Firm Transitions from Products to Services and Mode of Entry

Sukruth Suresh
Rensselaer Polytechnic Institute
suress@rpi.edu

T. Ravichandran
Rensselaer Polytechnic Institute
ravit@rpi.edu

Abstract

The paper develops a two-step approach to identify factors driving the propensity of product firms to enter services, and the mode of entry. We posit that the level of vertical integration, market size and the position of the firm’s product offerings in the phase of the product development lifecycle influence the propensity of entry into services. The mode of entry is a choice between firms exploiting its existing capabilities to enter services through organic growth or that of exploring for new avenues in the form of alliances or acquisitions [29]. At this second step, we posit that the firm status, presence of industry standards and the degree of modularity in the firm’s product offerings drive the decision on the mode of entry.

1. Introduction

Firms have traditionally relied on innovation and reduced costs as a means of delivering value to customers. While a large part of this has contributed to their success, they are increasingly facing challenges in sustaining this approach. Owing to the commoditization of product offerings, firms have turned towards services as a means of delivering additional value to consumers. In addition to the value component, the entry towards services highlights the movement of firms from treating services as a loss-leading additive to the product to one of providing complete solutions [43]. A solution in this context refers to an integrated combination of products and services that deliver more value to the users than if used together individually [43] [32].

This drive towards services has led to the new stream of “service-dominant marketing logic” [56] that focuses on developing products and services around the customer needs rather than just delivering a product and then using services to address additional customer needs. Firms have adopted this solution centric approach across multiple industries including railways, mobile communications and construction [8].

The motive behind firm transition into services includes that of increasing customer intimacy [52], firm profitability [58] and achieving future growth [44]. Existing research on firm transitions is in the space of changes in firm value [21], firm diversification [30] [55] and to a large extent on the geographic diversification [20] [19] [51] [60].

While the studies above identify the motive, there is a gap in identifying the factors that drive firms to this transition. Research in field of operations management has identified the gaps in determining the paths and approach adopted by firms in undertaking the transition [31] [32]. The paper tries to bridge this gap by addressing two related questions; first is that of the factors influencing the propensity of firms to enter services and the second is the mode of entry.

Firms enter services in three distinct ways, by developing services related to its existing product offerings (such as GM's OnStar navigation service), developing stand alone services that are independent of its product offerings (such as Toyota's quality management system) and developing integrated solutions for its existing product portfolio (as adopted by IBM). We use the exploration-exploitation argument [29] to highlight the fact that the entry into services is a choice between either exploiting its existing capabilities to enter services through organic growth or exploring for new avenues in the form of alliances or acquisitions.

Research on the movement of firms along the product service continuum classifies product service systems into three categories: product oriented services, use oriented services and result-oriented services. This classification provided by Tukker, 2004 has been identified as the most optimal method [67]. Within the context of this paper, we study product-oriented services that highlight the services provided by firms that complement its existing product offerings and that
of the advisory and consulting services [111] provided by firms that increase the value realized out of its product firms. We limit our study to the product-oriented services category as we are focusing on the propensity and mode of entry that requires firms to have already established a foothold in the product domain. Thus the service offerings in this context are directly or indirectly complementary to its existing product offerings.

In addition to the former, the service offering in question would offer greater value in conjunction with the firm's product offerings than that realized when offered as standalone entities. The service offerings in this case are not limited to post sales service or after sales support, but includes development of a strategic service offering that would align with the firm's long-term strategy. In addition to the above, the complementary service offerings in this context are those that could potentially form the foundation for an integrated product-service architecture that could potentially evolve into an ecosystem.

Services in this context could manifest as media delivery avenues and content delivery tools that support the firm’s existing offerings such as Microsoft's Xbox Live and Sony's PlayStation Network which complement their console offerings or such as that of Apple's iTunes, which complements its iPod and iPad. Services could also manifest as support for customers and users through a user network that generates awareness of the firm’s offerings and offers troubleshooting services. The developer networks set up by SAP and Microsoft, in addition to providing guidance to consumers and users also help in forming a body of knowledge of the firm's products.

The paper develops a two-step approach to the way firms enter services. The first highlights the factors that influence the firms to undertake the decision to enter services and the second provides an overview of the mode in which entry actually occurs. The first step of the model highlights the influence of level of vertical integration, market size and the position of the firm’s product offerings in the product development lifecycle in determining the propensity of firms to enter services. The second step of the model identifies the mode in which the entry occurs. At this step, the firm status, presence of industry standards and the degree of modularity in the firm’s product offerings drive the product specific choice.

We study both the propensity of firms to enter and the mode of entry owing to two reasons. First, due to the sequential nature of the propensity to enter and the mode of entry, it is vital that the two steps are in sync with the overall firm strategy; this hinges on our factors of the level of vertical integration and firm prestige, which signals [48] the firms resource capabilities and ability to survive the transition. The second is that of the relation between the market size that influences the propensity to enter and the prestige of the firm that influences decision on the mode of entry as more reputed firms would be able to enter and survive even smaller markets in an effective manner.

2. Literature and propositions

Within the framework of this paper, firm transitions into services can be considered as relative diversification undertaken by firms. In the space of technological diversification, firms were found to be more likely to diversify into businesses that are within the space of its existing resources and capabilities even in the face of more opportunities facing the firm in an unrelated space [47]. Firms that undertake the transition to services do so due to three key reasons; first, firms tend to focus more on their core business and outsource the non-strategic activities therefore requiring more services. The other reason is the recognition of the value of services as a source of competitive advantage and additional revenues [39].

The transition however, is accompanied by a number of challenges such as identifying the potential financial benefits, identifying competencies and failure to deploy an optimal strategy [34]. In addition to the former, the value realized out of such a transition was not immediate, but required firms to hit a certain critical mass of service offerings before obtaining any significant value [21]. This could possibly be attributed to the fact that unlike entry into product development, service capabilities are more intangible [20], need to be cultivated over time and are more inimitable due to time compression diseconomies [16].

The key challenge in classifying the type of service and measuring services is its intangible nature and its simultaneous production and consumption [20] [10]. The intangible nature of services pose unique challenges in measuring the quality or magnitude of services and this is particularly amplified for knowledge intensive services in comparison to capital intensive services.

Table 1 provides an overview of the typology of product services systems.

2.1 Propensity of firms to enter services

In the space of service transitions, firms can either develop a peripheral service, related to its
core operations or develop a stand alone, unrelated service. The efficiency of this transition was found to be greater for related service transitions owing to increased levels of asset complementarity [26]. Due to the intangible nature of services, a firm's ability to develop dynamic capabilities and in incorporating the changes in a timely manner could have a significant role in determining the success of its entry to services. The limiting factor has been identified as the absorptive capacity of the firm [13] and that these capabilities would have to be built over time and are subject to time compression diseconomies [16].

One of the driving factors in determining the efficiency of firm transitions is the extent to which a firm is connected to its subsidiaries. Firms that enter services do so with an aim to grow both in a temporal and spatial direction [44]. In addition to the above, services are deemed perishable, i.e., firms are unable to inventory or store services [20] and this requires greater control under conditions of uncertainty [9]. Firms entering territories where the degree of intangibility is high, subject to high levels of volatility and asymmetries in bargaining position were found to adopt a vertically integrated framework [23]. In proposing additional avenues for service firms to grow, integration into a larger system has also been suggested as one of the modes of entry into service firms [10]. Thus we posit the following:

**Proposition 1:** Firms with high degree of vertical integration have a greater propensity to enter services.

The other firm specific attribute that influences the propensity of firms to enter the service segment is that of the market size. Studies on firm entry into new segments have highlighted the fact that firms entering competitive markets would do so with the least amount of resource commitments owing to the uncertainty in the market [24]. While the niche width theory identifies the approach adopted by organizations and attributes it to the extent of competition, the outcome of this competition in a given domain influences the possibilities in other domains of operation of the firm [37]. Within scale economies, in areas that are not targeted by large players, firms can enter and survive in less concentrated markets while co-existing in the same space as other players [11]. This coupled with the fact that, owing to the reduction in costs due to commoditization particularly in smaller markets, firms would have to compete on the overall value delivered rather than just along the lines of price [28].

While the market potential manifesting in the form of size and growth has been identified as an influential factor in firms entering new geographic markets [51] [3] [69]. The larger market condition that influences the entry has been identified as the number of firms operating in the market [69] [88]. The choice to enter is driven by both the market size and competitor density. Firm density in a given market has been known to significantly influence the likelihood of entry and exit of firms from markets [95][83].

While firms could differentiate themselves by offering services in crowded markets, the entry might be met with significant challenges in concentrated markets where they are faced with both uncertainty and competition on the cost front. Thus while the competitor density might signal the existence of opportunities, it could also discourage firms looking for specific unique entry opportunities [88]. Increased market size has also shown to increased levels of resource commitment by firms [79] [17].

Building on the population ecology and firm entry choice studies highlighted above, we posit that firms enter services regardless of the competition density provided the market is large enough to accommodate additional firms, this can be adequately explained by the arguments proposed by the niche-width theory. To this effect, firms also have a greater chance of entering the service segment regardless of the market size, provided the competitor density in the industry is lower. Thus we posit that,

**Proposition 2a:** Propensity of firms to enter services is high for large markets when the competitor density is high.

**Proposition 2b:** Propensity of firms to enter services is low for small markets when the competitor density is high.

While the above factors are firm specific, the product specific factor of the stage of the product life cycle, which the firm’s product offerings are present, could play a significant role in determining the propensity of firms entering the service industry. Even at the industry level, Porter [38] identifies the influence of maturity of the product on the firm's objectives and the mode in which firms change their strategies as the product matures. The product lifecycle stage has also been an important indicator of firm objectives in both the marketing and strategy framework [4] [15].

Research has indicated that firms that enter new markets in the growth stage have a higher likelihood of survival [2], higher rate of reaching their asymptotic
sales [45] and that the stage of lifecycle entry has a moderating effect on the position in the market share [15]. Also, in the mature stages of the product lifecycle, the differentiating factor for firms lies in the networks established with customers and partners rather than the incremental innovations [57]. Firms are also known to place more emphasis on the process innovation in the mature phase as the only mode of separation in a commoditized segment was by catering to the "service distinctive type of users" [27]. Thus we posit the following:

Proposition 3: Product firms have a greater propensity to enter services during the growth phase of the product lifecycle.

2.2 Mode in which firms enter services

While the above propositions highlight the propensity of firms to enter services, we now discuss the factors influencing the mode in which entry occurs. The challenge to identifying the mode in which firms can enter services is that there is no consensus on the difference between the approaches taken by the product and services firms. While studies are consistent in identifying similar factors that influence the decision, there is still no common ground identified on the nature of the firm. To this effect, the paper tries to address the gap by providing an overview into the factors that influence the mode of entry, particularly when product firms enter the service segment.

The key challenge firms face when entering a new market is that of uncertainty in both the market and the customer expectations. Unlike products that are tangible in nature, services are perishable and intangible and are accompanied by an additional level of risk. The only known entity when firms enter new segments is that of the firm's reputation and capabilities, thus while firms might not be completely aware of customer expectations, the customer too is uncertain about the quality and efficiency of an intangible offering such as service from a new entrant.

Firm status has been used as an indicator of its ability in forming alliances [49], ability of firms to obtain resources [50], and the mode of market entry [33]. Firm status is defined as "as the perceived quality of that producer's products in relation to the perceived quality of that producer's competitors' products" [36]. Thus when a firm diversifies into new avenues, in this case the entry into the service segment, it leverages its reputation to signal its capabilities to its customers and competitors. In a study of professional service firms, it was found that reputation played a significant role in influencing firm performance and was the backbone for the strategic decisions undertaken by the firm [22]. Firm status has also been identified as a factor in increasing the survival of firms in crowded industries [36]. In addition to the above, firm status is an avenue to developing new technological avenues and establishing pathways for future growth [37]. Thus in the context of the paper, while firm status aids product firms in diversifying into service industries, it can also be a pathway for firms to develop its capabilities in the service segment and hone them into delivering complete solutions.

While lower status firms would have to rely on either developing service capabilities in house or pooling resources with similar status firms to enter services through mergers or form strategic alliances, higher status firms could be better suited to enter services through acquisitions. This can be attributed to two key reasons, first, while the acquisition of a related service firm would fit in the larger firm strategy, a failure in the service segment might not necessarily affect the firm in an adverse manner as the firm would leverage on existing resources and capabilities into advancing its product offerings.

The other factor that would drive higher status firms to enter services through acquisitions is that the higher status firms tend to have access to higher levels of capital that affords them greater ability to undertake risky endeavors such as entering into newer segments. Offerings from lower status firms such as SoundJam, which has evolved into iTunes, Navision which evolved into Microsoft Dynamics and, Keyhole Inc., which found greater recognition in the form of Google maps, highlight the fact that lower status firms could also gain significant advantages in form of increased recognition and access to capital if they chose to get acquired by larger firms. Thus,

Proposition 4a: Higher status firms have a greater propensity to enter services through acquisitions.

Proposition 4b: Lower status firms have a greater propensity to enter services through alliances or by being acquired.

The other product specific factor that influences firm's entry into services is that of the presence of a industry standard or an established dominant design. Building on the framework established by [53], [1] which highlight the fact that firms compete among each other along the lines of establishing alternate designs in the early stages of the product development process. Once the product matures and the competition shifts to that along the line of prices, firms can distinguish themselves by delivering additional value
in the form of services. Emergences of dominant designs are accompanied by a decrease in the number of firms owing to the larger players leveraging on the economies of scale. The emergence of a dominant design is accompanied by establishment of standards in the given product space. This affords firms both market power and bargaining power [17]. These standards that could manifest in the form of intellectual property rights minimize the risks associated with the capital-intensive investments made by firms.

Prior research has found that low levels of asset specificity is accompanied by firms entering service markets through joint ventures, while firms enter service markets solely on their own under conditions of high levels of asset specificity [40]. The standardized architecture also enables efficient coordination and reduces the need for constant managerial supervision resulting in a higher degree of autonomy to the development process and also minimized administrative costs [41]. Thus

Proposition 5a: Firms have a greater propensity to enter services through alliances in the presence of industry standards.

Proposition 5b: Firms have a greater propensity to enter services through organic growth or acquisitions in the absence of industry standards.

While the presence of an industry standard or dominant design mitigates the risks associated with the capital intensive investments made by firms, it does not exclude it from competition at the market level. Literature has highlighted the fact that the firm boundary is limited by organizational constraints [12]. Within a modular setting, a firm can expand infinitely as a function of independent unit with a common factor that connects it back to the parent organization. Firms that have increased levels of modularity choose to do so to compete along the lines of pricing as modularity induces high levels of standardization of the components providing an edge to firms.

On the other hand firms that target premium segments who choose to distinguish themselves have lower levels of modularity as a means of providing a sense of uniqueness to the consumer. This has been highlighted in a multitude of industries such as the automobile industries [5], personal computer industry [6] and in energy efficient building construction [46]. In products exhibiting low levels of modularity, firms would prefer to grow service competencies organically owing to the fact that the associated capabilities developed would aid in developing firm capabilities further. The other benefit to this is that any residual capabilities attained over the course of development of these competencies could be incorporated in the firm practices and aiding the firm in developing complete solutions in a much more efficient manner. Thus,

Proposition 6a: Firms have a greater propensity to enter services through alliances in the presence of high level of product modularity.

Proposition 6b: Firms have a greater propensity to enter services through organic growth or acquisitions in the presence of low level of product modularity.

Tables 2 and 3 provide an overview of the existing research in the field that drives the propensity of firm entry and the mode of entry into services.

3. Proposed research methodology

While the paper proposes a theoretical framework to evaluate the propensity and mode of entry into services, to empirically test the propositions, we would have to rely on qualitative methods consisting of a combination of case studies and text based analyses to drive our arguments. Building mainly on the approach used by Oliva and Kallenberg (2003), a vast majority of research [34][113][66][94] on the firm transitions into services has relied on the case study methodology to evaluate firm transitions into services. This approach has been deemed optimal to study the mechanism of firms and the mode in which firm decisions are made [78] [81]. While a vast majority of studies have relied on interviews with executives within specific firms, we expect to use the text-based analysis approach [63] for identifying instances of firms entering into services and the method adopted. This would provide us with a comprehensive overview of the transition for a larger sample of firms that would help us better drive our arguments.

4. Discussion

Product firms have been evolving into a hybrid set up with both product and service offerings over the last few decades. There is considerable gap in the literature identifying the factors influencing this decision. The paper tries to identify the factors that influence a product firm to enter the service industry.

While the traditional arguments to this transition have been from the related diversification, transaction cost economics and the firm capabilities perspective; we include the industry specific and product specific factors that influence the entry into services. This transition is not limited to just one industry, in a study of the PC, locomotive and the automobile industries,
the revenue from the initial sale of the product was only a small part of the total value of the revenue generated by the product over the usage cycle [58].

From the competitive perspective, owing to the high level of commoditization, firms strive to compete by delivering deliver better value to the customer. This transition also can also be seen as the shift from services being treated as a loss-leading endeavor to that of a new source of revenue [43].

5. Limitations and future research

While research [25][35][59][61] has highlighted the challenges associated with accurately measuring services to its intangible nature, another limitation to our study is in the specifics of defining services. Research [77] has highlighted the fact that some activities associated in the development of the product and in supporting it such as product design research and development can also be treated as services when viewed from outside the firm. When these functions do not support the core operations of the firm, they could potentially be marketed as services. Our research does not factor in cases where firms market these activities as services.

While service offerings in niche segments, such as developing services around a specific product can be construed as entry into services; the efficacy of such a transition into a product specific service would need to be explored. The other challenge is that, we can only evaluate firm transitions for which entry occurs. Thus in the case of non-entry, we cannot identify factors that led to this decision as firms would not be willing to identify the specific limitations that influenced the choice.

The firm movements along the product-service continuum studied in this paper are limited to only the product-oriented services and in the transition of product firms into services, there are three key avenues of extending this research. The first is that of evaluating the firm transitions towards use oriented services such as leasing; as in the automobile and the airline industries, hosting of applications and content in the cloud computing domain.

The other classification, which is the result-oriented service, which is outsourcing or pay-per-use mode, can also be evaluated from the perspective of firm transitions. While this approach has been in place for non-core activities of the firm such as logistics or maintaining office supplies and catering, the transition into services directly linked to its core activities haven't been fully evaluated.

The second avenue that merits further evaluation is the upstream movement of service firms into product offerings. While the movement of firms along the product-service continuum could be bi-directional, very few firms can successfully undertake this transition. An example of this would be the IT service firm Infosys technologies, which developed the banking software, Finacle, from its accumulated operational knowledge of their banking clients. Such an offering could help firm’s position themselves as complete solution providers. This transition could also be aided by the fact that these firms would have established their capabilities in the service segment and could leverage on this to effectively market their product offerings.

The third avenue would be to study the interaction of the factors chosen for the development of the propositions in this paper. For example larger firms tend to have a high level of vertical integration and hence are more likely to be high status firms, which could potentially impact both the propensity of entry and mode of entry. A second potential interaction could be between the degree of modularity and industry standards. While a high degree of modularity might imply the existence of industry standards, this could also influence firms to be less vertically integrated, as there could be a high degree of commoditization. Another potential interaction that could drive the transition could be that of the interaction between the level of modularity and the relative position of the product in the stage of growth, more mature products tend to be modular in nature and this would drive firms to compete through other avenues in order to differentiate themselves.

6. References


Table 1: Typology of Product Service Systems

<table>
<thead>
<tr>
<th>Typology of Product Service Systems</th>
<th>Based on nature of consumption or delivery</th>
<th>Based on firm positioning</th>
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<tbody>
<tr>
<td>Based on the degree of separation between production and consumption as hard and soft: Erramilli (1990); level of customer contact: Chase (1981):</td>
<td>Core services and peripheral services: Carman and Langeard (1980); Extent of tradability in international markets: Boddewyn et al., (1986)</td>
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<td>Degree of interaction between the provider and consumer and, the mode of delivery: Vandermerwe and Chadwick (1989); Capital intensive vs. Knowledge intensive services: Contractor et al., (2003)</td>
<td>Purely goods or purely service oriented; combination of goods and services; and bundling of goods and services: Vandermerwe and Rada (1988); Martin and Horne (1992)</td>
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<tr>
<td>Specific classifications derived from Sanchez et al., (2007)</td>
<td>Firm offerings such as customer service, product services and offering services as a product: Mathieu (2001)</td>
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### Table 2: Factors Driving Propensity and Choice of Entry Mode

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<tr>
<th>Propensity of firm entry</th>
<th>Transaction cost theory</th>
<th>Density dependency</th>
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<tbody>
<tr>
<td>Change in the core domains through entry into markets for new goods &amp; services: Levine and White (1961); Thompson (1967)</td>
<td>Market size can be used as a proxy for transaction frequency: Williamson (1979, 1985)</td>
<td>Firms shift their goals from legitimation (establishing a foothold/identity) to competition as the competitor density increases: Hannan and Freeman (1977); Hannan and Carroll (1982)</td>
</tr>
<tr>
<td>Entry into new activity through changes in organizational structure &amp; processes: Ramanujam &amp; Varadarajan (1989)</td>
<td>Market size can be used as a proxy for transaction frequency that drives the propensity of firms to internalize: Williamson (1979, 1985)</td>
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<tr>
<td>Entry mode</td>
<td>Entry mode for product firms vs. service firms</td>
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<td>Equity and non-equity modes: Pan &amp; Tse (2000); implementation of entry strategies through marketing, or through complete production and marketing; via contracts or JVs or establishing completely in new markets: Sharma &amp; Erramilli (2004); Canabal &amp; White 2008</td>
<td>Driving factors: Ownership advantages entailed, location advantage of the market (including size and growth rate) and Internalization advantages (level of vertical integration): Agarwal &amp; Ramaswami (1992); Terpstra &amp; Yu (1988); Caraman &amp; Langeard (2006)</td>
<td>Entry into high proximity services (hard services) between providers and receivers is similar for both; while for low proximity services (soft services) it is usually with a partner: Erramilli (1990); Erramilli &amp; Rao (1990, 1993); Brouthers &amp; Brouthers (2003)</td>
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### Table 3: Industry and market level attributes driving propensity and choice of mode of entry into services

<table>
<thead>
<tr>
<th>Industry and firm specific factors driving the propensity and choice of mode of entry</th>
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<tr>
<td><strong>Risk mitigation</strong></td>
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<td><strong>Industry concentration</strong></td>
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<td><strong>Market factors driving the propensity and choice of mode of entry</strong></td>
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<td><strong>Potential</strong></td>
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<td><strong>Growth</strong></td>
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<td><strong>Market size</strong></td>
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