advertising* on the *Early market survival* of incrementally-new VAS

One possible explanation for this finding is that increasing investments in corporate advertising enhances the number of potential adopters who come to know about the existence of the *MSP* and its services soon after launch, but does not reduce their pre-purchase uncertainty. Whereas reducing uncertainty surrounding early customers' adoption decisions is more critical for the early market survival of radical innovations, in comparison with incremental ones, increasing the number of potential early adopters is likely to be an equally important determinant of early market survival for both radically- and incrementally-new products.

Launch tactic: involvement of external organizations

The data in Table 3 provide also support for Hypothesis H3, which proposes that involvement of external organizations in the launch process is positively associated with early market survival. This suggests that having several external actors taking

part in launch activities increases the visibility of the new VAS in the eyes of potential customers and signals extensive commitment and endorsement for it, which helps reduce their uncertainty and resistance to change and ultimately encourages diffusion, therefore improving the probability of early survival.

Interestingly, also Hypothesis H3a, which posits that involvement of external organizations in the launch of the innovation has a stronger association with early market survival for more radical new services, is supported. Consistently with the results of the Logit regression for the *Involvement of External Organizations* variable (see the direct and interaction effects in Table 3), both radically-new and incrementally-new services able to survive the first year after launch are characterized by a higher value of *Involvement of External Organizations* than those that are not (see the *t* test reported in Table 8 and Table 9). That said, the differences between the mean values of *Involvement of External Organizations* for those services which do not survive the first year after launch and those that survive (0.047 in the case of radically-new services and 0.013 in the case of incrementally-new services) point to the stronger impact that this launch tactic has on the early market survival of more radical new services.

	Radically-new services which do not survive the first year after launch	**Radically-new services which survive the first year after launch**
Involvement of external organizations	0.187	0.234
N	2,233	378
T	-16.221**	
Df	1,268.094	

*p<0.05; ** p<0.01

Table 8: Impact of *Involvement of external organizations* on the *Early market survival* of radically-new VAS

	Incrementally-new services which do not survive the first year after launch	**Incrementally-new services which survive the first year after launch**
Involvement of external organizations	0.207	0.220
N	3,884	2,821
T	-9.773**	
Df	6,452.064	

*p<0.05; ** p<0.01

Table 9: Impact of *Involvement of external organizations* on the *Early market survival* of incrementally-new VAS

One possible explanation for these findings is that this launch tactic is particularly appropriate for reducing uncertainty perceived by those early customers who are taking into serious consideration the opportunity to purchase a new service soon after launch, mostly if it requires considerable changes to their behavior and consumption patterns, but also in case the new service is incremental in nature.

As regards our control variables, Table 3 indicates that the new services delivered through the Browsing technology have a higher probability of early survival than those based on SMS, independently from their radicalness. This possibly suggests that potential customers had a preference for VAS offered through Browsing because this technology enabled more interactive functionalities and thus allowed the *MSP* to develop and propose more appealing services. No statistically significant effects on the probability of early survival can be attributed instead to the content (Infotainment, Personalization, Communication, Gaming) of the new mobile VAS.

Finally, the same models reported in Table 3 have been tested separately for each year of our dataset (2003, 2004, 2005 and 2006) and we always had comparable results. Additional analyses were undertaken to see if our results are robust despite the fact that: (i) not all the technologies (i.e. SMS and Browsing) and types of content (i.e. Infotainment, Personalization, Communication and Gaming) were available in each year of our dataset; (ii) the dataset includes categories of VAS at different stages (i.e. growth and decline) of their life-cycle; (iii) user-friendly smartphones and flat tariffs, i.e. complementary products and services which might affect the diffusion of mobile VAS, were not available in Italy in each year of the dataset. These analyses, which confirmed the robustness of our findings, are available from the authors upon request.

CONCLUSIONS

Considering the surprisingly high number of new products and services that are withdrawn from the market soon after launch, this article investigates how early market survival is affected by the degree of radicalness of the innovation and by the adoption of two launch tactics, namely investments in advertising and involvement of external organizations during the launch process. Furthermore, it studies how the

impact on early market survival of these two launch tactics depends on the radicalness of the new product or service being launched.

Using a dataset comprising more than 9,300 new mobile Value Added Services (VAS) launched in Italy between 2003 and 2006, the article indicates that the more radical the innovation, the higher the likelihood of incurring an early failure. Therefore, product and marketing managers who are seeking to reap the potential advantages from launching a radically-new product or service (i.e., higher margins, expanded market, improved reputation) should be aware of the challenges that this strategic launch decision implies in terms of early customer acceptance. Moreover, they should take into account that, in order to improve the likelihood of early market survival of a radical innovation, some launch tactics can be more effective than others. In this regard, our analysis indicates that communicating the distinctive characteristics of the new product or service to the prospective customers and partnering with external organizations during the launch process are tactics which work particularly well with radical innovations. This is probably due to the fact that they help reduce customers' uncertainty regarding expected benefits and transaction costs and hence contribute to win their resistance to adopt the innovation soon after launch. On the other hand, investments in corporate advertising lead instead to a tangible improvement of the probability of early market survival for both radical and incremental innovations. In other words, the positive impact on the probability of early survival of increasing investments in corporate advertising appears to be relevant for both radically- and incrementally-new services. One possible explanation is that this tactic serves the purpose to increase the number of potential customers who come to know about the existence of the innovating firm and its offering soon after launch, which is equally important to stimulate early diffusion for both incremental and radical innovations. It does not reduce instead their pre-purchase uncertainty and resistance to change, which would be instead a much more critical determinant of early survival for radically-new products and services.

As regards research implications, the article encourages new product launch scholars to develop a more fine-grained understanding of the interaction effects between other tactical and strategic launch decisions. This would be useful to give product and marketing managers a comprehensive framework that helps them evaluate how

changes in marketing mix variables will affect product performance depending on the strategic context in which launch occurs. Moreover, it points to the importance of focusing on a further critical dimension when studying new product or service success, i.e. early market survival. Product management and launch strategy research could investigate in the future what further endogenous (i.e. managerial levers) and exogenous (i.e. environmental conditions) variables affect this particular aspect of innovation performance. The article also contributes to diffusion of innovation research by studying how some critical *supply-side* factors (i.e. decisions taken during the market launch of the innovation) affect a very important dimension of diffusion processes, i.e. early market survival. Future research is needed to understand how these decisions affect other characteristics of the adoption process, e.g., the speed at which new products and services are adopted.

The investigation obviously leaves several gaps that will require further research to be filled. First, it focuses on new product and service diffusion in consumer markets, especially those where it is of strategic importance for the innovating firm to maximize the probability of success of each new product or service that it launches. Although it could be possible to analytically generalize the findings of the article to industries with similar characteristics, e.g., the broadcasting, movie, or publishing industries, further research is needed to investigate whether, and to what extent, the impact of launch decisions on early market survival holds true also in other markets. Moreover, we deliberately focused on high-technology innovations in this article. It would be fascinating to understand what type of launch decisions affect the odds of after launch survival for different types of new products or services, e.g., design-driven innovations. Finally, work is needed to improve the operationalisation of the early market survival variable. In particular, depending on the average life cycle of new products, early survival should be measured on a few-week or many-month period after launch. In this article, the 12-month threshold has been chosen based on interviews with industry experts. There is however the need to identify more objective criteria to establish the length of this period in different industries.

NOTES AND REFERENCES

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[i] These definitions can be found in the PDMA glossary (http://www.pdma.org/library/glossary.html).

[ii] One of the authors is the Scientific Director of the *Information and Communication Technology & Management Observatory* research group. This made it easier for us to plan and carry out a set of interviews with experts in the Italian mobile VAS industry and take part to several conferences and workgroups organized by the *Information and Communication Technology & Management Observatory* prior to starting our analyses. In particular, we personally interviewed 12 key informants (4 top managers from the largest Italian *MSPs*, 5 marketing managers working for the major Italian *MNOs* and 3 top managers from Italian *WEs*), for a total of more than 10 hours of tape-recorded interviews. This preliminary analysis was aimed at understanding how the *MSP* organizes the launch of a new VAS, which are its strategic priorities and objectives, what tactics it uses to increase the chances of achieving substantial diffusion, how the key variables in our analysis could be operationalized.

[iii] There is a maximum of 5 distinct actors that can be involved in the launch by the *MSP*: Mobile Network Operator, Mobile Content Provider, Mobile Technology Provider, Record & Movie Production Company and Web Editor. There is a maximum of 12 activities that have to be carried out to launch a new VAS: platform development, content creation, content packaging, content publishing, content management, portal provisioning, advertising content creation, advertising bundling, content delivery, content charging, accounting and customer relationship management. It should be noticed that some new VAS do not require that all these activities are undertaken to be launched on the market.