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INTERNET ECONOMICS

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THE ECONOMICS AND BUSINESS MODELS OF PRESCRIPTION IN THE INTERNET

Pierre-Jean Benghozi & Thomas Paris

1. Introduction

A number of authors have helped to demonstrate the extent to which performance of e-commerce firms is based on their ability to design, control and manage an enormous amount of information on an ongoing basis so as consumers can easily grasp and understand goods and services provided. Thanks to the wide range of technologies made available by the Internet along with methods for appropriating these technologies, highly diversified economic infrastructures and business models, autonomizing specific economic functions, can be mobilized for the purpose of marketing a single product or service.

Highlighting and revealing the informational aspect of transactions is useful but not helpful enough in explaining current market configurations or the strategies that economic agents deploy. Buzzel (1985) shows, for example, how distributors and intermediaries acquired power over producers and get more influence as they moved from wholesalers engaged in buying and selling products to more complex forms of intermediation and prescription. mobilizing information and communications technology¹. More specifically, allowing consumers to compare products directly without having to rely on supposedly knowledgeable experts, the Internet changed the traditional role of the intermediary²; it no longer functions as just a distributor or expert consultant but also regulates transactions, promoting and prescribing goods and services. As a consequence, many authors have attempted to describe and provide characterization of the various forms of intermediation (Spulber, 1996 and 1999; Chircu and Kaufmann, 1999; Brousseau, 2002). For example, Gensollen (1999) identifies several different actors who can play an intermediary role: attractors, aggregators, converters (i.e. those who convert an audience into customers) and prescribers³.

Our premise is that the mechanisms at work in distribution and intermediation at stake in the business models existing on Internet should be assessed in terms of a *prescription economy*. By analyzing the markets in terms of prescription, i.e. the capacity of a firm to transform the potential request of a customer into a specific proposal of products, we can investigate the structure of a product or service supply, the decision-making process involved in purchasing, market configurations, and business strategies and models.

Analyzing intermediation and information markets in terms of prescription means considering three-pronged markets where prescribers are not simple intermediaries but third parties: they act alongside producers and consumers – not between them – in order to structure the product or service supply or to assume responsibility for some aspect of the consumer decision. If we proceed on this assumption, we can identify the market strategies and structures that characterize a prescription economy.

Our paper aims at proposing a model for prescription on a three-pronged basis, and at exploring the way it can be applied to explain the various strategies and business models used on the Internet. In the first part of this chapter, we shall present our model for prescription and the strategic variables actionable by prescribers. In the second part, these results will help us to characterize the various existing forms of prescription and to propose a typology of prescribers.

¹ This analysis of the impact of distribution and other downstream activities in the manufacturing sector complements work in the field of information systems, notably by Steve Barley (1986).

² An idea that has received renewed attention owing to the growth of the Internet and other activities that reflect the expanding role of the knowledge economy (cf. Peter Kollock, 1999; Eric Brousseau, 2002)

³ For Gensollen, prescribers do not truly exist but constitute the ultimate form of intermediation: the delivery of information from uniform groups of consumers to producers so that new products and services can be tailored to the tastes that these consumers have come to share over time.

The forms of prescription provide a key to understand the economic structuring of the Internet. There, prescription assumes a wider range of forms (in terms of how users select content and in the nature of the relationship with consumers and sellers) insofar as the Internet is more complex: it offers a wider range of information products and greater variety with regard to value chains, economic players and business models.

2. The economic foundations of the prescription

In order to delineate the phenomenon at stake and to establish the economic foundations of prescription, we shall firstly describe more precisely what can be considered as prescription. Discussing various examples will help us to discard the one-dimensional view of the market in which supply matches appropriately to demand, possibly via an intermediary or market platform⁴. Each component of prescription function (collection of information, selection of goods and services, support to the decision-making process of the consumer, assistance in the transactional process) influence the market configuration, the control of customer relation and emerging business models. It encourages us to replace it with a three-pronged model involving the supplier, the consumer and the prescriber. Using this model will help us to make out the various revenue sources for prescribers and the strategic levers at their disposal for gaining competitive advantage.

2.1. A widespread situation

The phenomenon of prescription is very diffused and can be found in several industries and professions, from doctors (who prescribe medications) to educators (who prescribe specific classroom textbooks), architects, contractors, financial advisers and asset managers. In each of these situations, responsibility for the purchasing decision is transferred; moreover, there is no longer a link between the market that brings the product or service provider and the prescriber together and the market that brings the prescriber and the consumer together – these two markets each generate their own transactions and dynamics. For example, educators are in a position to recommend the textbooks that will be used in their courses: their role is not simply to inform or to influence but to actually issue an injunction. The same is true of physicians and the medications they prescribe to their patients. All these cases are putting on view different markets structure where intermediaries are no more a mere chain link in the supply chain but contribute to more complex economic configurations..

Hatchuel (1995) has demonstrated how consumers disqualify themselves as decision-makers by relying on an outside prescriber, who defines how buyers perceive the goods to be searched, establishes the value assigned to these goods and points buyers toward one particular supplier over another. Hatchuel emphasizes how, in this case, knowledge is transferred to the end consumer, but he does not consider this a structural component of the market: when viewed as primarily a cognitive function, prescription is necessarily temporary in nature because consumers gradually acquire the knowledge that they previously lacked and, as a result, they have less and less need to rely on an expert. In this case, the relationship between seller and prescriber is limited to the domain of information and decision-making (i.e. the seller's attempt to influence the prescriber⁵) in a form of extra-market competition. In essence, this approach is very similar to the one advocated by authors who have studied electronic intermediation, which is characterized by the ability to take advantage of the correspondence between transactional

⁴ See, in particular, developments made on two-sided markets by Jean-Charles Rochet & Jean Tirole, 2003.

⁵ Extensive marketing research has been conducted on this topic.

flows and information resources. Our model aims precisely at modelling how such different flows and transactions articulate with one another.

2.2. A three-pronged model

We assume, in this paper, that in the economics of prescription, there is no longer one sole market, operating between producers and consumers. Our main argument is that three markets work together wherein decisions are transferred, the decision-making process is compounded, and the market is filtered by prescribers. These markets can be defined as follows, recapping the primary characteristics of our model:

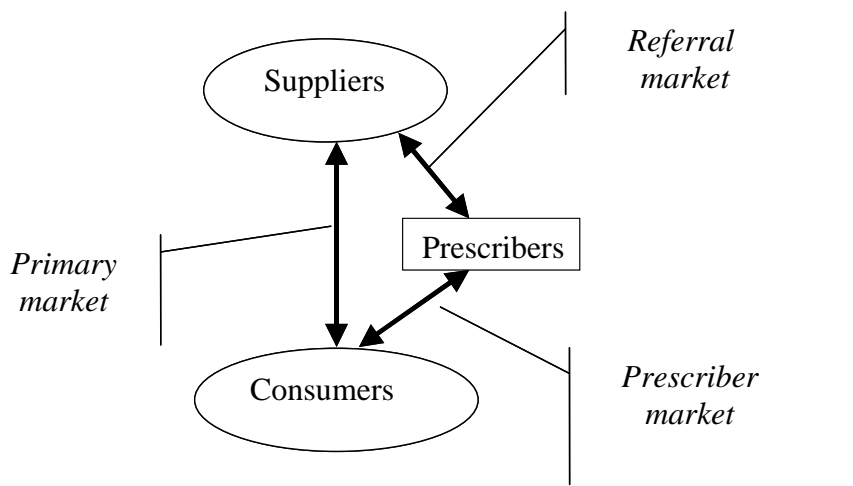
1. A web of transactions among three groups:

- Suppliers (S), providing goods and services.
- Consumers (D), representing end demand.
- Prescribers, who offer or recommend goods and services.

2. A network of exchanges occurring in three separate markets:

- The primary market of relevant goods and services, where consumers make a selection from a range of goods provided.
- The prescriber market, which governs relations between consumers and the various prescribers.
- The referral market, which regulates the acquisition of goods and the selection of information between prescribers and sellers.

Figure 1. The prescription markets: a three-pronged structure



The examples in Table 1 show how this three-pronged structure provides a simple means of grasping the various configurations found in prescription-based markets⁶.

Insert Table 1 : Some configuration of prescription markets

⁶ For purposes of clarity, we have initially restricted ourselves to examples taken from outside the Internet.

2.3. The variables of prescription

Our model helps out to establish prescribers as full-part economic actors in different markets. We propose, then, to identify the range of variables at their disposal to set their strategy and economic business models. They can be sorted in two main categories : first, the sources of revenues which support prescribers' activity, then, their competitive leverages.

2.3.1. Sources of revenue for prescribers

Differentiating transactions, we can better understand how companies get revenue on each market and the opposing strategies they use. If the participants conduct a simple purchase or sale, their remuneration comes primarily from the profit yielded by the transaction. By contrast, if they facilitate the exchange or provide advice, their remuneration may be based on the commission that the seller or buyer is willing to pay in return (Hackett, 1992). As shown in Figure 1, prescribers participate in two different markets: the referral market and the prescription market. They can create value on both markets, performing information processing and certification on the first one, whereas operating matching between consumer's request and product selection on the second one. The range of potential revenue sources and business models depends specifically on the prescriber's ability to become operative on these two markets.

In the prescription market, prescribers create value by explicitly selling the act of prescription to consumers

Consumers can gain access to prescription via payment for a service (in the case of occasional access) or through a subscription that provides comprehensive access to the prescriber's services. The latter case relates quite directly to the business models used by publishers and content programmers. Its effectiveness is determined by the prescriber's ability to offer a quality product or service that is reliable, identifiable and discriminating (providing access to a complete and exclusive supply or to a specific type of goods). In addition, prescribers can create value from their expertise in related markets: for example, their ability to attract a large number of consumers will give them access to the advertising market.

In the referral market, prescribers create value by ensuring that sellers provide payment for referrals

This form of marketing assumes that the prescriber is developing strategies for ensuring its selectivity rather than simply accumulating and enlarging the information base it provides. This is what major retail networks and shop bots have done on the Internet. Search engines are developing in the same way: after initially providing a basic service of locating and ordering existing pages on the Web, they are now becoming value-added directories that offer site selectivity, preferential listings and so on in return for payment from the sites that they list. This remuneration may be a one-time payment for a referral listing or it may be indexed to the number of contacts that the prescriber generated.

The effectiveness and justification for paying prescribers in return for selectivity will depend on the prescriber's ability to attract a large number of consumers or to reach a specific market segment or niche (through differentiation). To do this, prescribers must be able to guarantee consumers that their supply is of good quality and relatively complete or that it matches their specific interests (in the case of portals for virtual communities for instance).

Prescribers try to empower the primary market for goods whereas they are not initially directly involved

The transaction that takes place on the primary market between the seller and the consumer does not necessarily entail prescriber. For example, shop bots engines, classified advertising sites and auction sites bring together buyers and sellers who then negotiate directly. However, prescribers may receive compensations in the form of a commission on any transactions that take place, and get some profit on the referral market, in relation with primary market. Any form of prescription may involve such remuneration, but the Internet particularly encourages this economic model since it can be used to track a consumer’s browsing behaviour and to identify any transactions that were generated with the help of a given prescriber.

Summary

As summarized in Table 2, the prescriber’s competitive position and the range of eligible business models depend specifically on its ability to bring these various sources of revenue into play. Prescription can include other functions as well (distribution, technical intermediation etc.) to combine and enhance the various sources of revenue associated with these markets.

Table 2 : Sources of revenue for prescribers

Market	Revenue source
Referral market	Sale of referral listings
	Profit-sharing
	Marketing of customer data ⁷
	Sale of advertising space
Prescriber market	Sale of information and evaluations
	Distribution margin
Primary market	Commission on transactions

Example : Classified advertising sites

Classified ad sites are not part of the primary market per se (i.e. the market for goods); instead, they offer a selection of available goods, providing referral opportunities and in some cases certification (e-Bay, for example, provides information on the reliability of vendors and buyers), assessing their quality (as does Amazon.com, which collects critiques submitted by web users) and providing related services (as with used car sites, which offer a warranty, after-sales service, insurance and support).

Competition among these classified ad sites stems largely from their ability to define their service and position themselves differently in each of the three submarkets in our model.

- a. Some adhere to the principles that govern business models for classified advertising in newspapers. They ensure payment for the advertiser and offer a browser function for buyers free of charge. Under these circumstances, advertisers will give preference to the sites that attract the largest audience.
- b. Therefore, in order to establish an advertising base, competitors can choose to reverse the usual roles in the referral market and compensate advertisers, perhaps in return for an exclusivity agreement to ensure that the same ads will not also appear on competing sites⁸.

⁷ We are including these revenue sources in the listings market, but they belong more specifically to derivative markets.

c. Finally, some sites offer their prescription services at no charge and generate revenue solely by assessing a fee on the primary market (as with eBay and estate-agent sites) or on related markets. Yet, prescribers can create classified ad sites in order to capture consumers at a sufficiently early stage so as to offer them a wide selection of products, ranging from financial services (loans, insurance, warranties and after-sales services) to related products that might be of interest (e.g. consumables for customers purchasing capital goods, similar products for those who buy cultural items and so on).

2.3.2. Competitive leverage

When the forms of economic organization are based on three-pronged structures involving sellers, prescribers and potential buyers, the decision-making process for consumers becomes more complex than economic theory suggests. Demand is no longer based solely on individual preference and pulled by supply structuring (price and product information, competition etc.); it is also determined by prescription methods and strategies, the relationship with the prescribers and the price differentiation arising from the prescriber's cost structure. This complexity with regard to adjustment variables in supply and demand is reflected in both the decision-making process for consumers and the competitive mechanisms in the prescriber market.

The prescription supply is defined by a number of strategic variables that prescribers use to position themselves.:

- The *range of services* that prescriber develops and provides.
- The *cost of subscription services*, access to the service supply, consulting services etc.
- The *production function* of prescription (the cost of acquiring informations and producing the services provided to customers, the management costs of transactions and access, overhead costs and so on).

At the same time, consumer demand for prescription can be defined on the basis of:

- The quality, quantity and variety of the prescriber's supply.
- The cost of acquiring information on the products or services.
- The costs supported by the consumer (subscription, entrance fees etc.).

To sum up, competition among prescribers is driven by two primary set of factors and exists over two time dimensions. Prescribers compete on price (rates, payment terms) and on supply (the size and scope of the service line, quality, customization level and exclusivity). Moreover, prescribers compete over time : to increase the instantaneous audience at each moment, to capture consumers through long terme subscriptions.

In some other cases, the prescriber is also a distributor and prescription takes place through the selection of products provided to consumers. As a consequence, competition may concern products offered on the primary market as well as the informations provided about the products offered on the primary market. With banking and financial sites, for example, prescription involve selling selected financial products on one hand and providing financial information or consulting services on the other.

⁸ When the US real estate market emerged on the internet, RealSelect joined forces with one of the largest franchise networks in order to gain a solid point of access to the market. The site offered to provide equity capital for the network and to publish its advertising at no charge in exchange for access to information databases. Microsoft HomeAdvisor, meanwhile, entered the market by initially paying its advertisers one dollar.

Price competition

Whether they are just providing informations or distributing selecting goods, the same various strategies are available to prescribers for differentiating their price structure and positioning below their competitors' prices :

- *Reduce the cost and quality of their supply* : while acting as intermediaries, it is less expensive for prescribers to acquire the products and services to be provided if they can limit the number offered (to reduce transaction costs) or develop an alternative supply of lower quality. This strategy is the only option available when overhead costs for customer management and acquisition and production costs are the same for all prescribers.
- *Establish an internal cost structure that is more favourable than that of competitors*: in order to improve productivity, prescribers will seek to implement economies of scale in distribution (promotional activities designed to increase the number of customers and reduce the administrative cost per customer, bundling and grouped sales, etc.) or create ancillary or by-product markets where they can apportion overhead costs and generate new resources on the referral market (providing services or customer data) or the prescriber market (through the sale of such by-products.).
- *Offset costs between markets setting the direction of the referral market*: as described earlier, remuneration can be paid 1) by the supplier of goods to the prescriber (when sellers pay for preferential treatment for their products or, in the case of selective distribution, to ensure exclusivity) or 2) by the prescriber to the supplier (when prescribers are paying for exclusive information or access to the sellers' goods for the purpose of exclusive distribution). Prescribers that bring the direction of the market into play can offer a more attractive price structure by basing their economic model and remuneration on the referral market rather than on the prescriber market. In this way, they can wholly reverse and change the nature of their relationship with both customers and competitors.

Last outcome is one of the essential contributions of our three-pronged model; it does not merely reflect the existence of two different markets but demonstrates that the direction of the relationship between sellers and prescribers is a true strategic variable.

Competition over supply of the services and products provided

Prescription can be the exclusive presentation of information aggregates, or it may be the result of a more complex selection process and expertise (as with guides to fine dining or search-engine portals, for example). In each case, the care with which the supply is structured is a critical competitive factor. There are a number of ways in which prescribers can enhance the appeal of their supply over that of their competitors:

- *Provide exclusive services*: this strategy has a direct impact on relations with goods and services providers⁹ in terms of the acquisition of rights, exclusivity, and production cost. The wider adoption of exclusive distribution rights has a noteworthy effect : it substantially increases the purchase price, since rare or appealing goods are the subject of intense bidding¹⁰. At the same time, the potential increase in the number of customers as a result of exclusive distribution rights can also lead to increased administrative costs.
- *Develop a specialized supply based on expertise*: specializing expertise (either in terms of its quality or its area of content) helps to target specific customer segments identified on the basis of marketing data and then to aggregate these segments. This strategy requires a policy of encouraging trade and consumption within virtual communities¹¹ as well as such actions to

⁹ Producers of original audiovisual works or those that hold the rights to such works (including sports federations and film producers, in particular).

¹⁰ On the other hand, goods with smaller market potential can be acquired, in some cases, for less than their manufacturing cost.

¹¹ See the section by Gensollen in this work.

encourage customer loyalty as giveaways and discounts for major customers. However, it creates a significant risk that consumers may depart en masse for a more attractive prescriber.

- *Significantly expand the volume of the supply* : this strategy encourages customer loyalty, generates economies of scale and makes it difficult for new competitors to enter the market. It is attractive to buyers insofar as it reduces the price of comprehensive services and cuts transaction costs.

Competition based on acquiring customers

The third way that prescribers can improve their competitive position is by capturing consumers. This strategy makes use of the transfer of decision-making and the ability to make decisions at any time by prompting customers to make ex ante commitment to a prescriber before making a selection on the primary market.

In concrete terms, prescribers can increase their ability to capture consumers with the help of several economic and sales tools: by creating long-term subscriptions, providing a technological platform (terminals, software)¹², preventing defections (through its rules and regulations or as a result of the learning curve that consumers must master) and establishing repeat-transaction incentives (such as customer loyalty and price discount programmes).

Consumers realize that this is in their best interests, since it leads to a reduction in both the fixed costs they must bear and the cost of acquiring information (as consumers master the learning curve and as prescribers increase their ability to customize supply), and provides rewards via direct incentives.

Television industry : a paradigm for the internet ?

The broadcast media industry offers a wealth of data for analysis of prescription. As a subset of a broader economic system that results from the convergence of telecommunications, information technology and audiovisual, it shares several characteristics with the Internet : the products exchanged via these media are information goods and incorporate significant value-added; the product supply is profuse, is conveyed to consumers via information and communications technology and can be consumed instantaneously online or at some future point by means of downloading. The importance of prescription through programming is central to the broadcast media industry and, thanks to wireless and high-speed Internet access, is becoming a more significant factor in the Internet-based economy and a focus of greater interest among access and service providers.

The dynamics of the television industry in the last decades can be read as an evolution of the role of the operators and the affirmation of the function of prescription¹³. In the earliest and most traditional television format – i.e. free television – prescription operates in the form of simple commercial intermediation, similar to what any distributor might provide. With the introduction of video-on-demand, consumers need no longer rely on the programming but can choose what they wish to see from a database of selected programmes. More complex scenarios emerged with the development of cable and satellite packages. Here, prescription is no longer just a matter of selecting and grouping the programmes : operators choose an appropriately diversified range of topical channels so as to create a complete, coherent programming line-up. As a result, more numerous distribution channels exist, greater competition takes place among operators, subscription options grow and network branding emerge. Networks are enlarging their role of

¹² For example, this is the strategy used by those mobile telephone operators and satellite television providers that offer a cell phone or satellite dish to customers who commit to a long-term subscription.

¹³ For a more detailed analysis, see Pierre-Jean Benghozi and Thomas Paris, 2003.

prescribers by assuming control over a portion of their programme offerings and by actively structuring both the market and consumption models : consumers are then less concerned with locating a given programme than with each channel's identity, which confers a guarantee of the quality, the range and the type of programming as well as it makes them gaining access to exclusive programming matching their interests.

Internet can be handled as carrying such situation to extremes while consumers cannot, spontaneously, grasp all information and programmes available. The most important argument is that consumers' choice cannot be described as preference optimization from among existing contents but as sorting out from a limited array of contents. In this process, consumers entrust prescribers with some of their decision-making, since they do not choose a content directly from among all those theoretically available: they choose a prescriber that itself selects the content.

3. Typical forms of prescription

In the first part of the paper, we defined a three-pronged market structure (primary-referral-prescription) between sellers, consumers and prescribers. The case of television industry suggests us that such a model could provide a conceptual framework to analyze the array of strategic responses. We shall now see how this wide range of possibilities can be boiled down to a smaller number of typical configurations - each one based on a specific business model - depending on how the nature of the prescription is tailored to market characteristics..

In order to make out such configurations, we shall firstly make out three different market structures, depending on which of the markets of our three-pronged model are effective. Secondly, we shall characterize different natures of prescription, according how the prescribers are restricting the supply and processing information on goods and services the consumers look at ; it will give us the means to identify specific limited types of prescribers. We shall thirdly use such a typology to precise the business models, strategies and dynamics associated to each form of prescription.

3.1. Market configurations

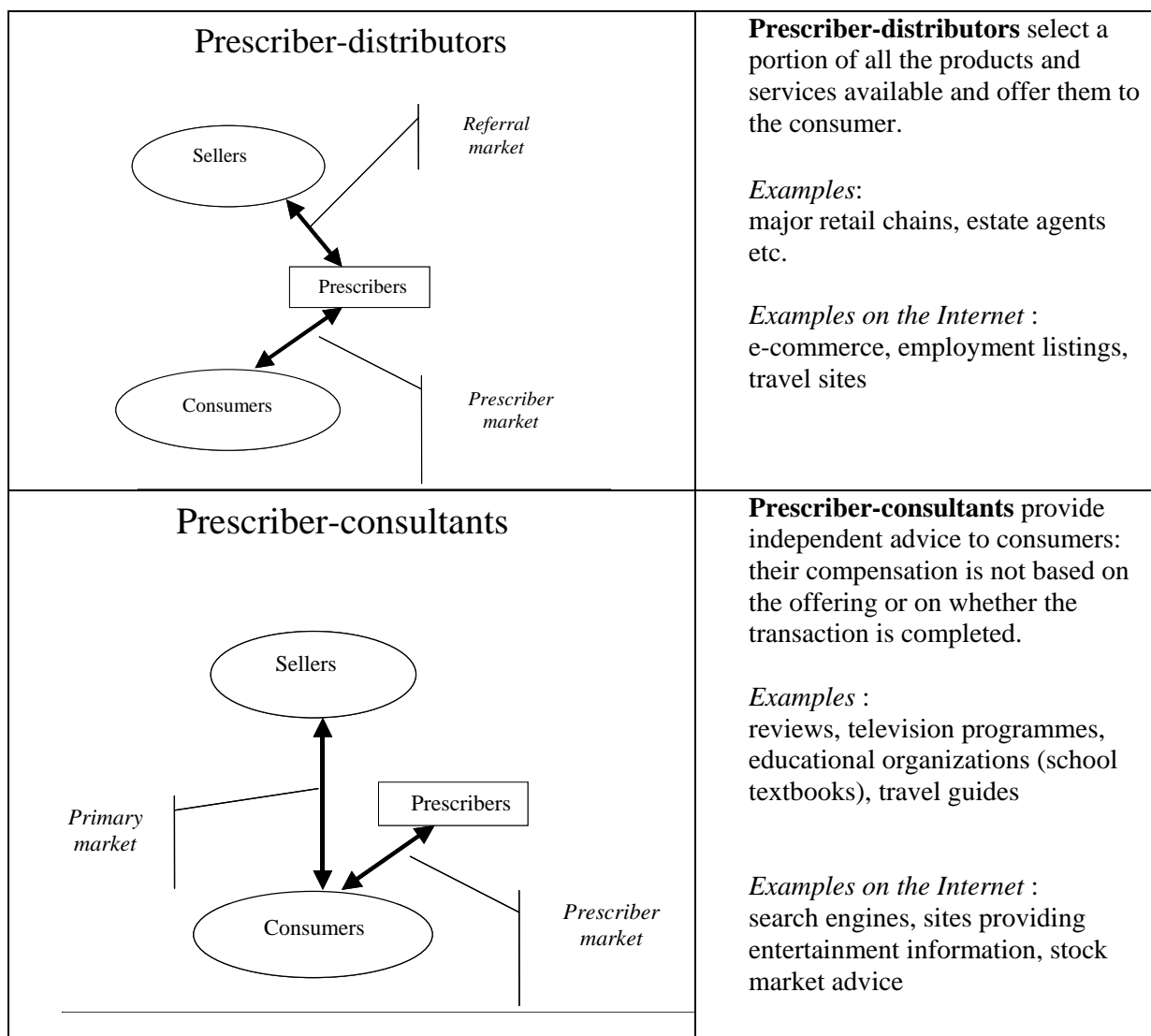
Each of the three markets we have identified may or may not be effective in our three-pronged model. The prescriber market is necessarily involved, but some configurations may not include one of the other two markets.

- There may or may not be a referral market between prescribers and sellers. Depending on the business sector, aggregator sites (e.g. search engines or sites that provide expert evaluations of other sites) may demand payment from companies that wish to be listed, while others may simply make their selections from existing information without the need for a transaction. A true referral market will emerge in the first case but not in the second.
- There may or may not be a primary market of goods and services. In some cases, the prescribers are also distributors, and the transaction will involve them alone. For example, some real estate is only accessible through an agency, whereas other estate can be bought and sold among individuals and the prescriber's only function is to bring the parties together. In the first case, the primary market does not exist, since the consumers are never in contact with the suppliers.

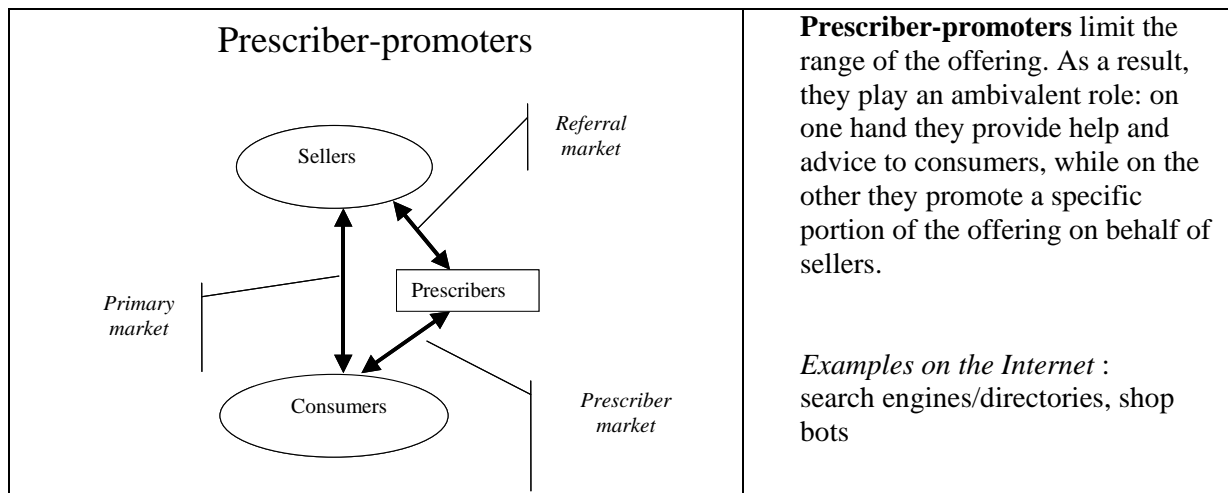
Considering these various situations, three forms of prescription¹⁴ can be identified. We can describe them using the terms distributor, promoter and consultant.

		Referral market	
		YES	NO
Primary market	YES	<i>Prescriber-promoter</i>	<i>Prescriber-consultant</i>
	NO	<i>Prescriber-distributor</i>	

Figure 3: The three standard forms of prescription



¹⁴ We have not considered the scenario in which there is no prescriber market, since by nature it lies outside the scope of our analysis. We have also excluded the commonplace scenario in which there is neither a listings market nor a primary market.



3.2. The nature of prescription

We have just defined three configurations ; each one determines how specific relationships among economic agents are structured. However, they do not define just how the prescriptive information is conveyed or the way in which it plays a role in the consumer's decision-making process by restricting the consumer's scope to a greater or lesser degree. In fact, our second prescription variable involves the nature of the prescriber's recommendation – whether it is an injunction, a selection or an evaluation.

- The prescription may be an *injunction*: the prescriber singles out a product that responds to the consumer's requirements, as with television, a medical prescription or school textbooks. In this case, *the decision is transferred in full* from the consumer to the prescriber. An extreme example is the "I'm Feeling Lucky" function that Google offers on the Internet.
- The prescription is offered as a *selection*: the prescriber identifies a list of approved products that meet the consumer's requirements or grants certification consistent with its own criteria and accordingly provides a referral for a given product or company. *The consumer still makes the final decision, but must choose from a product supply that has been winnowed down* as part of an initial selection process conducted by the prescriber. Wine retailers on the Internet are one example, offering a selected range of products.
- Finally, prescription may consist of an *evaluation* in the form of a ranking, a hierarchy or a list of proposed solutions accompanied by an assessment regarding essential and specific factors based on qualitative or quantitative criteria. In this case, consumers *make their decision by relying on the selection factors provided by the prescriber*. The Internet economy provides several examples: search engines that offer a list of items ranked on the basis of quality criteria (as specified in the query) and shop bots that rank available products according to price or other criteria.

Note that the form of the prescription is related to the nature of the intermediation and the organization of the market. In an injunction, therefore, the consumer is not aware of the product providing, whereas in the other two cases the supply remains partially visible.

3.3. Prescription business models

By combining the two variables we have just described (market configuration and nature of the prescription), we can identify various types of prescriber, each corresponding to a specific prescriptive method and revenue model. The following table, wherein we have provided a term for each type of prescriber along with an example, summarizes this typology.

Table 2: Types of prescriber

NATURE OF THE PRESCRIPTION CONFIGURATION	Injunction	Selection	Evaluation
Prescription-distribution	PROGRAMMER (Travel sites)	DISTRIBUTOR (Selective e-commerce) <i>Wineonline</i>	DISTRIBUTOR-CONSULTANT <i>Amazon.com</i>
Prescription-promotion	-	WEB REFERRAL PROVIDER <i>Yahoo</i>	SHOP BOT <i>Kelkoo</i>
Prescription-consulting	EXPERT	CERTIFICATION SERVICE <i>Google</i>	REVIEWER <i>Entertainment sites</i>

The preceding analysis has demonstrated that there is no single prescription model; instead, prescription is used in a variety of ways, which explains the wide array of examples that can be found on the Internet. When an economic actor positions itself in the prescription market, it defines the variables that will govern its activity and the way it operates. Some of these variables are mutually exclusive. For example, web referral providers cannot also serve as consultants or experts, since consumers will have no confidence in the independence of a third party that is compensated for promoting a product. In the following table, we show how several factors are related: 1) prescriber's positioning within its business sector, 2) competition structure and competitive leverage and 3) sources of revenue (distribution and profit-sharing margins, charging of prescription services and referrals, audience value through the sale of marketing space and the marketing of customer data).

We are now able to build on these different categories, developing their economic consequences and the strategic dynamics they encourage. Some of these categories sound different but will be presented altogether. This is the case for distributor and distributor-consultant, for referral and shop bots, for certification services and reviewer, as peculiarities concerning selection and evaluation activities have, at first sight, no noteworthy impact on their business model. Differences between these categories come into view when considering more precisely the production process and value added of prescribers¹⁵.

¹⁵ We shall not develop this point taking into view the limited space of our contribution.

Table 3: Prescription business models

Prescriber type	Forms of competitive leverage	Business models / Revenue source
PROGRAMMER	Supply structure	Distribution margins Sale of advertising space
DISTRIBUTOR	Price	Distribution margins Sale of referrals
DISTRIBUTOR-CONSULTANT	Supply structure Price	Distribution margins Sale of referrals (end-of-year refunds)
REFERRAL PROVIDER	Supply structure Capture of consumers	Sale of referrals Sale of advertising space
SHOP BOT	Supply structure	Sale of referrals Profit-sharing
EXPERT	Supply structure Capture of consumers	Sale of information and evaluations Sale of advertising space
CERTIFICATION SERVICE	Capture of consumers	Sale of information and evaluations Sale of advertising space
REVIEWER	Supply structure Capture of consumers	Sale of information and evaluations Sale of advertising space

3.3.1. Programmer

The programmer responds to consumer demand by providing a product. This is the type of prescription found in traditional broadcasting media. It can also be found in certain travel sites: consumers specify their travel requirements and the site then offers a proposed itinerary for purchase.

Programmers survive primarily on their profits from distribution and offer the prescription service free of charge. Their value-added lies in both the quantity of goods, informations and services they can provide (i.e. their ability to respond to every request) and the quality of the products they sell. In addition, their ability to generate a large audience may enable them to sell advertising space.

3.3.2. Distributors / distributor-consultants

Distributors and distributor-consultants select several products and provide them to consumers, who make their own selection. Distributors earn their revenue primarily from the profits they make; distributor-consultants may be able to charge for their prescription services if they can link them to the retail process. Insofar as they make a selection, distributors and distributor-consultants can charge for referrals.

3.3.3. Referral providers / shop bots

Referral providers and shop bots participate in a transaction purely at an informational level. They do not distribute products, but instead help consumers to evaluate them on the basis of either cardinal and quantitative assessment (web referral) or hierarchical structure (price comparison). Their value-added stems from the quality of their evaluations, which have the potential to build a significant audience that advertisers will find attractive; they also generate income by selling referral opportunities to sellers.

3.3.4. Experts

Experts have no economic ties to sellers. They are paid by consumers to make a selection on the consumer's behalf. Not-for-profit community-based websites are one of the few examples of this type of prescription on the Internet.

3.3.5. Certification services and reviewers

Certification services and reviewers have no financial relationship with sellers; they merely express an opinion. Their value-added is based on the quality and relevance of their views, their business model and their ability to generate and draw value from an audience.

3.3.6. Summary

Prescribers must address the strategic decision of where to position themselves among the options in Table 3 and what their source of revenue will be. Not every choice is open to them, however, since certain products or services may entail a specific positioning in the market. We showed, in Benghozi (2001), how information and communication technologies can shape internal organizations and industrial sectors creating new links between physical trades and information-based relations, and converting key-assets (location, information, technology) into business economic models on the internet.

Some market configurations lend themselves to an injunction, while others do not. For example, a third party may define a travel itinerary and select airplane company for a consumer in accordance with specific requirements (location, dates, price level)¹⁶. By contrast, consumers make the final decision when purchasing a novel: in such a case, the prescription cannot serve as an injunction. For some goods, such as real estate or travel services, prescription and distribution are necessarily linked because of the existing market, but this is not always the case. On the other hand, the ability to combine prescription with another service, such as distribution, is essential for service providers who wish to charge customers for the prescription they are offering; otherwise, consumers can use the prescription and proceed to make their purchase from a retailer that does not impose a surcharge for the prescription.

4. Conclusion

The expansion of the Internet-based economy has prompted a realignment of value chains by severing the link between information functions and logistical functions. In this study, we have shown how the growing influence of distribution and intermediation functions reflects, in broader terms, the emergence of new business models that can be said to have their origins in a specific prescription economy. We have defined these models by identifying the structure of the prescription markets, the nature of the prescriptions and the competitive strategies adopted by these prescribers.

In addition to this prescription typology, we should emphasize a number of significant results.

Despite available information on the internet, customers have imperfect information, may face risks and have to be advised and conformed. As information assumes a greater role in market organization, infomediaries are emerging and information markets are being created alongside existing markets for goods. More important, however, is the fact that the structure of

¹⁶ Low costs companies are a noteworthy exception : they by pass prescribers such as travel agencies, selling their seat directly on the internet and imposing their own company.

transactions is being profoundly altered, as reflected in the transfer to prescribers of both expertise and – to a partial extent – decision-making power. A worth mentioning consequence can be characterized as the “podium effect”: prescribers contribute to concentrate demand on an ever more limited range of informations, goods or services. Such effect is already well known in cultural industries, it takes place progressively more in the internet¹⁷.

The emergence of prescription services demonstrates how markets are becoming increasingly complex, coalescing around three-part structures that are opening up new strategic options. These structures are more than just intermediary market platforms.

An analysis of decision-making procedures and strategic challenges reveals that, in order to understand why prescription has emerged, we must consider the distinction that consumers draw between choosing a prescriber and choosing a product or service on the primary market. To do this, we must incorporate the timing of decision-making into our analysis. Time factor affects not only the individual decision-making process but also the nature of the competition that we find among prescribers¹⁸.

Prescription markets promote a form of competition that focuses simultaneously on information, price and consumer control. This explains why the Internet has in fact prompted an increase in the number of business models, operating side by side to sell the same goods and services, rather than leading to simpler competitive structures based on price.

5. References

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¹⁷ As an example, in 2002, 54,1% of search engine users stopped up their research on the first page of the results they get, while they were 28,6% in 1997 (4th International Conference on Internet Computing)

¹⁸ This phenomenon is generally overlooked in economics and business administration literature, except with regard to game theory.

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Table 1: Some configuration of prescription markets

Key: Direction of cash flow Purchaser $\xrightarrow{\quad}$ Seller
 Direction of a information flow $\xrightarrow{\quad}$

