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## Positioning of Firms on an E-Business Value Chain: the Case of Video on Demand

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### ABSTRACT

The provision of e-business services is supported by the implementation of value chains based on co-operation between firms combining different resources and capabilities in order to design, produce and market new products and services. The emergence of such value chains is characterised by the positioning of various players according to their specific resources and capabilities, whether they be existing or new firms. Our interest, by combining insights from the Resource-Based View and other perspectives, is to analyse according to what resources are necessary for actors to be able to successfully position themselves on a value chain, with a particular focus on relational assets, in the specific Video On Demand sector (VOD). This case is particularly relevant to show the structuring of a new value chain around new and "traditional" stakeholders. We shall first define the specific features of the movie industry. Secondly, we shall then present on the VOD value chain. Then we analyse how a company (called Moviesystem) has positioned itself on VOD value chain thanks to its specific resources and capabilities. We shall conclude by drawing general lessons from this case.

**Keywords:** e-business, Video on Demand, value chain, strategy, resources, relational assets

### 1. INTRODUCTION

The emergence of the so-called multimedia industry, based on the expected merging of three vertical industries (telecommunications, computing and the media) into a new horizontally layered one, raised tremendous interest at the end of the 1990s. There was a great deal of conjecture about how this new industry would be structured, and what types of player would be successful in positioning themselves in this emerging value chain ([6], [15]). A decade later, it seems interesting to analyse how value chains are finally structured and how and why some players have been able to position themselves successfully. Such a long delay is justified for two main reasons. First, the capabilities of the technical objects and systems at the time were clearly over-estimated, as was their speed of diffusion. In fact, it is only recently that adequate techniques and resources have become available to users. Second, different organisational arrangements and business models have been tested by various types of players, and time is therefore necessary in order to be able to draw lessons from these experiences.

This is particularly the case Video on Demand (VOD). On-line movies were probably the best-publicised example of multimedia service, and high business expectations gave rise to significant strategic moves from players of the three converging industries. VOD may be defined as content offered when demanded by consumers. Any video may be downloaded on a Personal Computer via the Internet. This service can be described very simply by the following value chain: it is developed by movie studios, bought by companies which package them and transform them into IP content, which are then sold to consumers either directly over a web site or

indirectly, through ISPs acting as distributors ([5], [10]).

Paradoxically, this business still remains largely under-developed among other on-line services. According to Jupiter Research, the world market for Video on Demand (VOD) amounted to only \$ 349 million in 2003, mostly in the United States. However, this market now appears promising. Until recently the bulk of the market was concentrated in the United States and was mainly served by cable operators. With the widespread uptake of ADSL connections, this market is expected to grow, and particularly outside the United States. The main ISPs are currently launching or preparing on line TV services that are or will soon be coupled with VOD services. According to Jupiter Research, The world market should reach a level of \$ 2 billion in 2006.

From our perspective, this case is especially relevant because it is a genuine case of convergence between three industries with different cultures, visions, business models and resources. Of particular interest is how a very specific industry has had to adapt to the constraints of electronic distribution. The provision of VOD services involve some significant adaptations of the movie value chain, such as content digitalisation and formatting, digital rights management (DRM), server platform management, movie catalogue management, relations with network operators or ISPs, or billing and customer management ([5], [10]).

We shall present how a VOD company, Moviesystem has positioned itself on the VOD value chain because of its specific resources and capabilities. These resources and capabilities allow Moviesystem to link the movie environment with the electronic distribution environment.

It is a good example of a company pioneering new forms of movie distribution by working with established film studios. Distributors are faced with strategic issues in terms of promotion and the associated time and geographic span of exhibition. Electronic distribution is a new step but it is also affected by the profit windows for film rights and by the distribution of the ownership of the film rights.

In this paper, we first of all present the specific features of the movies industry. Secondly, we will introduce the VOD market, the technological systems, the value chain and the challenges in providing VOD services. Then, we analyse how Moviesystem has positioned itself on the VOD value chain, in order to outline the critical resources that allowed Moviesystem to reach its current position. We conclude by drawing more general lessons from this case.

## 2. VIDEO ON DEMAND

### 2.1 The economical and technological context

VOD is a service providing video programs (typically movies, but other programs as well as requested by the customer in a catalogue and delivered at a time chosen by the customer. VOD is an expensive service, its cost depends on: the size of the program catalogue, the flexibility offered as to viewing and the quality of pictures sent. The VOD market must be put in perspective with the economics of the movie and media industry.

Movies are distributed through multiple channels in sequential release windows in a specific order. The majority of the revenues generated by a film are received within 18 months of a film's distribution cycle. After exhibition in its home country, the film passes over the following months into other channels: exhibition abroad, home video (cassette or DVD), Pay-Per-View, pay TV then free broadcast TV, leading to the profit release windows. This timeline must be respected by all stakeholders of the sector. This film cycle is based on its potential revenue along the different market segments, according to territoriality (by country and by linguistic zone) and time (duration and distribution rights) agreements [7].

VOD appears as a new release window in this film's distribution cycle. The question is to know when motion pictures will be available for VOD: should VOD share release dates with PAY-TV? Many VOD actors (in particular aggregators) insist on the necessity to link the VOD time window with the traditional and physical channel of delivering movies that are video rental/sell stores<sup>1</sup>. It should be a condition of VOD success [11].

<sup>1</sup> "Some 80% of a title's home-video rental and DVD purchase business is done within the first 30 days of its hitting the rental shelves. In other words, the newer a movie, the more valuable it is. The implication is that the closer the VOD release window gets to the video rental window, the more VOD operators can

As broadband offers new opportunities for the distribution of movies, the development of VOD interests several actors: telecommunications operators (opportunity for them to adopt a «triple play»<sup>2</sup> strategy), ISPs, ADSL providers, television channels, cable and satellite operators, film companies and production studios. Operators see VOD applications as a means to increase the return on their broadband investments. TV channels can take advantage of telecommunications deregulation in order to sign partnerships with alternative service providers. Movie studios and film companies consider VOD as the missing link for an accelerated and a more efficient marketing and distribution of the films. They try to attract service providers through their huge catalogue of movies and programming.

Today, end users have mainly three options for viewing VOD programming [4]:

- Pay-Per-View / Near Video On Demand on cable/satellite systems: Video technique used by broadcasters using broadband distribution mechanisms such as cable and satellite TV. This form of broadcasting uses large amounts of bandwidth and is only viable for operators with large amounts of spare capacity. Cable Multiple system operators (MSOs) are particularly interested in VOD looking for a return on their investments in upgrading their networks to support digital services. These services are well positioned in particular in the countries where cable is fully deployed (USA)
- Personal video recorder (PVR) on cable/satellite systems: in the USA, Tivo and Sony Digital recorder, and in France Pilotime/Canal Satellite. PVRs are the first step in introducing a home media server. These PVRs (with several functionalities such as stop, pause etc.) allow customers to download a movie during the day in order to watch it a few hours later (in the evening). This offer relies on a more limited range of movies.
- Peer-to-Peer systems characterised by low quality, very large catalogue and variable viewing flexibility.

### 2.2 The VOD value chain

The VOD value chain will depend on the nature of technical architecture used and on the complexity of the network [5]. While this framework can vary according to the nature of the technology used, the general structure is quite similar. In addition to content closely linked with Digital rights management (DRM) – that is a key issue for any kind of content distribution and especially for movies - the VOD system requires software, hardware and network assets and creates new middle layers in the value chain:

- head-end video servers and platforms (encoding content

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charge for their content and the greater the usage that can be expected. Currently, the premiere pay-per-view window is lagging behind the home rental window by an average of 50 days. The effect of that gap is to dampen demand for VOD and limit the price that can be charged for a VOD movie" [11].

<sup>2</sup> by bundling together telephone, Internet, and TV services

servers, middleware)

- system management functions (control access, DRM, billing functions can be also included)
- transport/access (transport across the network from the head-end to the DSLAM or cable hub near the consumer and connection over the “last mile” to the subscriber’s Set Top Box)
- end-user equipment (Set Top Boxes)

The table 1 below presents a framework showing how the VOD industry is organised. For the first steps, it relies on the cinema value chain presented above. Some stakeholders have several positions in the VOD value chain by aggregating, selling VOD services directly to consumers and operating their own network (Ebiscom/FastWeb in Italy)

Table 1: VOD value chain

Activity	Function	Stakeholders involved
Content provision	produce movies, manage rights, market programs	Content providers, movie studios, film companies
Services provision	Stock films on servers (based on technologies for encoding such as digitalisation and compression) and then distribute them either through downloads (temporary) or streaming, deliver VOD for the consumer over DSL, cable. Multiple functions: <ul style="list-style-type: none"> <li>- negotiate rights with content providers,</li> <li>- ensure the remuneration of the holders of the rights,</li> <li>- manage all the data associated with the program (language),</li> <li>- ensure the protection of these programs by appropriate encryption,</li> <li>- update the offer according to consumption parameters and contractual rights,</li> <li>- produce programs guides and graphic interfaces,</li> <li>- set up a commercial policy suited to the various types of products</li> <li>- manage invoicing and payment</li> <li>- ensure promotion of the service</li> <li>- negotiate agreements with physical distributors (network operators) for integration in the platform’s offer, either under the name of the end distributor, or under the service provider’s own, or using the “co-branding” system that enables each party to make the most of its contribution</li> </ul>	Specialised portals, content, aggregators video services providers
“Physical” transport and/or commercial distribution	<ul style="list-style-type: none"> <li>- construct a server-client architecture dedicated to VOD (including a billing system)</li> <li>- provide the infrastructure and access networks to carry VOD</li> </ul>	Access network providers, broadband network operators, ISPs
Consumption		End-users

Source: Adapted from activities described in [10]

### 2.3 Issues at stake and threats

We have provided a basic level for how the VOD is organised and we have to highlight some issues it faces:

- the increasing weight of Microsoft in the film industry process with the use of Windows Media player.
- even if bandwidth and services issues are resolved, VOD will face the same problems of piracy and content protection as the music industry through freely available movies through peer-to-peer distribution over the net.
- DVDs have provided huge revenues to distributors over the last five years. Video rentals and DVD purchases account for as much as 50% of a film’s revenues. A possible risk of a online distribution is to jeopardise the revenue stream from DVDs.

## 3. THE MOVIESYSTEM CASE

### 3.1 Case presentation

Created in March 2000, Moviesystem has become the leading European VOD operator. Starting from a traditional activity of purchasing of exclusive rights for

movies and wholesale distribution of VHS cassettes to professionals, Moviesystem entered the VOD market with the acquisition of a VOD service on the Internet, NetCiné.com. Moviesystem was initially supported by Pathé and Europa Films (Luc Besson’s company), which provided funds and the VOD rights for their catalogues. Consequently supported by innovation funds such as OTC Innovation 1 and A plus Finance, Moviesystem has signed numerous agreements with content providers and now has a catalogue of 1500 films from 70 production companies. In May 2004, Moviesystem was bought by Canal +, a leading French and European Pay-TV company. Moviesystem’s three main activities in VOD business are:

- the purchase and management of exclusive rights,
- the development and operation of a specialised middleware platform,
- the commercial operation of VOD services.

Moviesystem’s middleware platform is organised around Windows Media™ 9 technology. This platform allows the addition of meta-data to protect rights, the digital coding and the encryption of films and other programmes. It also provides a full range of features, such as management of content, conditional access and

Digital Rights Management, user interface customisation, reporting and edition of statistics, and bandwidth management.

The IP-based streaming platforms can be installed in the operators' network. In order to ensure quality and speed of streaming, as well as to deal with peaks of demand, it is better to have numerous servers located as near as possible to the end users.

Moviesystem addresses the VOD market through both direct and indirect distribution. As concerns direct distribution, Moviesystem operates its own service directed at Internet users, called NetCine. NetCine's web site offers films for streaming that are grouped in various categories (such as news, comedy, drama, children, adult, etc). The film catalogue is updated every week with titles recently released on the video rental market. In order to simplify and secure transactions, Moviesystem introduced an electronic purse system with tokens. Customers can buy 5, 25 and 60 tokens, for a respective price of EUR 5, 20 and 40. A recent film is offered 9 months after its first showing for 5 tokens, that is between EUR 3.30 and 5.00 (depending on the token package concerned), a price that is comparable to the rental of videos. Once a programme has been purchased, it can be accessed for 24 hours after which the subscription expires. NetCine claims a customer base of 30,000 individuals, and direct distribution is not envisioned as the most promising channel compared to indirect distribution via ISPs or other distributors. However, it has the advantage of serving as a showcase for prospective distributors and also as a test market. It also allows the distribution of adult content, which may not be in accordance with the policy of some distributors.

As concerns indirect distribution, Moviesystem has mainly developed partnerships with ISPs<sup>3</sup>. Under each ISP's brand name, NetCine's services are distributed by the main French ISPs, whether focused on ADSL, such as France Télécom's Wanadoo, Club Internet, 9 Télécom and AOL, or on cable TV (Noos). At the European level, Moviesystem is also present in the Netherlands with the operator KPN, and expects to extend its distribution in the short-term in Belgium and Italy. In France, the indirect distribution channel allows Moviesystem to address a potential market of 2 Million users out of a total of 3.3 Million broadband access subscribers. Moviesystem is also involved in new developments resulting from the adoption of "triple play" strategies by the main ISPs. It participates in the launch of an innovative VOD service with Monaco Telecom, where the film can be viewed directly on a TV screen, and also works with France Télécom, Free or 9 Télécom, on similar VOD services that complement their new on-line TV services.

Moviesystem is able to provide to its distributors with a complete and customised solution. Moviesystem is in charge of the updated provision of movies, the analysis of customers' habits, the customisation of the user interface, and the management of digital rights, whereas distributors are responsible for providing the suitable infrastructure, including servers located near end-users, and for billing users. The splitting of revenues is the following: rights owners get 50 % of the revenues, an average of 5 % is spent for the billing platform used, and the remaining 45 % is more or less equally shared between Moviesystem and the ISPs. Indirect distribution offers Moviesystem many advantages: a larger potential market, an extended server infrastructure, a billing system that users are already accustomed to, as well as benefiting from the attractiveness of bundled offers. However, as ISP are keen to protect their customer base and to keep control of their billing system, Moviesystem does not have full access to customer information and lacks pricing and billing flexibility.

### 3.2 Case Discussion

Moviesystem's success can be attributed to the nurturing and ownership of critical resources, as well as the value created by its particular business model.

First, Moviesystem has been able to use and/or develop relational assets with both upstream and downstream partners. It was able to mobilise the relationships with producers it had developed with its original business of off line film distribution, in order to get its initial funding and most of all the VOD rights for their catalogues, and also to nurture new relationships with the main ISPs that distribute its offer. Secondly, because of its intellectual assets and its technical resources, it was able to link two different industries with different cultures, experiences and resources, thus reducing uncertainty and risks for both upstream and downstream partners.

On the one hand, firms in the media industry traditionally distributed their films via movie theatres, TV channels or video rental outlets. They were therefore not familiar with dealing interactively with end customers, such as analysing their behaviour and preferences and managing direct or indirect transactions with them. They are also not accustomed to the technical and management aspects of computing and communications systems. A firm such as Moviesystem offers them a simple solution in order to avoid these uncertainties and the risks associated. They provide their catalogue and Moviesystem manages all the various activities related to VOD, such as managing technical platforms and data associated with the programmes, processing customer information, ensuring protection of digital rights, and managing transactions with end users and distributors.

ISPs and network operators, on the other hand, lack experience in managing a catalogue of films. It requires

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<sup>3</sup> A selection of the Moviesystem catalogue is also available on the web sites of FNAC, a French retailer of cultural and entertainment goods, and of Virgin.

artistic and marketing capabilities, such as the ability to assess the commercial value of films on this complementary market, to package them, and to put them together to provide an attractive offer. From this perspective, Moviesystem benefits from its experience in the videocassette market, of which the VOD market is expected to be a partial substitute. It also necessitates more technical capabilities such as conceiving programme guides and graphic interfaces or managing digital rights. Moviesystem provides its distributors with a full service, allowing them to focus on their core activities such as managing infrastructures, customer relationships and billing.

Drawing from different theoretical perspectives<sup>4</sup> [1] it is possible to assess the value creation potential of e-businesses on four interdependent dimensions, namely: efficiency, complementarities, lock-in, and novelty. We can use this framework to further evaluate the value created by Moviesystem.

Moviesystem clearly improves the efficiency of transactions. By being able to link two different industries, we have seen that it significantly reduces the uncertainty resulting from the strong information asymmetries between upstream and downstream partners, and therefore the search costs that they would have experienced without Moviesystem. It also contributes to reducing search costs for end consumers because of the provision of guides and interfaces. Furthermore, its technical platform allows opportunism to be reduced due to the efficient DRM and billing interconnection system implemented. Finally, by allowing a fully digital value chain, it simplifies transactions, increases their speed and contributes to reducing their monetary costs.

Concerning complementarities, Moviesystem does not really provide complementary outputs to customers by bundling separate products and services, as it is focused on a specific service, but a certain level of complementarity is nonetheless achieved with the creation of catalogues putting together an attractive set of various programs. By providing a digital service that fits with the services provided by ISPs, it also allows its downstream partners to benefit from complementarities.

In terms of "lock-in", referring to the level of dependence experienced by customers and partners that may prevent them from changing their supplier or partner, our opinion is more ambivalent. On the one hand, ISPs are dependent on Moviesystem because of its intellectual assets (ability to assess the value of a film, ability to bundle a catalogue of films and other items), as well as its relational assets (with the media industry). Content producers are also dependent on Moviesystem because of the trust resulting from its successful experience in

managing a DRM and billing interconnection system. However, the end consumers clearly belong to the ISPs, who manage customer relationships and billing. This will be certainly be accentuated by the bundling strategies of these ISPs, such as "triple play" strategies.

Allowing a new way of distributing movies by linking two industries and by providing an efficient support to new transactions, the business model of Moviesystem relies by definition on novelty. In fact, Moviesystem is applying to itself a process of Schumpeterian creative destruction, as its new VOD business may well destroy its traditional business of wholesale distribution of films on VHS cassettes. By being the first in France and one of the firsts in Europe, it may benefit from a competitive advantage over new players if strong learning effects, or time compression diseconomies [8], are present.

#### 4. CONCLUSION

The Moviesystem case suggests an interesting perspective on the topic of convergence: instead of one convergent industry, the persistence of two specific industries with specific resources (Media, and Information and Communications Technology industries) that are bridged by Moviesystem. It also outlines the importance of market-based assets, as advocated in [14], composed of relational and intellectual assets. In this case, the critical intellectual assets are the understanding of both environments, including their cultures, markets, products, processes and business models. The critical relational assets are the relationships developed with upstream and downstream partners, and the resulting trust and reputation. Moreover, Moviesystem was able to leverage these assets by managing efficiently processes such as product innovation, Digital rights Management, Customer Relationship Management or billing processes.

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