

MAP-IT: A MODEL OF INTERMEDIARY INTEGRATION STRATEGIES IN ONLINE MARKETS

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Abstract

We propose a model for understanding the structural conditions under which intermediaries in online markets choose their strategies, roles and functions. The fundamental concept behind these choices is *integration* – vertically and horizontally. Integration is a complex, multidimensional concept including strategy, model (governance) and form (firm boundaries). Five dimensions constitute our integration typology. We identify a set of structural conditions concerning **markets**, **actors**, **products** and **integrated transactions** that relate to this integration typology: the **”MAP-IT model”**. With this model, we explain how intermediaries choose to organize their businesses in different markets. Our model is built on a theoretical framework as well as evidence from online markets. We demonstrate the use of our model by applying it to the online financial advice market. The application reveals how structural conditions give intermediaries several integration options.

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1. Introduction

Markets play a central role in economic activity. In economic theory a market is defined as "the set of suppliers and demanders whose trading establishes the price of a good" (Stiegler and Sherwin, 1985). This definition focuses on a market as an allocation mechanism. Commerce, however, is a matter of transactions directly or indirectly related to the acquisition of products and services in a market, irrespective of whether these goods or services are finally acquired. In order to study how online commerce shapes market relationships and changes the way commerce is performed, we need to observe and describe actual transactions. We shall use the term *marketspace*¹ (Rayport and Sviokla, 1994) to denote the social and economic environment in which online transactions in a market take place. *Marketspaces* have vertical and horizontal boundaries. What determines these boundaries, that is, integration of steps in the value chain, the varieties of products and services transacted, etc., is not obvious.

A central issue in economic theory is how transactions along the value chain are organized. Transactions can be organized internally under hierarchical control, by contractual relationships between parties (e.g. alliances), or by market exchange. Organization of transactions along the value chain is known as vertical integration. Transaction cost economics (Williamson, 1985) has been the dominant theoretical framework to decide on vertical boundaries of firms. However, other theoretical frameworks such as governance-theory which focuses on control and asset ownership (Grossman and Hart, 1986) or social exchange theory looking at trust and power (Young –Ybarra and Wiersema, 1999), have also been used to study market relationships.

The horizontal boundaries of a *marketspace* identify the varieties of products and services transacted. Horizontal boundaries differ across *marketspaces*, and across firms participating. Firms may expand horizontally by diversifying to exploit economies of scale and scope, or by bundling products and services to provide customers "one-stop shopping".

¹ The terms "marketspace" and "online markets" are used interchangeably in this paper.

An issue having received much attention among researchers is what effect electronic markets will have on the organization of value chains. Based on transaction cost theory, Malone et al. (1987) argued that information technology reduces coordination costs in a transaction and therefore leads to more efficient markets. This has become known as the "electronic market hypothesis" (Chircu and Kauffman, 1999). As a result there is a move from internally organized value-creating activities towards market transactions, and vertical disintegration of value chains is to be expected. Furthermore, changes in market structures will lead to new ways of doing business where traditional intermediaries may be threatened, known as "disintermediation" (Chircu and Kauffman, 1999).

The possibility of disintermediation raises important questions about the impact of online market relationships on the role of intermediaries. Despite the electronic market and disintermediation hypotheses, new intermediaries facilitating ecommerce on the Internet emerge. Bakos and Bailey (1997) claim that in order to study intermediation in electronic markets, it is necessary to look at the new roles and functions emerging by online intermediaries. Based on a literature review, they identified four important roles of market intermediaries: aggregate, agent of trust, facilitate and match. Later, Bakos (1998) presented three main roles. First, as a meeting place for buyers and sellers for presentation of product offerings, aggregation of products, search and price discovery. Second, as a transaction facilitating mechanism including logistics, settlement and trust; and third, as a legal and regulating infrastructure. In recent years, we have seen a tremendous growth in new, electronic intermediaries that take advantage of the special features of online markets for efficient transaction processing and value-added services to both sellers and buyers. The literature describing these new intermediaries is very fragmented and lacks a theoretical framework. A few exceptions exist, for instance, Timmers (1998) who classifies business models according to functional integration and innovation.

The aim of our research is to develop a *taxonomy of integration* in online markets. A model is presented that relates integration to structural and behavioral conditions in the market space. Our research is based on a literature survey on online intermediaries

as well as on economic theory. The use of the model is demonstrated by applying it to the online market for financial advice, planning and management.

2. MAP-IT: a Model of Integration Strategies

As shown above, integration is a special feature of marketspace boundaries and relationships. Furthermore, we have seen that intermediaries can fulfill several roles and functions, thus integrating tasks ranging from aggregating seller and buyer information, facilitating transactions, building trust, and providing customer services. Thus, integration is a key concept in describing and explaining the roles and functions of online intermediaries.

Integration, however, is a complex, multidimensional concept. The first dimension is who is likely to initiate integration; the second dimension is the direction that the integration will take; the third dimension is the kind of strategy that the integrator is likely to apply; the fourth dimension is the integration model (governance mechanism) employed to control transactions; and the fifth dimension is the integration form that defines the boundaries of the marketspace. These dimensions are described by a five dimensional integration typology: 1) integration initiator: seller, buyer, or independent; 2) integration direction: vertical or horizontal; 3) integration strategy: focused or undifferentiated; 4) integration model: mediator, agent, distributor or hierarchy; and 5) integration form: vendor aggregation and integration, information integration, customer integration, vertical marketplaces, and functional integration. The elements of this typology are explained in more detail below.

As discussed above, vertical and horizontal integration is determined by structural conditions of the market and intentional choices by the participants. These conditions and choices are related to market structures, participants, kinds of products and services exchanged in the market, and the specific transactions involved in the exchange. At this stage it is not clear how integration maps with these conditions in specific markets. We have, however, developed a taxonomy, called *MAP-IT* (Pedersen and Methlie, 2000), that represents a first step towards a theory of the relationships between structural market conditions and intentional choices on the one side and integration on the other. MAP-IT contains the following four conditional

dimensions: **M**arket, **A**ctors, **P**roducts and **I**ntegrated **T**ransactions. The two most important *market* related conditions are market fragmentation and marketplace knowledge. *Actor* related conditions are cost and income models, and opportunities for exploiting scale and scope economies. *Product* related conditions are category, complexity and differentiation potential in online markets. Finally, the *transaction* related conditions are transaction risk, transaction standardization and transaction frequency.

In this paper, we draw on theories from several fields that have been used to explain commerce in online markets: microeconomic theory, transaction cost economics, social exchange theory, production cost theory, electronic market theory and various phase models. In section four, these theories are used to explain how structural conditions inhibit or promote integration in online intermediaries.

The MAP-IT model is shown in figure 1 below.

< Figure 1 here >

3. The Integration Typology

This section describes the elements of the integration dimensions that make up the integration typology for intermediaries in online markets.

Integration initiator can be a seller, a buyer or an independent participant. An example of a seller-initiated marketplace is Cisco's Marketplace where buyers get assistance on configuring and ordering Cisco's networking products. GE's GETradeWeb is an example of a buyer-initiated marketplace, while eSteel is a marketplace initiated by an independent intermediary creating shared values for both buyers and sellers.

Integration direction refers to integration along value chain activities – vertical integration, or across value chains – horizontal integration. Horizontal integration takes place at a certain stage of the value chain. What can be integrated is, however, manifold, for instance goods, services, information, customers or functions. One

example of horizontal integration is a virtual community where customers' interests are integrated. Vertical integration implies that functions previously taken care of by participants upstream or downstream, are integrated. Vertical integration aims at channel efficiency in vertical markets. Recently we have observed a growth of integrators² in many vertical markets. Some of these have their origin in strong sellers or buyers, and function as hubs in markets with low fragmentation and high product complexity. An example of a vertical integrator is GETradeWeb where General Electric aggregates sub-vendors. Another type of vertical integrator is the independent trading exchanges, which set up many-to-many relationships in fragmented markets. An example of this type is CommerceOne's MarketSite.

Integration strategies refer to product/market segmentation and follows Porter's division into focused and undifferentiated (cost leadership) strategies (Porter, 1980). Integrators following undifferentiated strategies base their income models on scale and scope economies. Undifferentiated strategies are applied by larger e-shops such as Wall-Mart and by information portals such as AOL. Focused strategies imply segmenting the customer base, and income models are based on higher prices for higher quality products and services. An example of an integrator with a focused strategy is the portal CNet.

Integration models describe governance structures of the transacting parties. We shall use four types of models to describe different types of structures: mediator, agent, distributor and hierarchy, the sequence indicating increased degree of transaction control. In the mediator model the relationships between actors are very loose. The intermediary mediates a request from a buyer to a seller with no responsibility of further transaction processing. The agent model depicts an integrator that acts in the principal's name. Here, a purchase agreement is made with the integrator who does not own the product sold or take any warranty responsibility for it. An example is TransPoint that serves as a bill presentment agent. The third model is the distributor model where the integrator sells products and services in its own name. Distributors can be wholesalers or retailers (e.g. Amazon). This model is well known from the physical marketplace. The fourth model is the hierarchy model where the integrator

² The term "integrator" is used of intermediaries with a business model based upon integration.

takes ownership of, and fully control, the transactions between steps in the value chain. Also, we find integrators that apply different models to different products and services. E*trade, for instance, organizes banking services according to the hierarchy model (Telebank), and card services according to the agent model in cooperation with Visa and FirstUSA.

Integration forms depict the kinds of integration and aggregation that can be identified at the supply side and the demand side. We have identified six archetypical integration forms each of which is described below.

1. Vendor aggregation is well known from traditional marketplaces in the form of wholesalers and retailers and can be done on products or services separately, or on a combination of the two. Several researchers have pointed out that online markets will create a new basis for differentiated strategies in product aggregation (Bailey and Bakos, 1997; Clark and Lee, 1999; Giaglis et al. 1999).
2. Vendor integration is the bundling of complimentary products and services that constitute a more comprehensive solution to a buyer. An example is bundling of software products. A special form of vendor integration is bundling of products and services together. Amazon, for instance, provides tracking services, book reviews, etc. along with books. A more recent example of integration of product and services is the microwave oven with Internet banking facilities launched by NCR's knowledge lab. The economic argument for vendor integration is reduced production costs in general and extremely reduced production costs for digitized products and services in particular (Bakos and Brynjolfson, 1997).
3. Information integration has probably been the most widespread form in online markets so far. It may be push-, pull- or management-based. Electronic newspapers with personalized content is an example of push-based integration, while pull-based integration is found in search engines (Alta Vista) and catalog services (Yahoo). The information content of the catalog service intermediaries has grown considerably on the Internet, giving rise to what has come to be known as portals. Management based information integration is performed when the intermediary takes responsibility for managing information about buyers and sellers on their behalf. Engage and

AllAdvantage are examples of intermediaries that manage personal profiles, and DoubleClick is an advertising management intermediary.

4. Customer integration is based on aggregating customers' needs or interests. This is also well known from the traditional marketplace known as cooperatives. Hagel and Armstrong (1997) introduced the concept of virtual communities. Internet technologies for creating horizontal customer integration are email, bulletin boards, and chat rooms. These technologies can be used to establish discussion forums, FAQ-services, search services, etc. Intermediaries for transaction oriented customer integration are normally limited in functionality. Examples of this type are Mercata, Priceline and CoShopper that facilitate cooperative buying with the objective of increasing the power of buyers relative to the sellers. Another type of horizontal integration is the collaborative forums organized across firms around business tasks (projects, etc.).
5. Vertical marketspaces organize transaction facilitation along the value chain and are typically found in business-to-business commerce. Vertical markets vary with respect to market fragmentation and product complexity. Therefore, we find considerable variation in integration forms. Latham (1999) outlines four models: Disintermediated exchanges (Dell) where both fragmentation and complexity are low; affiliated-based exchanges where fragmentation is high and complexity low (Ariba, CommerceOne); hub-based models where fragmentation is low and complexity high (GMTradeXchange) and finally, independent trading exchanges where fragmentation is high and complexity is high (e-Steel, PaperExchange). Hub-based integrators operate in biased markets (one-to-many), hierarchically integrated or contractually related to either a powerful seller or a powerful buyer. Further description of the hub model can be found in Kaplan and Sawhney (1999). Timmers (1998) describes an intermediary called a "value chain integrator" that integrates multiple steps of the value chain, with the potential of exploiting the information flow between those steps. So far we have seen few examples of this kind. MySAP, however, integrates transaction processing across vertical boundaries in the value chain. I2's TradeMatrix is another example where the supplier organizing the marketpace provides value chain management as an integrated service.

6. Functional integration refers to the *number of functions* provided by an intermediary in the marketspace. As described above, many authors have identified such functions based on empirical studies of the marketspace (Clark and Lee, 1999; Bailey and Bakos, 1997; Chircu and Kaufman, 1999; Latham, 1999; Timmers, 1998). However, a more theoretical framework is needed. We have found the “customer resource life cycle”-model (Learmonth and Ives, 1987) to be a good framework for studying functional integration. This framework identifies functions to be performed in the pre-purchasing, purchasing, and post-purchasing phases of an acquisition.

4. **Structural Market Conditions**

In this section we shall describe the conditional dimensions of the MAP-IT model in more detail.

The two most central *market*-related conditions that impact on integration are market fragmentation and marketspace knowledge requirements. The degree of market fragmentation influences both integration direction and integration initiator. In markets with low fragmentation with few, dominant sellers or buyers, we expect to see these participants as initiators in vertically integrated value chains, either upstream or downstream. In these markets hub-based intermediaries emerge (Latham, 1999; Kaplan and Sawhney, 1999). Markets with a few dominant sellers and a fragmented intermediary structure will most likely end in disintermediation. The integration model here tends toward the hierarchy model (Bailey, 1998; Giaglis et al., 1999). Marketspace knowledge has three components: ecommerce technology (e.g. ASP) required to operate in the marketspace; ecommerce business knowledge required to understand how to create customer values in online networks (network externalities, etc.), and domain specific knowledge related to products and services provided (e.g. financial analysis knowledge). Marketspace knowledge affects the integrator’s choice of integration strategy and integration direction. For instance, value chain integrators normally follow a focused strategy that is vertically oriented.

The *actor* dimension is a description of specific business conditions related to the market participants such as income and cost models, and scale and scope economies.

The four major costs associated with integration include production, distribution, coordination and transaction costs. The first two cost components determine the technical efficiency while the latter two determine the agency efficiency (Besanko et al., 2000). In markets where agency efficiency relative to technical efficiency is low, we expect to find the seller as the integration initiator. Bakos and Brynjolfsson (1997, 1999) have studied markets of information goods based on traditional cost theory. They show that bundling will be advantageous where marginal costs are low. According to Sarkar et. al. (1998), horizontal integration is promoted in the marketplace by low production costs required to establish such forums compared to high coordination costs found in traditional markets. From this we may deduce that new intermediaries will emerge that perform distribution functions based on customer integration. Another argument for customer integration is found in lower coordination costs in online price discovery mechanisms, for instance online auctions (Giaglis et al., 1999). Some researchers have studied the effect of income models on integration. Dewan et al. (1999) concluded that in markets where income models are based on traffic, one finds some dominating intermediaries employing undifferentiated strategies (e.g. AOL) and many small ones with more focused strategies. The third category of actor- related conditions that influence integration is scale and scope economies. Economies of scale and scope exist when a company achieves unit-cost savings. This can be obtained by increasing volume, by concentration or by acting timely. Scale and scope effects due to concentration come from marketplace knowledge, in particular domain knowledge. Timely actions are related to special features of networks, viz. network externalities (Katz and Shapiro, 1985) giving rise to first mover advantages.

The *product* dimension contains descriptive elements of products and services exchanged in the market. This dimension includes three elements: product categories, product complexity, and marketplace differentiation potential. Three product categories are considered: goods, services and information. Complexity is an important condition for integration. Generally, one may find that high complexity requires more focused integration strategies, and where domain specific knowledge is required, integration takes place along the vertical chain. Low complexity has the opposite effect on integration. Increased opportunities for differentiation, personalization and presentation of products in online markets will influence

integration. For example, increased opportunities for differentiation will most likely result in a market space with smaller, more focused integrators (Dewan et. al. 1999)

Finally, we have conditions related to individual *transactions*. This conditional dimension contains three elements: transaction risk, transaction standardization and transaction frequency. Transaction cost economics (Williamson, 1985) deals with transaction risks (contractual problems, hold-up problems and asset specificity) and various governance structures (integration models). If the transaction risk is high, the participants will apply integration models that reduce risk by increasing transaction control, for instance by vertical integration. Several authors have claimed that transaction risk is higher in online markets (Bailey and Bakos, 1997 and Clark and Li, 1999). Trust building is therefore an important function of the intermediaries and can create opportunities for new intermediaries. Transaction standardization may reduce transaction risk by avoiding lock-in effects. It affects integration in several ways. For example, it is easier for independent intermediaries to integrate transactions that are highly standardized. Transaction frequency has also been dealt with in transaction cost theory. Williamson (1985) claims that depending on asset specificity, the transaction frequency is important for the choice of governance structure. Thus, transaction frequency influences both integration model and integration form.

5. Applying the MAP-IT model to the online financial advice market

According to Franco et al. (1999), three different supplier types are found in the market for online financial advice: "transactors", "advisors" and "portals".

Transactors relate their financial advice to the transactional services that they offer. A typical example is online brokers such as Charles Schwab. Advisors are often specialized financial service providers, giving advice on, for instance, pension plans or tax issues. A typical example is DirectAdvice. Portals are highly integrated suppliers offering financial advice on a multitude of topics. Examples are Microsoft's MoneyCentral and Intuit's Quicken.com. In this section we shall look at the structural conditions of the financial advice market and discuss the integration aspects according to the MAP-IT-model, using Quicken.com as an example.

The traditional *market* for financial advice is highly fragmented with many buyers and suppliers. In the online market, however, the concentration of suppliers is somewhat greater, but the demand-side is still very fragmented with few integration elements exploited. Financial advice is an expertise domain requiring high degree of domain specific knowledge. Ecommerce technology can be bought, but ecommerce business knowledge is business specific. These structural conditions make integration likely to be initiated either by incumbents taking advantage of their existing customer base and domain specific knowledge, or by new participants with ecommerce technical and business knowledge. If the production process of financial advice can be reintegrated, the structural conditions are optimal for new intermediaries. The integration direction can be horizontal, for instance intermediaries providing loan term comparisons across several banks, or vertical by integrating steps along the loan execution process. In the case of horizontal integration, a traffic-based income model is favorable, while in the vertical case a transactional model can be applied.

Actor-related conditions are concerned with income and costs. Production costs represent a large part of total costs of providing financial advice in the traditional market due to extensive personal communication with customers. By transferring financial advice to the marketspace, personal communication can be replaced by personalization technology, thus reducing production costs substantially. Also, distribution costs are greatly reduced in the marketspace due to channel and scale economies. With reduced distribution costs, transactional income models can be supplemented with traffic- and subscription-based income models. A traffic-based model is suitable for an undifferentiated strategy, emphasizing the integrators independent role, while a transactional model is suitable for an integrator with a focused strategy.

Financial advice is an information *product* with high complexity because of a knowledge-intensive production process and a complex and customer-specific buying process. The complexity and the information content of this service increase the opportunities for differentiation and personalization. Also, the marketspace provides new opportunities for designing and presenting financial advice. As for information products in general, financial advice is well suited for reintegration of content in new bundles. However, this strategy requires knowledge of how information integrators

operate in the marketspace combined with domain specific knowledge. These structural conditions indicate a focused integration strategy. However, a focused strategy for a highly personalized service can be combined with undifferentiated strategies for other services. The choice of focused services must be based upon the integrator's domain specific knowledge.

Highly personalized financial advice entails relationship-specific assets and introduces *transaction* risks at both the buyer and supplier sides. Therefore, advice and brokerage services are often used as examples of when trilateral governance is optimal (Williamson, 1985). Furthermore, financial advice is not standardized in content and format. This makes bundling and vendor integration difficult, and it also complicates functional integration of financial advice with transactional services. The potential for system integration, however, is great. The transaction volume and frequency vary greatly among buyers, but are generally low. Due to high transaction risk, suppliers use the integration model giving the highest degree of control over focused services. Consequently, we may expect to find different integration forms for focused and undifferentiated services among financial advice integrators. This is illustrated in table 1.

< Table 1 here >

To illustrate how the structural conditions give different outcomes for the integration dimensions of the MAP-IT model, we will use Quicken.com as an example. Quicken.com is Intuit's online financial advice integrator offering financial advice and management services within investment planning, mortgages, insurance, tax planning, banking and retirement planning. Quicken.com's basis as an *integration initiator* in the online financial advice market is Intuit's strong position as a software provider. However, Intuit has previously not had any transactional services or branches in the marketplace. As such, Quicken.com represents a new intermediary in the online market for financial advice. Intuit's basis for operating as initiator is a combination of domain specific knowledge and ecommerce business knowledge. None of the traditional suppliers of financial advice has attempted to take a similar position. This implies that financial service content has so far not been a sufficient basis for initiating integration in this market. The closest example is Charles

Schwab's offering of online financial advice related to their online transactional services. Another content-based integrator in the same online market is Wall Street Journal's SmartMoney, but their services are based upon information, not financial content.

Until recently, Quicken.com used a distributor model for loan shopping. Now, Quicken.com has defined loan shopping as a strategic service and has acquired RockLoan, thus achieving a financial service provider position by vertically integrating upstream (*integration direction*). A similar example is found in tax planning where Quicken.com has integrated services vertically so that everything from tax planning to tax filing can be made directly from the Quicken.com site. However, Quicken.com also uses horizontal integration elements. Virtual communities have been created for discussing and sharing knowledge on most topics that are covered by Quicken.com. A different kind of horizontal integration is the MyAccounts "financial dashboard", where users can integrate statements from banks and other financial service providers in a unified "view". Simple transactions can also be made from this service but more complex transactions are controlled using the mediator model.

At first sight MoneyCentral and Quicken.com seem to be undifferentiated portals for financial advice, but further investigation of their *integration strategies* reveals differences in how services are focused. Quicken.com focuses on loan, tax and insurance planning, and its retirement planning services are more directed towards business users and small business owners than regular employees. MoneyCentral has a different focus providing services covering topics such as "college and education planning" and "smart shopping". This reveals a focused integration strategy directed at the family market by MoneyCentral and at the business market by Quicken.com. These different strategies can be explained by MoneyCentral's integration with the rest of the MSN portal, and Quicken.com profiting from a strong software brand name among business users.

Quicken.com combines different *integration models* for various services. With the acquisition of RockLoan, loan services is now controlled by an internal hierarchy and presented to the user as a vertically integrated service from loan terms comparisons to

loan execution. While MoneyCentral uses a mediator model on its Insweb for insurance planning and decision support, Quicken.com uses an agent model on its QuickenInsure (formerly Insuremarket) to more strongly control the transactions. For investment planning, however, MoneyCentral uses the hierarchy model and produces its own content, while Quicken.com uses the mediator model.

With the discussion above, it should come as no surprise that we find several *integration forms* combined at Quicken.com. At QuickenInsure, vendor aggregation is used, while vendor and information integration are used for the retirement planning services. Here, information services are integrated with pension services. For investment planning, information integration is used. We also find horizontal integration such as customer integration in virtual communities and vendor service integration in the MyAccounts service. The most complex integration forms are used for the focused services, for example, the provision of a vertical market space of 19 insurance providers on QuickenInsure. Another example of complex integration is the functional integration offered for loan planning and execution.

6. Conclusions

In this paper we have presented a first attempt at developing a model of intermediary integration. We have shown how integration is a multidimensional concept and how specific structural market conditions inhibit or promote integration. Applying the model to the market of online financial advice, we also showed how structural conditions give integration initiators several options in their choice of integration strategy, -model and -form. Even though initiators have several options, our model explains how the different integration dimensions must be *combined* in a manner consistent with the structural conditions of the market, actors, products, and integrated transactions. To further improve the MAP-IT model, we have started testing the model empirically in selected industries.

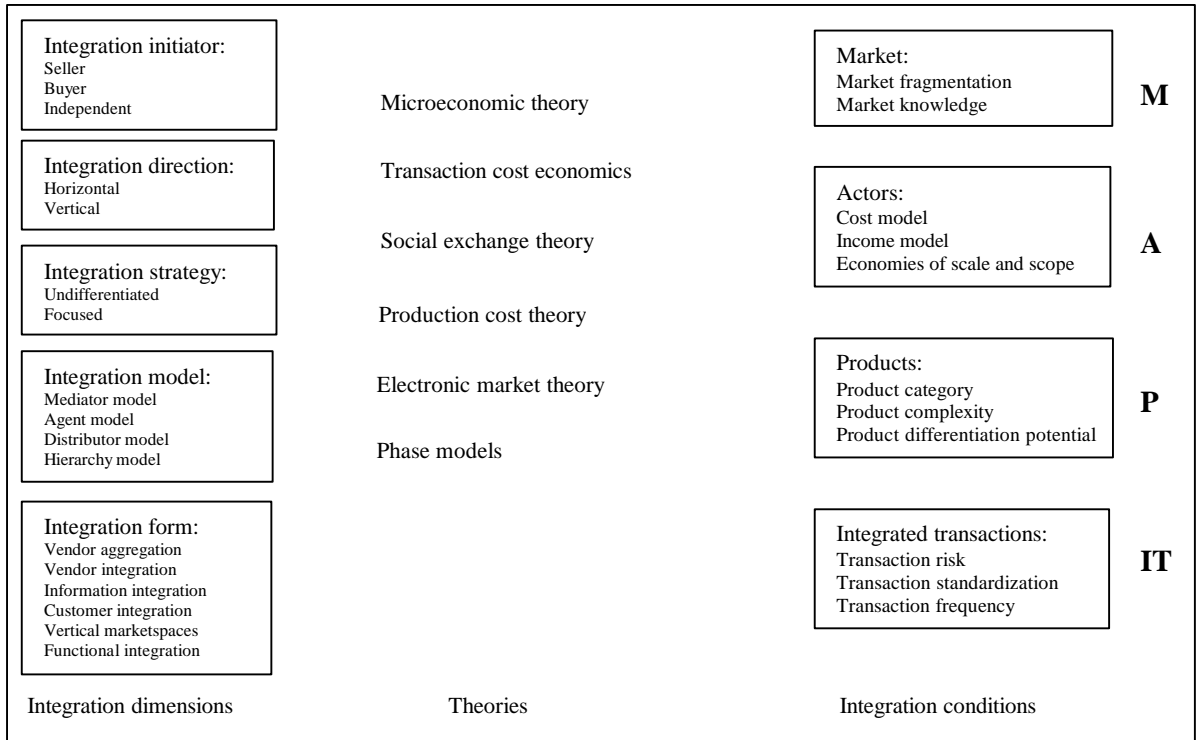


Figure 1. The MAP-IT model

Dimension	Focused services	Other services
Integration initiator	Integrator with industry specific knowledge	Integrator with marketspace knowledge
Integration direction	Vertical	Horizontal
Integration strategy	Focused	Undifferentiated
Integration model	Hierarchy model	Mediator model
Integration form	Vendor and function integration	Information integration and horizontal aggregation

Table 1. Alternative integration dimensions for financial advice integrators

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