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Management summary

Digital sport content distributed through a digital network is presumed to have advantages due to the nature of digital content. Diminishing or even no marginal costs should allow for exploitation of current economically non-viable (niche) markets. There is an interest within NOS*NSF to examine the viability of digital sport content exploitation for different types of sport unions. As potential profitability (of the Internet) can be understood only by looking at individual industries and individual companies, this master thesis examines the industry around sport content by economically validating revenue models for four types of sport unions. The question answered in this theses is which (combination of) revenue model(s) captures the most economic value for a sport union exploiting digital video content through a website.

A global actor view provided an overview of all relevant actors and their interactions with the digital service provider. A process model showed when an actor is involved and which decisions regarding a revenue model have to be made. The result of these overviews is that a distinction has to be made between revenue model dependent and independent actors. These revenue model actors and their relations with the digital service provider provides the 'playing-field' in which decisions about the revenue model have to be made. The overall playing-field determines the economic viability of a revenue model.

A meaningful categorization of revenue models is a categorization that shows the decisions made in the revenue process. Therefore a distinction can be made between direct revenue models where there is a direct financial exchange between end consumer and content supplier and indirect revenue models where there is an indirect exchange. Within these two types, distinctions can be made between on how the processes are modeled. Five revenue models have been identified: subscription, pay per view, self determined pricing, advertising and sponsoring.

The comparison between the revenue models takes place based on the number of interested persons needed to break-even. The earnings per interested person determine when a revenue model reaches the break-even point. Solving the break-even equations for the revenue models indicates when a revenue model becomes economic viable.

The economic viability is the difference between costs and revenues. The costs of a digital content provider are subdivided into three categories: infrastructure, production and payment costs. The production costs make up 85% of the fixed costs, thereby greatly influencing the viability of the business model of a digital content provider, as all revenue models have to overcome these fixed costs. These high production costs are known as first-copy costs. The specific revenue variables determining the economic viability are: interest in content, price and usage.

Our research indicates that the size of a sport union has consequences for the revenue model selection. The break-even validation shows that for sports with little interest sponsoring is the only solution to exploit content in a viable way.
The subscription revenue model is currently the best revenue model for large sport unions to capture economic value. Within our current estimates, a subscription model starts making profit with approximately 74,500 interested sportspersons. A combination of this direct revenue model with an indirect revenue model might lower the number of interested persons needed.

Concluding, a combination of the direct subscription model with an indirect revenue model captures the most economic value for a sport union exploiting digital video content through a website.

Preface

With the completion of this master thesis ends a period of personal and academic growth at the University of Twente. This thesis is my 'Magnum Opus' of the master Business Administration, track Innovation and Entrepreneurship. Mobile marketing was the initial subject of interest at the thesis start in February. As the first internship company withdrew their support during the preparation phase, the subject changed to another hot new topic namely social media. Consultancy bureau Davinci in Amsterdam was interested in the implications of this topic for sport organizations. After some debate the topic changed to digital content exploitation.

Inspired by the ideas of Chris Anderson and his long tail theory, a final topic was chosen for this master thesis. The revenue models behind digital content exploitation have been investigated to obtain a better understanding about content exploitation in a digital era. It was fascinating to research the economics of this new playing field, which hold the promises of so many new opportunities to do business.

I experienced the research as challenging and inspiring at the same time. I learned more about my field of interest and obtained new skills to grasp large projects. It has been a perfect preparation for a new chapter in my life; a job as business analyst.

As mentioned, the master thesis has been conducted as a part of an internship at Davinci. From Davinci, I would like to thank Mark Geestman for opening doors which otherwise would have remained closed and Jerrick van Brussel for his personal support. I thank Guido Bouw and Roderick Weerman of Sport2Media for their thoughtful insights on the subject of sport content / video exploitation and their willingness to freely share information with me. I'm also grateful for the support I've received of (employees of) De Nationale Sportpas and NOC*NSF.

From the University of Twente, I would like to thank my fellow students for their personal and academic support. I'm also appreciative of the received assistance through my supervisors Michel Ehrenhard and Fons Wijnhoven regarding all aspects of the thesis.

A special thanks goes to my family, family-in-law, girlfriend and friends for their support during this fatiguing period called graduation. Their support pulled me through some rough moments and stimulated me to finish my master thesis. Their support made me come out stronger and still continues to feed my motivation to make the best of everything.

Rijssen, January 2009

Henk Jan Borghuis

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1 Introduction

Digitization is changing the world. New ways of communicating and doing business arise and become generally accepted. Many businesses and organizations respond to these changes by evaluating their activities and examining new opportunities. With an up-to-date digital infrastructure that is ready for the future, a highly connected population (OECD, 2007; Van der Veen et al., 2008). With the expectation that "audiovisual services delivery promises to be one of the key new growth areas" (OECD, 2006), Dutch sport unions feel that the right conditions are in place to start exploiting their content rights in new ways by using new media. This research evaluates which (combination of) revenue model(s) sport unions could use when exploiting their digital content through a website.

This chapter describes the background of content exploitation by sport unions in section 1.1, the goal of this master thesis in section 1.2, the research approach that indicates how the evaluation of revenue models will be conducted in section 1.3 and the structure of this master thesis in section 1.4.

1.1 Background

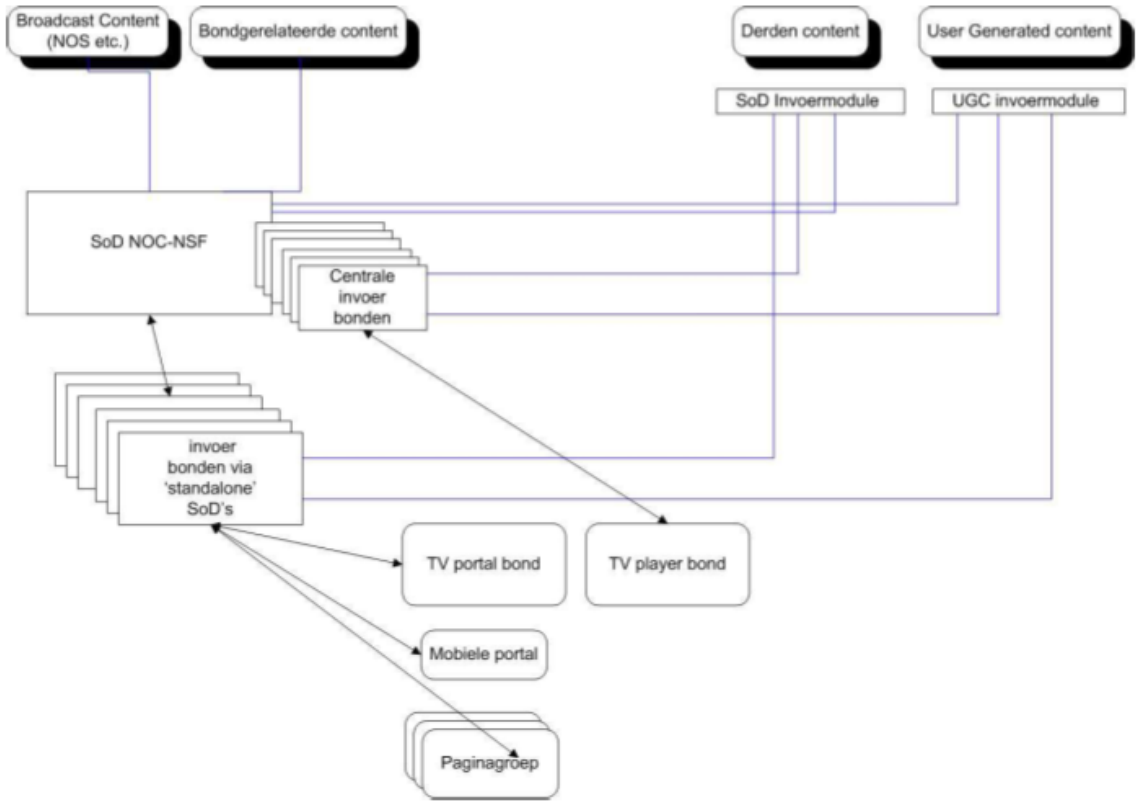


Figure 1.1: System overview of the digital platform used by the sport unions (Memo Davinci)

As times change, so do the challenges that sport unions have to face. The current strategy and programming of the Dutch Broadcast Association (Nederlandse Omroep Stichting / NOS) is focused on national and international top events, which lead to an exposure-decline for a variety of Dutch sports. This exposure decline puts strains on the sponsor relations of the sport unions, as exposure currently equals revenues (Memo Davinci).

The rise of the Internet gives organizations new opportunities to create economic value. The Internet is more than just a new distribution channel to reach more 'eyeballs'. The technology behind the Internet allows sport unions to change their place in the value network. They shift by vertical integration from a subcontractor of image rights to a (member of a) digital content service. The ability to exploit content independently from traditional broadcasters reduces their dependence.

In cooperation with the overarching sport organization NOC*NSF, a digital platform (figure 1.1) is erected to facilitate sport unions in making this transition in the value chain. Sport unions participate in this triple play platform where the fundamental idea is that unions remain in control of their own operations.

The integration of supplier into a digital content service holds that unions have to consider strategic and operational choices that where previously not their concern. To become a viable digital content service, sport unions must have a business model that specifies what stakeholders deliver in return for what, and this business model must enable the service to at least cover its costs (Wijnhoven and Kraaijenbrink, 2008). Porter (2001) states that: "The creation of true economic value once again becomes the final arbiter of business success. Economic value for a company is nothing more than the gap between price and cost, and it is reliably measured only by sustained profitability."

A holistic approach is needed to assess a business model (Porter, 2001). This section examines the influence of the value proposition and the value creation and delivery system on the choice for a revenue model.

A sport union has many reasons for existence. One of the relevant objectives of a sport union is "the promotion of the sport to the outside world". A derived goal from this objective is: "exploiting multimedia opportunities as a binding agent for sportsperson and as a platform for sponsoring" (KNWU, 2007).
These goals have strategic implications that have an influence on the strategy execution. Indicating that more efforts have to be aimed at sponsoring implies that sponsoring is the first option to pursue. However, another objective of a sport union is: "to bring the sport to a higher level". This objective also requires the need for financial resources. Choosing a revenue model also has an impact on this objective. Therefore an economic validation is needed besides a strategic validation.

By engaging into the digital platform, sport unions obtain a central role in the value network, as can be seen in figure 2.3. This central role in the value network provides more control over the resources. Instead of being solely providers of use values, sport unions now have the capabilities to create value and to capture this value. Being able to provide content to all common platforms creates a strategic advantage over possible competitors. The fact that sport unions are the owners of content rights is a source of sustainable competitive advantage.

1.2 Research goal

The commonly accepted hypothesis among experts in the field of sports marketing (Davinci, Sport2Media and NOC*NSF) is that direct revenue models, where customers have to pay for sports content, are not suited for content exploitation through a website. According to the experts, the only viable revenue model is the advertising model. This hypothesis is based on their experience with high-exposure sports like football and hockey, which have many free substitutes when it comes to sports content. This high-exposure sports hypothesis is also used for low-exposure sports, even though there is little or no experience with these sports.
The purpose of this master thesis is to qualitatively examine the experts' hypothesis. The research goal is:

To evaluate which (combination of) revenue model(s) captures the most economic value for a sport union that exploits digital video content through a website.

1.3 Research approach

Potential profitability (of the Internet) can be understood only by looking at individual industries and individual companies (Porter, 2001). In this master thesis, the industry around sport content will be investigated by economically validating direct and indirect revenue models for four types of sport unions. In order to acknowledge and to rule out the possibility of other factors that could override the relationship between the revenue model and the profitability, the ceteris paribus clause will be used. Therefore this research limits its focus on the revenue models that can be used by sport unions while exploiting video through a website.

The relation between variables that have an influence on selecting a revenue models is not clear and little investigation into this specific topic has been conducted. Our aim is to determine the relationship between the choice for a revenue model and the revenue generated. To quantitatively evaluate revenue models, necessary market data is gathered through a survey among members of sport unions. Therefore this thesis can be described as a descriptive quantitative research design (Grix, 2004). The quantitative outcomes of the research are therefore limited to this single case of sport content exploitation by sport unions. However, as case-specific variables can be replaced, the mechanism of revenue model quantification should provide other digital content industries an insight which variables influence the revenue model selection.

This thesis is divided into five sequential steps. The first step is to create an overview of the 'playing-field'. The value constellations of Normann and Ramirez (1993) describe that a firm does not add value only at one point in a predetermined sequence of activities and roles are interchangeable, as roles of actors can change (e.g. customers can become suppliers). Stabell and Fjeldstad (1998) elaborate on the value constellations as they describe that the value chain model (Porter, 2001) is more suitable for the analysis of production and manufacturing firms than for service firms. According to them, viewing the playing field as a value network is a better way to understand the essence of the value creation mechanisms of service firms.

Based on the observations of Amit and Zott (2001), who observed that value could be created by the ways in which transactions are enabled, the value network configuration is used in this thesis to understand how economic value is created. Using both a value model (Gordijn and Akkermans, 2001) and a process model (Eriksson and Penker, 2000), describes the impact of selecting a revenue model on an organization.

The second step is to elaborate on revenue models and their context. As there are so many different descriptions of revenue models in circulation in the theory and among practitioners (Hoffman and Novak, Enders et al., Gallaugher et al., Boyd and Bilegan), a categorization of revenue models is needed. This categorization is based on an examination of the transactions involved in a revenue model and should reduce the fuss about 'new' revenue models. After creating a taxonomy of revenue models, the determinants which influence the selection of a revenue model have to be discussed. These determinants form the components of a revenue model validation.

The third step is to acquire the empirical data needed to validate whether a revenue model is capable of creating an economic viable revenue stream. The validation is based on the revenue model determinants found in the first step. Document and market research should provide this quantitative data.
In the fourth step, a validation takes place. This validation combines the finding of the previous three steps into a validation model, which indicates the economic viability for a (category of) revenue model(s).
The fifth and final step is to interpret the findings of step four and come to a conclusion on which (combination of) revenue model(s) captures the most economic value for a sport union that exploits digital content through a website (figure 1.2).

1.4 Research questions

In summary, the main question this master thesis tries to answer is:

Which (combination of) revenue model(s) captures the most economic value for a sport union exploiting digital video content through a website?

The following research questions provide the needed input to answer the main question:

1. Which elements of and relations within the business model are relevant for a revenue model?
2. How can revenue models be categorized so that a comparison is possible?
3. What are the revenue model determinants?
4. Which variables determine the economic viability of a revenue model?
5. How can the different (categories of) revenue models be compared?
6. What are the implications of choosing for a category of revenue models?

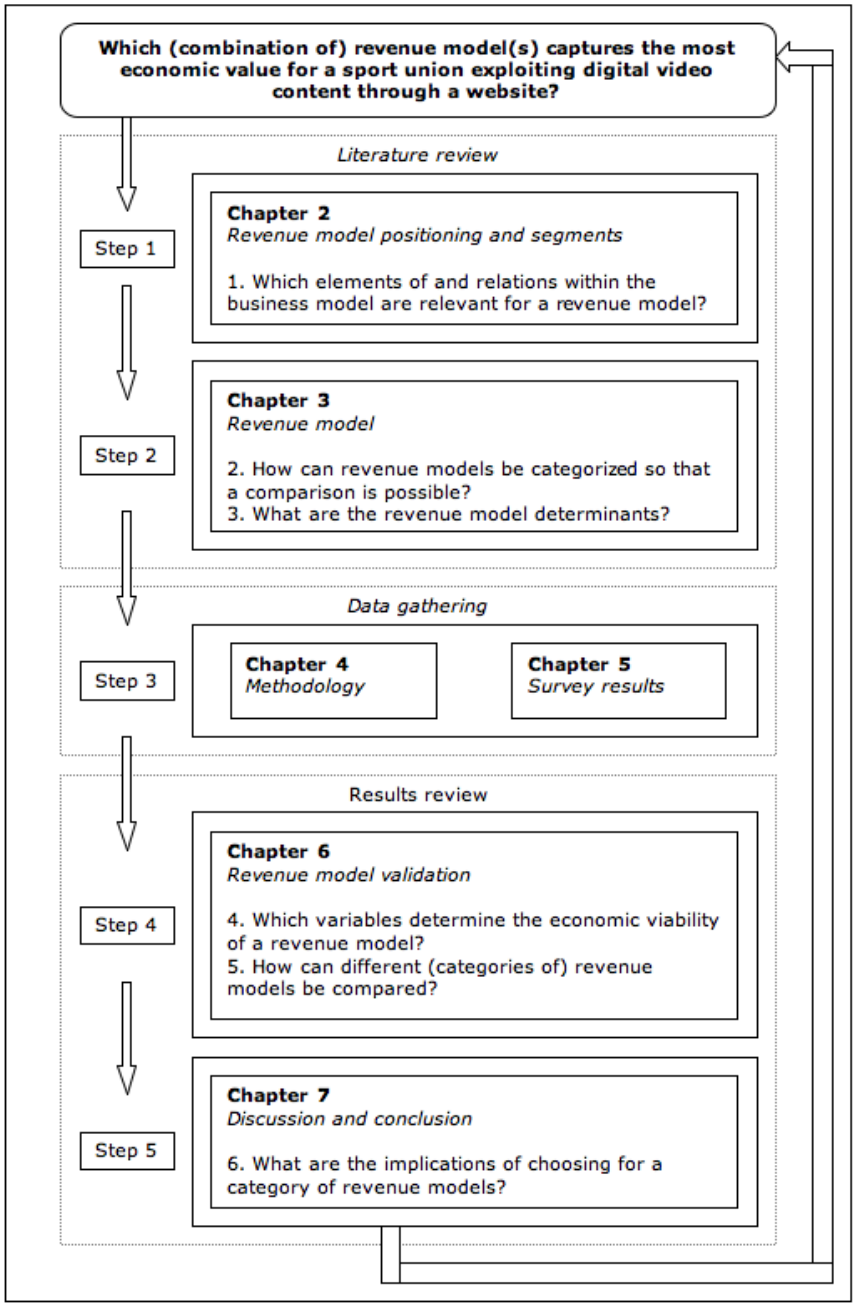


Figure 1.2: Structure of the thesis

2 Revenue context

The goal of this chapter is to understand which elements and relations are relevant in choosing a revenue model. By analyzing the relations and transaction using graphical representations (Wang and Chan, 2003), a comprehensive overview can be established. This overview describes the relevant 'playing-field' and will be used as a basis for revenue model validation. First, positioning of a revenue model within the business model theory will be discussed in section 2.1. Section 2.2 discuses the global actor view that provides an overview of the relevant actors involved and the exchange of value object between them. Section 2.3 shows the process model involved, which forms the basis for the revenue model comparison in chapter 3. The conclusions of the global actor view and the process models will be discussed in section 2.4, providing an answer to the first research question.

2.1 Business model

Authors like Amit and Zott, Porter, Gordijn, Osterwalder, Pigneur and many others use the term 'business model' to describe how companies create sustainable business. Despite several attempts (Malone et al., 2006), a commonly accepted definition of a business model has not emerged. Chesbrough (2006) states that "a business model performs two important functions: it creates value and it captures a portion of that value". From the definitions of different authors it becomes clear that most authors see the way that value is captured as an import part of the business model. To address this part of the business model, the term revenue model is used. Amit and Zott (2001) state that "a business model depicts the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities" and "a revenue model refers to the specific modes in which a business model enables revenue generation".

Although naming a business models is often a semantic matter, we believe that the business model in this thesis can be denominated as a Bit Vendor (Rappa, 2007). Table 2.1 shows three other descriptions of business models that also could fit our case. Using a graphical representation can eliminate the semantic discussion about how to define a certain business model. Using a standard modeling language like UML, BPMN or IDEF can further diminish confusion. However, most business model classifications are specific schemes and serve a limited purpose and no general classification scheme exists. As we're mostly interested in the actors involved and their relations, the e3-value ontology as described by Gordijn, Akkermans and Van Vliet (2000) can be used. "The e3-value ontology contains concepts, relations, and constraints to describe actors, alliances between them, the exchange pf objects of value, the value adding activities, and the value interfaces between them."

Business model	**Description**
Merchant Model [Bit Vendor] (Rappa, 2007)	A merchant that deals strictly in digital products and services and conducts both sales and distribution over the internet
Direct Exchange Model (Wang and Chan, 2003)	In the Direct Exchange Model, sellers exchange services, information, or products (SIP) for payment ($) or a SIP from the buyer.
Advertisement Model [Portal] (Rappa, 2007)	Usually a search engine that may include varied content or services. A personalized portal allows customization of the interface and content to the user. A niche portal cultivates a well-defined user demographic
Digital products and digital delivery model (Bamburry, 1998)	Digital products exist in the digital realm and may never need to be manifested as physical objects (although they can be). These products include images, movies, animation, audio, text, certificates and software. Digital delivery may take place when products are purchased or where information is bartered

Table 2.1: Different business model descriptions of the case business model

2.1.1 Value network

According to Pijpers and Gordijn (2008) business value models and process models describe the same subject from a different perspective. To understand the influence of the revenue model on the business model, it is import to have an oversight of which parties are involved in the business model and which objects of value are exchanged. The e3value model (Gordijn and Akkermans, 2001) with its global actor provides such an oversight.

The value network of an information service (Wijnhoven and Kraaijenbrink, 2008) can be used as an example of how a global actor view for an intermediary looks like. The value web of an information service describes the actors and the roles they take as suppliers and collectors of content, use features and revenues. Figure 2.1 shows the extensive value network, where all possible actors exchange content (C) and use features (U) in return for revenue (R). Tapscott, Lowi and Ticoll (2000) also use five types of value contributors to describe in the business webs, which parallels with the notion of a value network. "The difference between the two models are the customer of the value web and the service providers that support the value web", Voermans (2007) points out. Tapscott et al. describe customers and sponsors as one actor and divide the role of subcontractor into a commerce service provider and an infrastructure service provider. A combination of both views ensures that no important actors are forgotten. The role of revenue models can explain why there are different actors in what seems to be a single business model.

Different versions of this conceptualization can be used to describe the processes concerning a digital content service. This modification is based on the observed distinction between revenue model dependent and revenue model independent actors, as the choice for a (combination of) revenue model(s) has an impact on the value configuration.
To examine the different revenue models on a process level, a process perspective is stepwise derived from the global actor view.

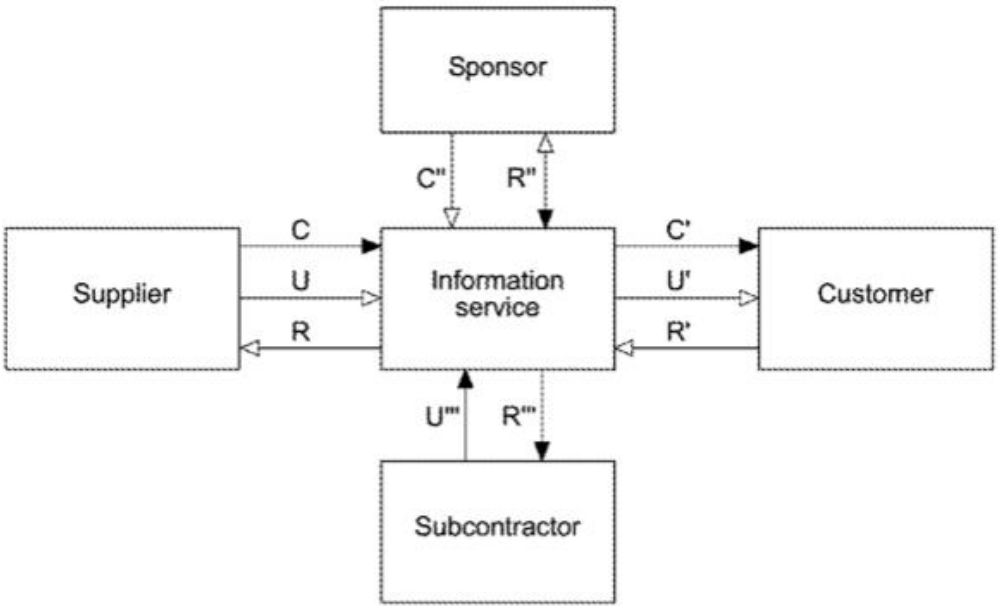


Figure 2.1: Value network (Reprinted from Wijnhoven and Kraaijenbrink, 2008)

2.2 Global actor view

The global actor view shows which actors are involved in a business model and which object of value they exchange. The definitions of the concepts 'actor' and 'value object' are described in table 2.2. The main purpose of the global actor view is to explain the overall business model to a wide range of stakeholders. (Gordijn et al., 2000) This view can be used to identify the actors involved and the exchange of value objects between them.

Concept	Definition
Actor	An actor is perceived by its environment as an independent economic entity.
Value object	A value object is a service or product which is of value for the actors

Table 2.2: Global actor view concepts (Gordijn et al., 2000)

2.2.1 Actors

The different actor segmentations in value networks show that it is not predetermined which actors are involved in the value network. It is our understanding that the revenue model determines which actors are taking part of a value network. Therefore, choosing a revenue model has strategic implications for a business. As we leave the strategic options open, we have to describe all possible actors within the value network.

The possible actors can be divided into two categories, namely revenue model independent and revenue model dependent actors. Revenue model independent actors are those actors whose presence is always necessary in a value network to create value. No matter which revenue model is used, these actors are involved in the process. On the other hand, there are also revenue model dependent actors. These actors only join the value network if a revenue model selection requires their presence. This distinction between the two categories of actors enables a swift comparison among varies revenue models. The exchange of value objects among revenue model independent actors has to be modeled only ones and can be taken for granted in the remaining sections of the validation process.

Revenue model independent actors
The digital content service, which consists of the digital platform, is the central actor in the value network. It intermediates between the actors. The content suppliers in this value network are producers and sport unions. Also users who create user-generated content (Howe, 2006) can be regarded as supplier. The digital platform as intermediary provides the content to consumers. Subcontractors are needed to facilitate the exchange between the two actors. Of the possible subcontractors, the infrastructure provider is also revenue model independent, as this service is always needed.

Revenue model dependent actors
The two remaining actors in the value network, sponsor and commerce service provider, are revenue model dependent. A payment service provider is only needed if a revenue model has been chosen where a monetary exchange takes place between the digital content service and the consumer. A sponsor is needed if a revenue model has been chosen if there is no direct relation between the content offered to the consumer and the revenue stream(s), which remunerate the digital content service for the delivered content.

Case relevant actors
Now that the actors of the value network for a digital content service have been discussed, the digital content actors in this case can be linked to their archetypes (table 2.3). These digital content actors form the building blocks for an economic validation of the revenue models. The value network is a model and therefore does not contain all actors involved in the offering, as this would overcomplicate the validation. The actors have been selected based on their known substantial impact on the overall value offering.

Value network actors	Digital content actors	Rev. model dependent	Rev. model independent
Digital content service	Digital platform		X
Supplier	Producer		X
	Users		X
	Sport union		X
Subcontractor			
Infrastructure provider	Hosting service		X
Commerce service provider	Payment service	X	
Customer			
Sponsor	Sponsor	X	
	Advertiser	X	
Customer	Customer		X

Table 2.3: Case relevant actors

2.2.2 Value objects

As depictured in figure 2.1, three types of value objects are exchanged between actors. These value objects are content, use features and revenue. In the offering an actor offers content with some use features and receives some revenue in return. This thesis assesses the different possibilities to capture revenues, while keeping the value objects use value and content the same. This ceteris paribus clause is needed in this thesis to isolate the effect of the independent variable revenue model on the dependent variable revenue.

Content
There are many types of content that can be exchanged through a digital content service. Images, articles and videos are among the common types of that are currently exchanged by content aggregators. The goal of content can be informing or entertaining. For validation reasons, this thesis limits digital content to one specific type of digital content, namely entertaining videos. The digital platform is created to facilitate the exchange of streaming video, the costs for producing and distributing this content are known and there is a demand for this content, which can be known via market research. These factors make a quantitative validation possible and allow a realistic validation. Section 3.4 elaborates on the specific details of the provided content.

Use features
Like content, there are also different types of use values that can be transferred between the actors in a value network. The content can be classified as a digital good, which has implications for the use values. Digital goods offer a high level of use value customization. The four main rights regarding use values on digital objects are usage, transfer, asset management and reuse rights. The basic principle in this value network is that the sport union is the supplier of the use values, as it is the legal entity that holds the owner rights. As they participate in the digital platform, they bring their rights to this digital platform. The relevant use values for this thesis are the use values exchanged between the digital platform and the consumers. The offering towards consumers is to view sport content, e.g. a summary of matches. To experience the content, the consumer needs at least usage rights. Transfer rights are not granted, as the digital platform doesn't want to grant users with the right to make money with the content. As the content is offered via streaming, asset management rights also remain at the digital platform. Granting reuse rights can undermine the commercial exploitation of content. There are however revenue model options like pre-roll advertisement that would allow a reuse right like embedding.

The use value in the offering that is validated in this thesis is to usage. This is the basic use value needed to allow consumers to enjoy content. The use features relevant for this thesis are the features needed to realize the use value of usage. This includes use features regulating the requirements and the constraints regarding the usage rights of digital content. Adding additional use values might increase the overall value of the offering, but these offerings are not validated in this thesis as this thesis focuses on the process of value capturing instead of value creation.
Revenue

The third value object exchanged between actors is revenue. It is the goal of this thesis to evaluate the different revenue models that can be used by the digital content service to acquire the revenue. To evaluate these different revenue models, it is necessary to determine which revenue models are possible and which elements influence the revenue generated by a revenue model.
An important factor in direct revenue models is the price. Price is the result of an exchange and from that trade we assign a numerical monetary value to a good, service or asset (http://en.wikipedia.org/wiki/Price). As digital content is a straightforward consumer good and therefore isn't perfectly elastic nor perfectly inelastic, it is likely that prices affect the demand. The difficulty is that that both prices and demand are not known. A questionnaire will be used to provide market data regarding prices and also regarding demand. Knowing prices and demand allows us to estimate the revenue a revenue model can generate.
Non-financial acknowledgement is also considered revenue for the receiver and is commonly used in Internet settings, especially in crowdsourcing. However, this thesis validates revenue models based on their economic viability and refers to revenue as the value received in a monetary unit. Revenue that cannot be directly converted into a monetary unit is left out of the equation.

Case relevant value objects
Now that the three types of value objects have been discussed, the case specific value objects exchanged between a digital content service and its actors can be linked to their archetypes (table 2.4).

Types of value objects	**Value object**
Content	Video Advertisement
Use features	Payment handling Content handling Copyright License
Revenue	Fee Donation Non-financial acknowledgement

Table 2.4: Summary of the value objects for the validation

2.2.3 e3-value Global Actor View

Sections 2.1 and 2.2 provide the input for a global actor view. Combining the relevant actors (table 2.2) with the value objects exchanged by these actors (table 2.4) provides all the elements needed to compose a global actor view. The same division of the actors in the value network has been used, so that the global actor view provides a clear overview of the actors and their roles while exchanging value objects.
The global actor view in figure 2.3 shows the relations of a digital content service without the choice for a revenue model. The solid lines between the actors show the revenue model independent relations, where the thinner dotted lines show the revenue dependent relations. This overview will be used in chapter 6 to model the revenue model validation when the monetary value of the value objects has been established.

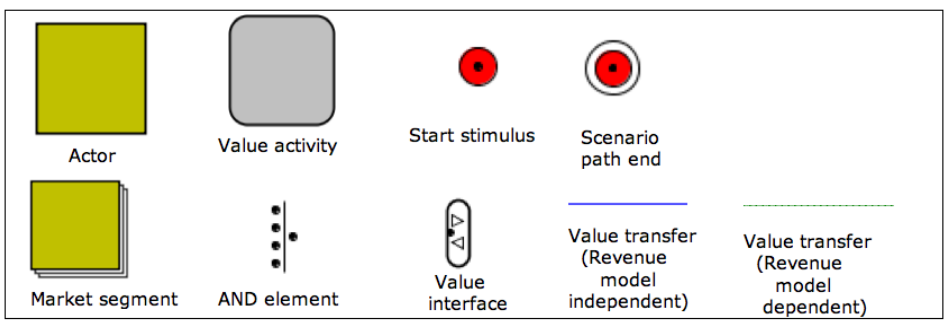


Figure 2.2: Legend e3-value Global actor view (figure 2.3)

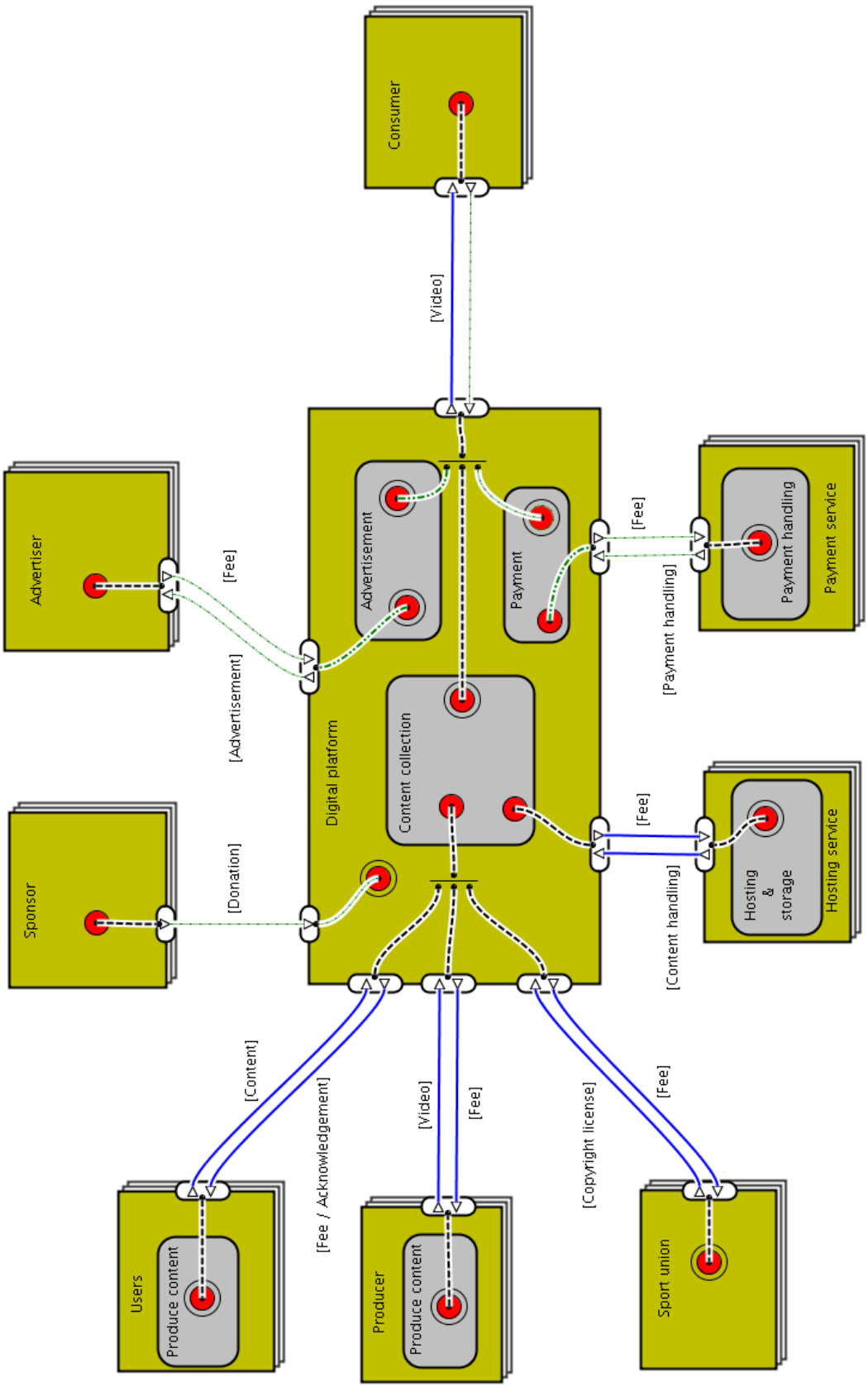


Figure 2.3: Global actor view of a digital content provider

2.3 Process model

A process model is used to describe the revenue model activities. The Eriksson-Penker Business Extensions to UML (Eriksson and Penker, 2000) allows modeling and capturing the essential choices within a revenue model. The validation of the revenue models is based on its goal. For the validation, a quantitative goal will be used to control, measure and decide the created value of the process. For now, it is sufficient to describe the goal with a textual value. The goal for the revenue process is to break-even.

As depicted in figure 2.2, the relations between the payment provider and the sponsor is dependent of the revenue process. UML can be used to determine when actors are involved in the process.

The revenue process is a part of the transaction process between the digital service provider and the consumer. It starts with the consumer requesting content from the digital platform. The digital service provider receives this inquiry and is willing to fulfill the inquiry of the process goal is met. Before delivering the requested content, the revenue process has to be finished satisfactory. In the revenue process, several process decision points can be determined. These process decision points indicate the separation between the different revenue models. By modeling the complete process, the elements and relations within the revenue process become visible.

2.3.1 Revenue process description

The revenue process is not the entrepreneurs greatest concern, as the research of Sanz-Velasco (2006) indicates. Therefore the choice for a revenue model is often made without considering the enabling processes, which will be identified in a later stadium. By assessing the choices to be made, which are visualized in an activity diagram, a more complete view can be constructed. This view serves as decision tree for our revenue model validation.

The revenue process starts with a request for a payment and ends with the receiving of the payment. There are two decision points in the process, which both have an influence on the process and will determine the revenue model in place:

Direct revenue model

1. If a direct payment from the consumer to the digital content provider has been chosen, a decision has to be made about the desired payment method. The commerce service provider facilitates the payment process and the digital service provider receives the payment.

Indirect revenue model

2. If the consumer doesn't want to perform a direct payment, the alternative is that a sponsor has to provide the payment to the digital content provider. The sponsor has two options:
    a. Provide a payment to the digital service provider without a compensation by the consumer, or
    b. Request a compensation for the payment from the consumer.

   Based on the value the sponsor wants to receive for the sponsoring, the payment for the digital content provider can be determined and paid to the digital content provider.

This revenue process is modeled in the activity diagram of figure 2.4. This process model identifies the choices to be made in the revenue process and the actors and interactions involved as a result from the choices made.

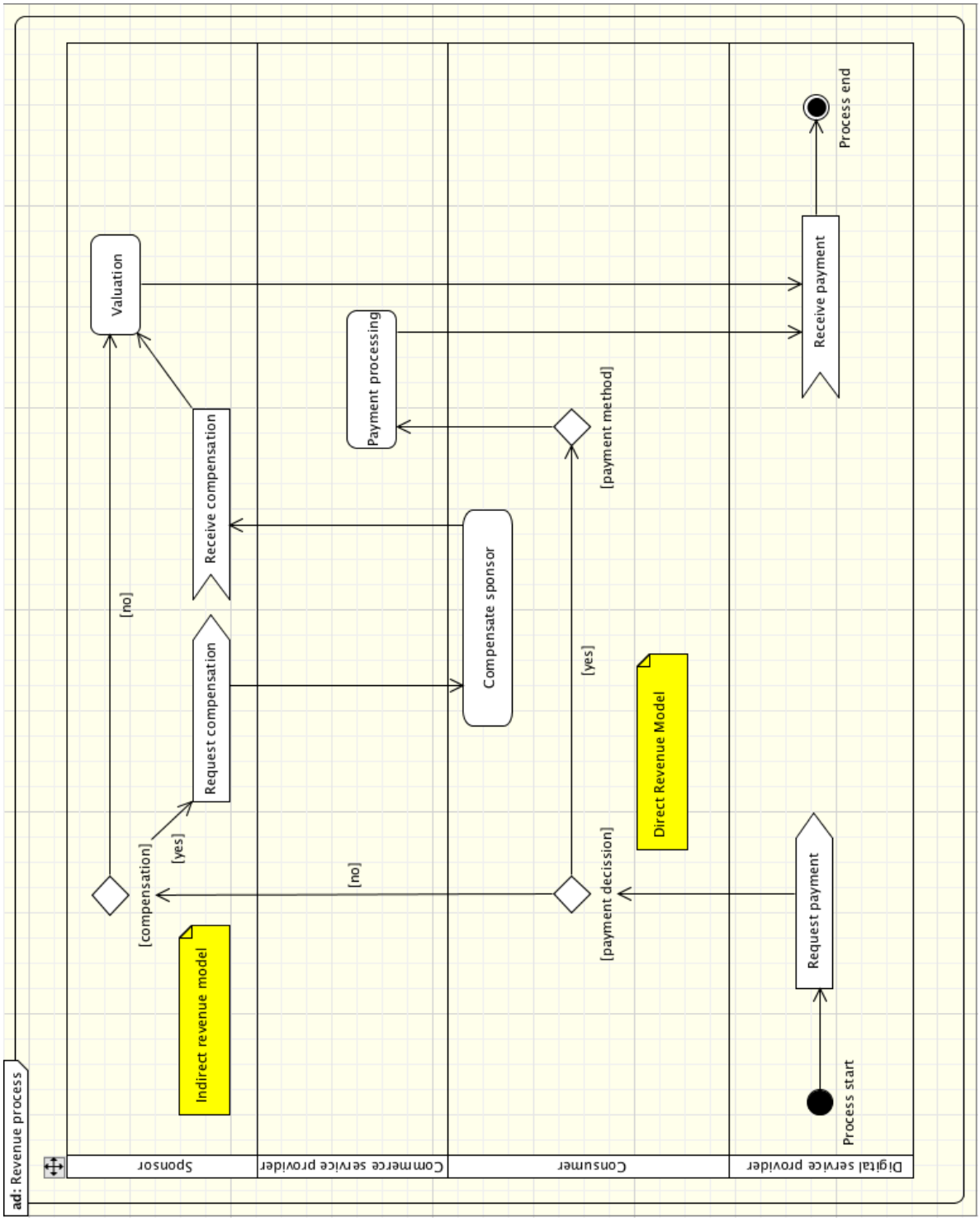


Figure 2.4: Revenue process modeled with the Eriksson-Penker Business Extensions to UML

2.4 Conclusion

The goal of this chapter was to understand which elements and relations are relevant in choosing a revenue model. This answers research question 1:

> *Which elements of and relations within the business model are relevant for a revenue model?*

In the global actor view (figure 2.3), an overview of all relevant actors and their interactions with the digital service provider was depicted. The process model (figure 2.4) showed when an actor is involved and which decisions regarding a revenue model have to be made. The result of these overviews is that a distinction has to be made between revenue model dependent and independent actors. These revenue model actors and their relations with the digital service provider provides the 'playing-field' in which decisions about the revenue model have to be made. The overall playing-field determines the economic viability of a revenue model. This validation will take place in chapter 5.

The elements of the business model, which are relevant for a revenue model, are the actors involved in the offering of content from the digital service provider to the customer. These actors are:

Revenue model independent actors	**Revenue model dependent actors**
- Digital content service	- Sponsor
- Supplier	- Commerce service provider
- Customer	
- Infrastructure provider	

The revenue model relevant relations that the actors have within the business are the exchanges of value objects between the actors. The value objects are content, use features and revenue. The exchanged value objects are :

Types of value objects	**Value objects**
- Content	- Video
	- Advertisement
- Use features	- Payment handling
	- Content handling / distribution
	- Copyright License
- Revenue	- Fee
	- Donation
	- Non-financial acknowledgement

The revenue model dependent actors and their relations determine which revenue model can be chosen. The process model shows that there are two basic possibilities.

1. The first possibility is that consumers pay directly for their content.
2. The second possibility is that a sponsor pays for the content.

Within these two possibilities, decisions have to be made about how the processes will be executed. In a direct revenue model, a decision has to be made about the payment method. The indirect revenue model is divided in a compensation possibility and a non-compensated possibility. Within the compensation route, decisions have to be made about the type of compensation and how the payment will be determined. Chapter 3 elaborates on these possibilities.

3 Revenue models

Goal of this chapter is to understand the concept of a revenue model, so that different revenue models can be compared among each other. Section 3.1 elaborates on the suggested revenue model categorization in chapter 2. Sections 3.2 and 3.3 describe our own view about the possible archetypes of revenue models, based on separation into the two categories of direct and indirect revenue models. Section 3.4 identifies the determinants of a revenue model, which serve as input for a revenue model validation. This chapter ends with a conclusion in section 3.5, in which research questions two and three will be answered.

3.1 Revenue model categorization

A revenue model is a simplified abstract view of the value objects actors receive in return for their offering. It describes the way revenue streams are constructed between the actors in a business model. Most revenue models focus on the value object exchange between (end) consumers and producers. Although the use of electronic media to engage in the purchase and sale of goods and services is far from new (Boyd and Bilegan, 2003), the Internet era offers several revenue management possibilities that seem innovative.

Hoffman and Novak (2003) define revenue models as following: 'Revenue models specify how a firm translates customer value into a revenue stream. In effect, they specify where the money comes from." Just like Porter (2001), Hoffman and Novak (2003) warn for sub optimization by stating that: "a revenue model and a customer segmentation model cannot operate in the absence of what benefits to offer that provide value." Also Osterwalder and Pigneur (2002 & 2005), who described a business model by nine building blocks, support the view that a holistic approach is needed. Considering the statements above, this master thesis regards the current business design as fixed (ceteris paribus) to achieve an understanding on how to assess which revenue model suits a certain business model best.
Hoffman and Novak (2003) mention 17 revenue models and point out that: "we can expect that further types of revenue models will be available in the future as innovation continues in this sector." In their study on the relationship between the pursuit of various revenue streams and the senior manager's evaluation of the performance of the firm's online efforts, Gallaugher et al. (2001) mention 7 different revenue streams, which they examine more closely. Other classifications of sector specific (Crook 2007) revenue models can be found among practitioners.

To escape the semantic differences, Wang and Chan (2003) suggest analyzing models using graphs. Using graphs should result in categories of revenue models, which can be compared with each other. To investigate which revenue models are relevant, it is import to know what exactly will be exchanged and to have a list of all the relevant actors involved in this exchange. Note that the categories of direct and indirect revenue models are different from the Direct Exchange Model and Indirect Model used by Wang en Chan (2003), as they discuss business models and not revenue models.

Based on the revenue process model, as described in section 2, there are effectively two main categories of revenue models: those with direct, monetary revenue (figure 3.1) and those with indirect, non-monetary revenues (figure 3.2).

To assess all possible revenue models for content exploitation, it is important to review all models separately. There are constructions where a combination of revenue models is used. Combined, these models are capable of capturing value. However, if separated, they capture no economic value. Therefore they are seen as non-revenue models or gift models.

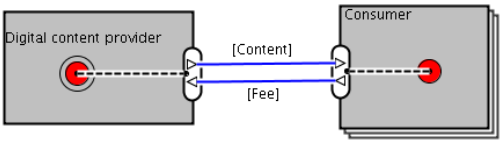


Figure 3.1: Direct revenue

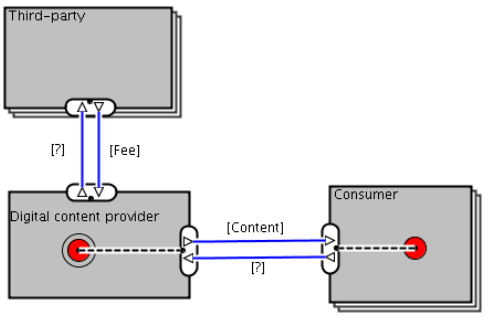


Figure 3.2: Indirect revenue

Comparison of possible revenue models as described by academic authors and practitioners resulted in the division of non-revenue models into two categories (table 3.1), namely teasers and cross-subsidy.

Model	Description	Thesis
Ransom Model (Hoffman and Novak 2003)	Provide some information free, and then charge for completion or further access to the information.	Teasers
Value-added services (Hoffman and Novak 2003)	Fees are collected on new services that are provided for "free" goods and services offered on the Internet.	Cross-subsidy
Sale of additional Merchandise (Gallaugher et all. 2001)	If consumers pursue digital content online, the provider of this content has in effect created a distribution channel that may be leveraged in many ways. One way is to expand into non-content e-commerce is assisted by the fact that visitors to content sites are often segmented by interest, and thus they may be easily targeted. Content providers with strong brands may also be able to leverage this asset to expand into new areas.	

Table 3.1: Non-revenue models

Teasers
Some online revenue models that seem to be free consist of a free and a paying part. Whether it is shareware, freemium, a ransom model, event or tournaments fees, trail play or virtual items sale; all these concepts aren't necessarily a part of the indirect revenue models. In contrary, most of these models are a part of a direct revenue model. Offering a basic computer game or the first five minutes of a soccer match for free isn't a revenue model. If an organization uses the revenue generated by selling a premium experience to offer a basic version for free, the revenue model remains a direct revenue model. This is an important observation that needs to be remembered when assessing revenue models. Giving something away on itself is never a revenue model for organizations. If an organization receives no value that it ultimately can convert into cash in an exchange, it means that value is lost. Losing economic value in the long run leads to bankruptcy.

Cross-subsidy
Free has a great appeal to people. Who doesn't want things for free? The 'free' known from the supermarket, from the upgrades on holidays or when buying a mobile telephone are what economists would call cross-subsidies. Consumers get an article for free if they pay for the other article. It looks free, but it isn't. The fact that one still has to pay to receive a product makes cross-subsidy a part of the direct revenue models. Within cross-subsidy customers will never receive a product or service without paying for it.

3.2 Direct revenue models

This section describes the different monetary revenue models. Basically, when visualizing these monetary revenue models on a business level (figure 2.2), it turns out that they all look the same. The only variable is how the transactions from the consumers to the portals are modeled, which becomes visible at a process level. Although there are many varieties in which content is exchanged for money, there are only two different types of propositions. In the first proposition, the supplying party determines the prices. In the second proposition, the demanding party determines the price.

Comparison of possible revenue models as described by academic authors and practitioners resulted in the division of possible direct revenue models into three categories (table 3.2), namely:

- Subscription
- Pay per view
- Self-determined pricing

Model	Description	Thesis
Subscription fees (Hoffman and Novak 2003)	Regular payments for access to information or services provided into the marketplace.	Subscription
Content services (Rappa, 2007)	Provide text, audio, or videos to users who subscribe for a fee to gain access to the service.	
Pay-per-view (Hoffman and Novak 2003)	Charge a fee for each access to information.	Pay per view
Micro payment (Hoffman and Novak 2003)	Collection of very small transactions fees, but in high volumes.	
Metered Usage (Rappa, 2007)	Measures and bills users based on actual usage of a service	
Donations (Crook 2007)	Monetary gift without return considerations	Self determined pricing

Table 3.2: Direct revenue models

3.2.1 Subscriptions

Subscriptions are a well-known and often used revenue stream for exploiting digital content. One of the most well known industries on the Internet using this revenue stream often is the porn industry. In the case of a portal site, visitors subscribe to the portal and therefore receive access to the content. The advantage of subscriptions is that it offers a rather constant revenue stream. Within the revenue model 'subscriptions', there are three categories, namely: a subscription for a fixed set of goods or service, a subscription for unlimited use of a service or collection of services, and a subscription for basic access or minimal service combined with an additional charge depending on usage.

3.2.2 Per-unit fee

The per-unit fee revenue model needs little introduction. In its basic form, it is the simplest revenue model. Consumers pay the price that suppliers ask. However, there are many variances on this basic form. Gallaugher et al. (2001) mention that the characteristics of digital content can be used to "exploit various strata of consumers that can be classified by intent-to-use and immediacy-of-need" and that "consumers with a need for a specific item that are willing to pay for immediate access to that item can be exploited via price discrimination." Therefore determining the optimum price is an important part of determining the revenues that can be generated when using the per-unit fee revenue model.

Besides options like price discrimination, there are also different ways of obtaining these revenues, for example, payment collection, credit card or iDeal. Each payment method may lead to a difference in surcharge from the payment service. A payment service like PayPal charges 1.9% up to 3.4% of the transferred amount plus an additional 0.35 Euro. This surcharge could make small payments unprofitable. "The potential usefulness of small-money transfers in generating a steady cash-flow, combined with the inability of traditional banks to eet his need, has created a vacuum (Whinston and Kalakota, 1996)." Besides the financial transaction costs, there are also the mental transaction costs. According to Szabo (1999): "… mental costs usually exceed, and often dwarf, the computational costs. These costs will increasingly dominate the technological costs of payment systems, setting a limit on the granularity of bundling and pricing." The used method of collecting therefore has an important consequence for the selection of a revenue model, as it might influence the viability of a model.

3.2.3 Self-determined pricing

Donations as a way of generating revenues are also an often-used revenue model. However, there is a very strong association with charity. A common known example of a donation model with digital content is that of the band Radiohead, which has brought this revenue model into practice. Unfortunately the band has never released the sales figures to the public. However, this was a one time only situation. It is important to make the distinction between self-determined pricing and free. In self-determined pricing, people choose to pay. The amount they pay is up to them. A successful example from the music industry is the Canadian artist Jane Siberry, who is using the self-determined pricing principle. The statistics on her website (http://www.sheeba.ca) show that 95% of the buyers pay a price at or above market price with an average of $ 1.25. This is without the people who choose to pay nothing and the free content.
A variance on the self-determined pricing is the well-known auction. However, this revenue model is not suited for digital content exploitation, as the basic idea behind an auction is the scarcity of a good, which is just the characteristic that digital content lacks.

3.3 Indirect revenue models

In contrast with the previous section, this section focuses on the revenue models where the content is offered free to consumers, as in no pecuniary transactions. These types of revenue model are already used for a long time, for example when broadcasting radio shows or in the publishing sector. A famous example of a non-monetary revenue model in the Netherlands is the emerge of free daily newspapers like Metro, Spits and Dag. With the rise of the Internet and digitalization, free becomes more and more the standard. The most successful technology company in the world, Google, offers everything they do for free to customers and still are able to produce black figures.
In a video related to his article, Chris Anderson states that "every industry that becomes digital eventually becomes free". He sees the creation of a Gift Economy that is not a fictional economy but reality. His argument is that there is no advertising, no cross-subsidies, no expectations of payment or monetary exchange in return for labor, etc involved in the creation and of user-generated content, open source, the blogosphere or Wikipedia. It remains to be seen whether this Gift Economy that Chris Anderson envisions will become reality. Wikipedia depends on gifts and donations, in an open source environment there is an exchange of knowledge and bloggers in the blogosphere receive a good feeling about what they do. With other words, there is always an exchange only it isn't necessary directly monetary. However, in our current economic system, there has to be a monetary exchange at the bottom-line as organizations / companies only accept money as valid medium of exchange.

Comparison of possible revenue models as described by academic authors and practitioners resulted in the division of possible indirect revenue models into two categories: Advertising and Sponsoring(table 3.3). We believe that there is an additional category, namely sponsoring. By examining the revenue process as depicted in chapter two, a sponsor can also choose to provide the digital content provider with a fee without asking for compensation. This fact leads to two possible indirect revenue models: Advertising and sponsoring.

Model	Description	Thesis
Referral Fees (Hoffman and Novak 2003)	The e-Business site provides customers with information regarding products and services on other sites. When the customer goes there and conducts business, the referred to business pays a fee to the referring business.	Advertising
Pay-per-performance (Hoffman and Novak 2003)	Fee is collected if the consumer completes a transaction	
Revenue Sharing (Kangas et all. 2007)	YouTube has signed an agreement with Warner Music that will hopefully be a model for other companies: Warnerís material is identified and advertising revenue is shared between YouTube and Warner59. YouTube is introducing technology that can identify the material of a certain copyright holder and therefore makes it possible to share advertising revenue from the use of such material.	
Affiliate Programs (Gallaugher et all. 2001)	These programs typically provide a partner site operator with a percentage of any sales generated by customers traveling through the partner to the online storefront. Partner firms provide a banner advertisement or some other link so that users can pass through to enter the sales-taking entity.	
Advertising (Hoffman and Novak 2003)	Allowing the firm's infrastructure to serve as an advertising platform for other companies.	
Sale of customer data (Hoffman and Novak 2003)	Collection of customer data, then selling it to others.	
Donations (Crook, 2007)	Monetary gift without return considerations	Sponsoring

Table 3.3: Indirect revenue models

3.3.1 Advertising

When it comes to indirect revenue models on the Internet, advertisement is the most known solution. Banners, AdWords, pop-ups, and video-ads are among the well-known appearances of advertisement. The characteristics of digital advertisement, like the ability for data-mining, lead to different ways of selling online advertisement. Besides the normal exposure model of cost-per-million, there are other ways to pay for advertisement like cost-per-click, cost-per-conversion or cost-per-action. Also combinations of these possibilities are used.
According to sector reports of ABN AMRO (2008), the media expenses will show an increasing shift towards online advertisement. In 2007 with 181 million euro, online advertisement was good for 4% of all media expenses. ABN AMRO expects that online advertisement in the U.K. will overcome the television expenses in 2009. In a report of the Interactive Advertising Bureau and PricewaterhouseCoopers (2008), Internet advertising revenues in the United States totaled 21.2 billion for the full year 2007, which is an increase of 26% percent over 2006.

As figure 3.3 shows, search advertisement generates the most ad revenues, followed by display ads. For a portal site, all advertising formats can be used. It also becomes clear that there is also a lot of variance among advertisement. The advertising formats, which are suited for use on a website, will be grouped by revenue model and discussed in more detail.

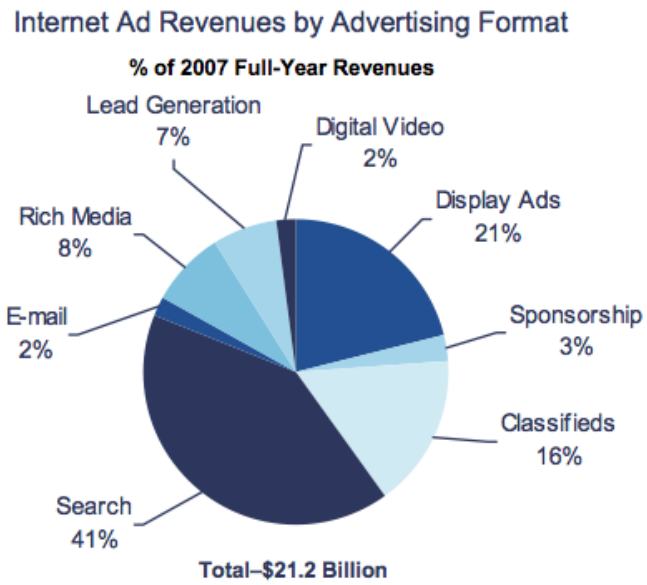


Figure 3.3: Internet Ad revenues (ABN AMRO, 2008)

Advertising possibilities
Advertising is a substantial part of the total site experience. The type of site also has an influence on the different advertising revenue models. A site that will be visited as a landing page for visitors of a search engine chooses a different advertisement model than a site that will be repeatedly visited by the same crowd. There is a difference between the possible formats for advertising and the different ways of obtaining revenues.
However, the most visible and known form of advertisement on the Internet is that of the display ads. Rich media and digital video have the same principles as display ads. In its most simplistic form pays the advertiser the portal site for space to display a desired expression on the portal site. These expressions can be a static or hyper-linked banner, a flash animation or an in-page video commercial. There are so many different possibilities when it comes to online advertising. There are different formats, different target groups, different revenue models and different clients. All these possibilities have an influence on the revenue model that has to be used. The type of advertisement on a website might have an even greater influence on the revenue model.

Type of advertisement
There are two types of advertisement, both with specific characteristics. These two types are branding and direct response marketing. Branding tries to enhance or create a certain favorable brand image, whereas direct response marketing aims to a concrete, direct action. The directness of direct response marketing leads to measurement options that aren't available for branding. The difference in goals they strive to achieve results also in different calculation of the revenue. The revenue model itself stays intact.

Format
The choice in advertising formats was until a decade ago rather limited. Banners and pop-ups were the most used formats on the Internet. The rise of rich media and the ubiquity of the Internet gave birth to many new formats, like video ads and dedicated podcasts. Appendix A gives an overview of possible formats. All these formats on itself have no direct influence on the revenue model.
Although lead generation is just one of the possibilities, it has some known issues regarding privacy that makes it worthy of some extra interest. Legislation on privacy sensitive information in Europe is tighter then in North America. The privacy debate is still going on. A site like Google has enormous amounts of information on single users, but it is still not clear how this information can or might be used. Marketing experts refer to the opt-in en opt-out possibilities and see therefore no limitations to exploit consumer data, also not in the Netherlands. However, caution should be retained when selling customer data, as misuse might have negative consequences that reflect on the portal image.

Advertising revenue possibilities
Almost all possibilities of obtaining the revenues are applicable to the different advertising formats. If the advertiser wants banner advertisement, it can be on a fee per million viewers basis or on a fee per click. The goal of the advertisement had a greater influence then the format. Because the effect of branding is the hardest to measure, it leads to the easiest revenue model. The most common and logical revenue method is to charge for the cost per impression. The advertiser pays the costs of showing and advertisement to one thousand viewers / listeners. The medium can be anything, from radio stations, billboards to a portal website. When it comes to the Internet, it is an easy to implement measurement. Websites keep track of the visitors, so these statistics can be used to calculate how many visitors have seen the advertisement.
These measurement options gave birth to many other ways of determining the price of an advertisement like cost per time or cost per click. These advertising revenue possibilities change the way the revenue is determined within the revenue model. As mentioned earlier, these new revenue possibilities are almost exclusively applicable to direct response marketing. The idea behind these new forms of payment is that advertisers only pay when their advertisement resulted into a desired action. This action can range from a certain action that visitors have to take (like watching an add) to a concrete sale. Although there are many variances in specific calculations, there are only three major types: Cost per click, cost per action and Revenue Share / Lifetime Value (table 3.4)

Type	**Description**
Cost per impression	A payment is due as soon as the ad is displayed. The most common form is CPM (cost per million), where a certain rate is charged for a million page views.
Cost per click	A payment is due as soon as a visitor clicks on a banner. Usually this navigates him away to a site of the advertiser
Cost per action	A payment is due only then when a referred visitor takes conscious action at the advertisers site, for example, making a purchase.
Revenue Share and Lifetime Value	There is no payment for handing over a lead as such, but the affiliate receives a share of that visitor's future spending on the merchant site.

Table 3.4: Overview of possible advertisement revenue determinations

3.3.2 Sponsoring

Although a sponsor can choose to use display ads, there are other ways in which sponsorship can lead to revenue generation. Especially when used in an environment with valuable content, sponsorship offers several options. One of these examples is content sponsorship. With content sponsorship a section of the website or specific content is re-skinned with the sponsors branding, which creates a custom branded content experience. With this type of sponsoring, it is hard to determine how much revenue will be generated. A possible option is that the sponsor pays a fee for using the content plus taking care of the costs for creating and distributing the content. Both these types of sponsoring are considered a form of advertisement in this thesis.

Another option is that of idealistic sponsoring where an organization offers to pick up the bill without return considerations. "Although many kinds of information can be effectively delivered by for-profit information intermediaries, socially beneficial information often requires subsidized provision from government or nonprofit intermediaries in order to encourage consumption up to socially optimal levels" (Womack, 2002). Womack uses five tests to determine which institutional form will be the most beneficial form to use in different situations. In a situation where there is transparent information of social benefit, with few intermediaries and many non-paying clients, subsidy or nonprofit/government provision is desirable. An example of this type of sponsoring in the field of sport content is the sponsoring by the government through the NOS of the video streams during the Olympic Games in Beijing.

3.4 Revenue model determinants

Digital content services, like the websites of sport unions, may deliver content with a certain use value, but this doesn't imply that the service will recover their costs. Wijnhoven and Kraaijenbrink (2008) state: "The reasons for these cost coverage problems have their roots in behavior of content suppliers, behavior of potential customers and information markets characteristics." Although digital information services as are not fully comparable to digital content services, it is likely that due to their similarities, in production and distribution, the cost coverage problems are based on the same principles. Therefore these three topics will be seen as the determinants that influence the selection of a (combination of) revenue model(s).

The characteristics of the digital content market and the content supplier(s) will be discussed in section 3.4.1, 3.4.2 and 3.4.3, with the help of literature about these topics. Information about the potential customers will be gathered through market research.

The conceptual framework looks as following:

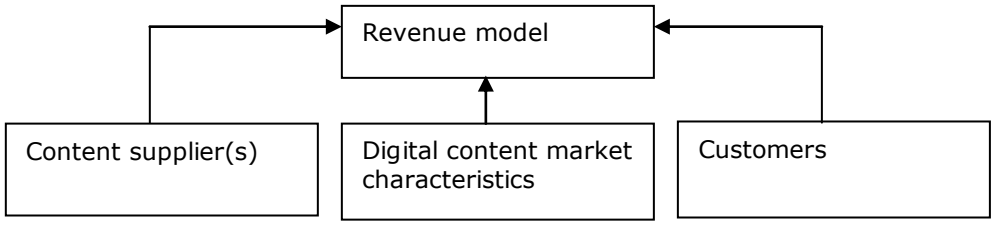


Figure 3.4: Conceptual framework of revenue model determinants

The revenue model, being a complementary yet distinctive concept of the business model (Amit and Zott, 2001), is closely interlinked with elements from that business model.

3.4.1 Content supplier

Sport unions
As sports differ, so do their rights. Every sport has its own type of competition and championships. Also their suitability for content registration is different. Some sports are real exposure sport (e.g. cycling), where other sports are not that well suited for registration (e.g. chess). This leads to a situation where rights on sport content are anything but clear. Every union has its own bundle of content that it can exploit. Table 3.5 provides an overview of the rights that the four sport unions used in this thesis have. Generally unions have the content rights of National Championships, other tournaments they organize and of their competitions. The (image) rights of competitions belong technically to the clubs, but the clubs handed these rights over to the covering unions. Soccer is an exception where the clubs, united in the ECV, have the rights for the competition.

Unions have multiple choices when exploiting their rights. From selling all the rights at once to selling only specific rights for a specific period of time. Options are to sell the broadcasting rights for a certain medium, for a certain period of time, to sell only summary rights, exclusive of non-exclusive, etc. Currently the sport unions have sold the broadcasting rights to the NOS. In the situation for the next four years, the sport unions are trying to sell more specific rights so that they can remain in control of their content. Rights that are relevant for a portal site are the archive rights and Internet rights. Sport unions have the intention to preserve these rights. It is important to state that the content rights for the portal are non-exclusive, because the content has also been sold to other parties, like the television broadcaster. The fact that the television broadcaster often chooses to broadcast a summary of the highlights makes it also possible for the portal site to offer 'different' content (e.g. a whole coverage or additional interviews).
Production costs for events and competitions vary from € 3,000 for an hour up to € 5,000 in case of a live broadcast (Geestman, 2008).

Sport Union	Competition / events rights
KNZB (Swimming)	NK Lange baan NK Korte baan Dutch Open Waterpolo Competition Waterpolo Cup Finale (Qualification) Matches teams NK synchroonspringen NK schoonspringen
Nevobo (Volleyball)	National competition Supercup NK Beach Qualification matches EK / WK / OQ
NBB (Badminton)	Competition NK 2009 Yonex Dutch Open Carlton GT Cup 2009
KNWU (Cycling)	NK Road NK Piste NK MTB NK BMX NK Cyclo-cross NK Track Cycling WK Cyclo-cross 2009 (singe event)

Table 3.5: Overview known image rights of sport unions

User generated content
User-generated content is not a new development. Radio shows and newspapers are among the media that use user generated-content for a long time; by publishing letters of readers or through programs where listeners give their opinion about a subject. What is new is the use of the term 'user-generated content'. The concept is used for content that is produced by a non-professional user. A related concept is that of crowd sourcing, which is used for describing the phenomena, that organizations use large groups of people to perform tasks formerly performed by employees or contractors. Well-known examples of online user-generated content can be found on websites like Wikipedia and YouTube. A famous Dutch example of a site that uses user-generated content was the news site skoeps.nl. The idea was to create a news website filled with user-generated content. This initiative has recently stopped, because it lacked a viable business model.

For a website, user-generated content can be used in different ways. The first and most used option is to use user-generated content as tool to attract users and enhance commitment. It is used as some kind of teaser for the 'real' content; it ads value to the proposition that a portal offers. The generators of content receive acknowledgment from peers as reward for their work. The other option is to create content by crowd sourcing. The idea behind this is that other people might come up with other or better content then an organization can create by itself. Content generators receive financial rewards for their work. This might be a fixed fee or through revenue sharing. However, acknowledgment seems to be here also an important part of the reward.
As with most new developments, the true impact of user-generated content is hard to assess. At this moment in time however, the use of UGC by sport organizations is mainly a 'gimmick'. Generating attractive content like the registration of a game or an interview with an athlete is currently reserved to professionals. Especially the mainstream sport content that attracts most visitors is cannot be generated by 'the crowd', because of legal and practical obstacles (e.g. prohibitions to film in stadiums).
A better possibility for user-generated content lies on a lower (club) level. In many clubs there are already volunteers that report about matches, club activities or performance of possible opponents. Digitalized reports of these volunteers can be used as digital content by sport organizations. Complementary research has to indicate if there is a demand for this type of content and whether this content can be exploited.

3.4.2 Digital content market characteristics

Digital content is a generic term for all content that has been digitized. There are different concepts that fall under the umbrella of digital content, but not all are applicable in this case study. The term 'information goods' (Shapiro and Varian, 1998) is too generic, as it also holds goods that can be tangible. The term 'digital product', as used by Luxem (2000) to describe information that is already stored completely in digital form and can be transferred over communication networks seems to fit the case situation. However, the separation in discrete categories between goods and services seems artificial, as most business theorists see a continuum instead of a dichotomy. Therefore, Loebbecke's (1999) concept of Online Delivered Content can also be seen as a valid concept, as it limits to those products whose value can be produced, traded and delivered online, but includes services. To summarize, the concept 'digital content' as used in this thesis comprehends intangible, digitized goods that are traded and delivered online.

The fact digital content of sport unions is delivered through a new medium with a new technology has multiple impacts on the revenue model.
Gallaugher et al. (2001) describe digital content as information goods and states that "information goods typically have high fixed costs and low or virtually non-existing marginal costs". Shapiro and Varian (1998) also state that "information is costly to produce but cheap to reproduce". These descriptions hold two different statements. The first one is that information goods have high fixed costs. The second statement is that information goods have low or almost zero marginal costs.

The high fixed costs of information goods are inherent to producing these goods. These costs are known 'first-copy costs'. The label 'high' is relative to the overall costs that have to be made to provide these goods. Digitization has no significant influence on these first-copy costs, but rather on the marginal costs.

The statement of low or virtually non-existing marginal costs is appealing. Anderson (2008) envisions already zero marginal costs, which would lead to an economy where goods are offered for free. These assumptions may hold for large corporations with a high turnover, for (small) sport unions with a relatively low turnover, these costs definitely aren't negligible. Marginal costs like storage and distribution are not negligible and do have to be taken into account as costs that need to be retrieved.

That digitization has an impact on the revenue models has another reason. "Internet technologies tend to reduce variable costs and tilt cost structures toward fixed costs, creating significantly greater pressure for companies to engage in destructive price competition" (Porter, 2001).

3.4.3 Customers

Enders et al. (2008) describe the impact that three important revenue drivers have on the revenue generation on social network sites, namely 'number of users', 'willingness to pay', and 'trust'. There is of course a minimum of trust needed to engage in any transaction, but as the driver 'trust' relates strongly to trading between members of a social network, it is les relevant as a variable determinant of the revenue model for digital content exploitation. Therefore 'number of users' and 'willingness to pay' remain as revenue drivers.

The two revenue drivers are import elements in the model, influencing the choice for an appropriate revenue model, and therefore need to be measured. According to the Theory of Reasoned Action (Fishbein and Ajzen, 1975), the best predictor of behavior is the intention to do so. This intention for both constructs is measured in the questionnaire. Section 4.4 elaborates on the measurement of these constructs.

3.5 Conclusions

This goal of this chapter was to determine how revenue models be categorized so that a comparison is possible and to understand what the revenue model determinants are. This answers research question 2 and 3.
Based on the combination of the possible outcomes of the revenue process, as described in chapter 2, with the known possibilities from authors and practitioners, a categorization can be made, as requested in research question 2:

How can revenue models be categorized so that a comparison is possible?

A meaningful categorization of revenue models is a categorization that shows the decisions made in the revenue process. Therefore a distinction can be made between direct and indirect revenue models. Within these two types, distinctions can be made between on how the processes are modeled. It turns out that there are only a few possibilities to alter the process. Most different revenue models mentioned by authors and practitioners are changes in the realization of a model. They describe how the money flows instead of where the money comes from. The categorization looks like this:

Direct revenue models	**Indirect revenue models**
- Subscriptions	- Advertising
- Per unit fee	- Sponsoring
- Self determined pricing	

Besides determining the categorization of the revenue models, the revenue model determinants have to be known to analyze which revenue model is appropriate when. Therefore research question 3 needs to be answered:

What are the revenue model determinants?

The revenue model determinants, which are needed to compare the different revenue models, stem from three categories. The following determinants are found to have an influence on the revenue model:

Category	**Determinants**
Content supplier(s)	Content production costs
Digital content market characteristics	Fixed cost Marginal costs
Customers	Number of users Willingness to pay

4 Methodology

With the theoretical modeling completed, actual data is needed to come to a revenue model comparison. Costs calculations are rather straightforward, because most costs can be known in advance. The allowance application for the digital platform offers an insight in the different relevant costs. The revenue side however is far more unknown. Questions like how many people are interested in the offered content, which part of the population is willing to pay for content, what is the preferred payment choice and which amount people are willing to pay are unknown yet. The answers on these questions are needed to complete the equation. Because this information is not elsewhere available, field research has to be conducted to provide this information.

4.1 Research method

A survey among the members of sport unions is one of the options to acquire relevant information. As we're interested in collecting data for describing a population too large to observe directly to measure attitudes and orientations, a survey is the best data-collection method. The survey, which is a CSAQ (computerized self-administered questionnaire), has been constructed according to the 'Principles for Constructing Web Surveys' (Dillman, Tortora and Bowke, 1999) as statedin Appendix B and instructions of other methodologists like Babbie (2007), Sekaran (1992) and Geurts (1999).

4.2 Population and sampling

The desired generalization of the outcomes is to members of all sport unions that have the possibility to generate digital content from a competition element in their sport. The unit of analysis therefore is the member of the sport union.
However, it is at this moment not certain how homogeneous these sport unions are. For this reason and the fact that questioning all members of the 90 sport unions is not feasible due to the lack of a common database, an a-select sampling among all sport unions isn't an option. The best possible option next to a-select sampling is stratified, a-select sampling (Babbie, 2007). First advantage of stratified sampling in this case is that the results at least can be generalized for the strata. The idea is also that if the strata's themselves are selected on the basis of relevant variables, these strata's can be seen as a representation of the population of sport unions.

Document research about sport images (Van Dijk and Stout, 2006) (NOC*NSF) and an interview with a sport consultant (Davinci) have led to two variables that can be used to select relevant strata. These variables are size and whether a sport is a competition or event sport. The variables are selected, because they are suspected to have an impact on the revenue generating capabilities of sport unions. Based on the two variables and the availability of sport unions within the database of the Nationale Sportpas, four sport unions have been selected as strata. These sport unions are the KNZB, Nevobo, NBB and the KNWU

The database of the Nationale Sportpas has been chosen as it contains a unique collection of sportsperson. There is no other database with access to so many members of different sport associations. The Nationale Sportpas is a loyalty program for sportsperson. Members of participating sport associations automatically receive the Nationale Sportpas. Sportspersons have to register themselves with the Nationale Sportpas if they want to participate in the loyalty program. Their e-mail addresses are stored into a database. People have to opt-in to receive information from the Nationale Sportpas. There might be a population bias due to the opt-in condition of the Nationale Sportpas. However, according to Dannenberg (2006), there are many different reasons for sportsperson to join a loyalty program. His research at the KNHS (Koninklijke Nederlandse Hippische Sportfederatie) doesn't indicate that members of the Nationale Sportpas differ from the population of sport union members on items like gender, age or fanaticism. Therefore we

consider the sampling frame of the Nationale Sportpas to be consonant with the population we wish to study.

Association	Event / Competition	Size
KNZB (Swimming)	Event	146,063 (large)
Nevobo (Volleyball)	Competition	127,308 (large)
NBB (Badminton)	Competition	63,120 (small)
KNWU (Cycling)	Event	28,456 (small)

Table 4.1: Selection criteria sport unions

Now that the strata for the research are known, they need to be drawn from the population for this cross-sectional study. As there are no incentives to reward participants, the invitation only can be send once due to restrictions from the Nationale Sportpas. Online surveys are known to have a low response rate, a minimum response rate of roughly 1% is expected. This expected response rate is based on an average response rate of 15% for comparable online mail surveys according to Shih and Fan (2008) and 1% or 2% for a survey without incentives according and without a reminder according to two marketing employees of the Nationale Sportpas.

The number of surveys needed has been calculated based on a confidence interval of 5% and a confidence level of 95%. Although there is probably not a an even split in the population among people that are willing to pay and people who aren't, there is no better figure known at this moment, which leaves no choice than to equal the parameters for the binomial. A 50/50 division will lead to the highest number of respondents necessary. This leads to a needed response of 384 participants. Therefore, with an expected response rate of 1%, approximately 38,400 sportsperson have to receive an invitation e-mail.

From the Nationale Sportpas database, an a-select sampling of 10.000 members will be taken from KNZB, Nevobo and the NBB. Because the Nationale Sportpas contains only 2,229 KNWU members, the invitation will be spread among all KNWU members. The selected sportsperson will receive an invitation e-mail (See appendix C), which requests them to participate in the questionnaire.

4.2.1 Preventing survey errors

Groves (1989) defines four types of error that have an influence on the ability to estimate the distribution of characteristics in a population from surveying only a sample of that population. These sources of error are coverage error, sampling error, measurement error and nonresponse error.

Coverage error
For surveys conducted over the Internet, there is the concern that a large fraction of the population has no access to a computer or is otherwise unable to participate in an Internet-based survey. In this case the answers regarding the willingness to pay and the preferred payment method provided by a web survey might even be a better indicator than a random sample of the population. The respondents answering the survey are those respondents that are using the portal of sport union already. However, there is still a difference between the target population and the frame population. This has to be taken into account when the survey figures are generalized.

Sampling error
There is a known bias the stems from the fact that the population for these surveys only consists of the members of sport unions, which can be seen as active sportsman. This means that there is a difference between the target population and the population of inference. Although the population of interested people in a sport is bigger than just the members of a sport union, members of sport union are seen as the most well defined group to conducted research upon.

Nonresponse error
By pre-testing the questions in the questionnaire, giving explanation on why questions are asked, keeping the survey short and by guarantying anonymity, the item nonresponse should be kept to a minimum.

Measurement error
By using the Theory of Planned Behavior and the Price Sensitivity Meter, the chance of measurement errors should be greatly reduced. A self-administered questionnaire like this web survey tend to elicit the most-accurate response to sensitive questions, which should result in better data regarding questions about the perceived behavioral control and the attitude toward the behavior. Transcriptions errors are avoided by the use of a digital database that contains the answers to the surveys.

4.3 Operationalization

Chapter 3 showed what the revenue model determinants are. The determinants regarding content supplier and digital content market characteristics can be found through document research. The determinants regarding the customers have to be investigated. These determinants are: number of users and willingness to pay.

As intention is the best predictor of actual behavior (Ajzen), both determinants are measured based on the intention dimension.
The intention subjects have, to watch sport content through a website, is seen as an indicator for the number of users. The intention subjects have, to pay for sport content through a website, is seen as an indicator of the willingness to pay.

The price used to validate the revenue models is measured by asking subjects what they perceive to be an acceptable price. The perceived value of the content by consumers is the single indicator for the price construct as used in the validation.

The questionnaire consists of five sections. The first section collects information about the interest people have in sport images. Questions are asked about the type of images people are interested in and their current watching habits. The second and the third section collect information about the interest people have in watching sport images through a website and whether they are willing to pay for this content. The fourth section of the questionnaire focuses on the price people are willing to pay for sport content. The fifth and final section of the questionnaire obtains information about the type of respondents that participated in the questionnaire.

4.3.1 General information

The first section consists of five questions:

- The first question of the questionnaire asks respondents what their sport is. This is used to divide the respondents into members of the four sport unions.
- Question two measures the amount of time people spent watching sport images on a ratio level by asking how long they watch sport content on a weekly basis. This question provides an indication about the amount of offerings people can consume.
- The third question provides an insight in the acceptance of different media channels by asking respondents which channels they currently use. The options are free television, payment television, Internet or via mobile phone.
- Question four measures the interest in sport images for three different types of geographical possibilities, namely international, national and regional.
- Question five measures the type of sport images people are interested in. Respondents can choose between full matches, summary of matches and review of matches. Both question four and five are used to provide background information, which can be used by exploiters to determine their offer.

The fifth and final section of the questionnaire obtains background information about the type of respondents that participated in the questionnaire by asking five questions about gender, age, level of education and sport activeness.

4.3.2 Number of users & willingness to pay

The second and the third element of the questionnaire collect information about the interest people have in watching sport images through a website and whether they are willing to pay for this content. The Theory of Planned Behavior is used to predict the actual behavior people will display regarding these concepts. Although many 'quick' surveys measure the intention to perform a behavior via a single construct, Fishbein and Ajzen already described intention as the function of two determinants: attitude and subjective norm. To overcome the problem that several non-motivational factors exist, Ajzen (2006) introduced the Theory of Planned Behavior. The TPB extends the TRA with the determinant perceived behavioral control. Perceived behavioral control refers to the person's perception of easy or difficulty to perform the behavior (Ajzen, 1991) and relates to Bandura's self-efficacy concept.

Multiple authors (Soelberg, Stevens and Bach, Orbell et al. and Gollwitzer) separate a predecisional phase from a postdecisional phase to explain the discrepancy between intention and behavior caused by the psychological process. This distinction refers to rather complex behavior, e.g. job seeking (Van Hooft et al., 2006). These implementation intentions (Gollwitzer, 1993) may offer additional insights in the intention – behavior relation for complex behavior. However, the predecisional phase, which parallels Ajzen's intention formation, offers insights in which goal to pursue. Combined with actual performed behavior, which can be used as an antecedent of actual behavior to increase the strength of predictions of actual behavior based on TPB outcomes. The postdecisional phase offers additional insights in why people do or don't perform behavior despite their intention, but can't be measured upfront. Therefore the TPB is suited to measure the two determinants of the revenue model. When using the Theory of Planned Behavior, a five-point Likert scale has been used as often as possible. To create internal consistency, the answer possibilities ranging from 'Totally Disagree' till 'Totally Agree' are used as often as possible.

As the Theory of Planned Behavior indicates, intention is the best predictor of actual behavior. Therefore the questionnaire has been designed according to the TPB.
The behavior of interest is defined in terms of its Target, Action, Context and Time (Ajzen 2006). In this research, we are interesting in two actions, namely watching and paying. The target, context and time remain the same for both actions. The target is the content, the context is through a website and the time is defined at a general level, namely the near future. Defining the two behaviors research in TACT terms results in:

- Watching content through a website in the near future
- Paying for content through a website in the near future

The three constructs attitude toward the behavior, subjective norm and perceived behavioral control, have been measured by only two questions per construct because of the limited questionnaire length.
The attitude toward the behavior has been measured with the following two components:

- One component which is instrumental in nature, represented by the adjective pair 'worthy – worthless'
- The second component reflected the experiential quality use the measuring scale 'unpleasant – pleasant'.

The subjective norm has been measured with the following two items:

- The first item measured an injunctive quality by asking the attitude of important others. Important others have been defined as friends.
- The second item captures a descriptive norm by asking whether important others perform the behavior themselves.

The perceived behavioral control has been measured using the following two items:

- The first item captures the perceived capability of performing the behavior by asking respondent whether they find it easy to perform the behavior
- The second item measured the controllability respondents experienced over the behavior by asking whether it was up to them to display the desired behavior.

After testing for internal consistency, it turned out that the second question about perceived behavioral control reduced the Cronbach's Alpha (appendix D). This question is therefore eliminated from the intention construct. The score on the remaining five questions is recoded into two new variables by adding the scores of the five questions and coding the results into three options:

- No intention (cumulative score = < 15)
- Neutral (cumulative score = 15)
- Intention (cumulative score = > 15)

The two new variables show the overall intention to and to pay for content through a website in the near future.

4.3.3 Price

The fourth element of the questionnaire focuses on the price people are willing to pay for sport content. There are several different research methods to determine the price, for example the Price Sensitivity Meter (Van Westendorp, 1976), Concept Test (Moore, 1982), Conjoint Analysis (Green, Caroll and Goldberg, 1981) and Discrete Choice Modeling (Ben-Akiva and Lerma, 1985).

The Price Sensitivity Meter (PSM), developed by Dutch economist Peter van Westendorp, is a frequently used method to estimate an optimal price. The underlying premises are that there is a relation between price and quality and that consumers are willing to pay more for a higher quality. In order to determine the price sensitivity and in this thesis the optimal price, four questions are asked to potential customer. The cumulative frequencies of the four questions can be plotted and four key intersections can be interpreted. These four questions are:

1. At what price do you consider a product to be cheap, but would you still consider buying it? (bargain)
2. At what price do you consider a product to be expensive, but would you still consider buying it? (expensive)
3. At what price do you consider a product to be so inexpensive that you would doubts its quality and would not consider buying it? (too cheap)
4. At what price do you consider a product to be too expensive and would you not consider buying it? (too expensive)

The four intersections are the Marginal Point of Cheapness (MPC), Marginal Point of expensiveness (MPE), Indifference Price Point (IPP) and the Optimum Price Point (OPP). The Optimal Price Point can be seen as the most acceptable price, which can be used in the validation calculations. There are two limitations mentioned of this approach. The first limitation is that respondents need to have a good reference price to answer these questions; otherwise the questions measure price awareness instead of price sensitivity. The second limitation is that coming up with a price doesn't mean respondent will also show the expected behavior (buy the product for that price). As digital content is a relatively new product, it is indeed possible that many respondents have no reference. However, this is no real limitation for the validation, as this method indicates what people expect prices to be and this indication can be used as an initial price. The second limitation can be overcome by measuring the expected behavior separately. By asking payment behavior before price, only the answers of people interested to pay for content are processed, which leads to an uncontaminated overview of prices people are willing to pay.

Choosing between the different research methods to determine the price, the 'limitation' of the PSM as measuring price awareness based only on price and not on features or competitive products is its major strength. The other methods mentioned already dictate a price (or prices). The PSM lets consumers set their price independently without guiding them by choosing a price. This offers a clear insight in how people value sport images.

5 Results

Goal of this chapter is to provide the missing data, which is needed as input for the revenue model validation in chapter 6. Section 5.1 clarifies how the data was gathered and attends to the matter of representativeness of the sample. Section 5.2 discusses the outcome of the survey. There is a subdivision based on a section with background information and a review of the revenue model determinants. Section 5.3 summarizes the outcome of the survey and thereby creates an overview of the relevant data for the revenue model validation.

5.1 Observations

5.1.1 Response

The data gathering started on Friday the 24th of October at 12:00. 29,589 e-mails where send from the Nationale Sportpas to members of the four sport associations to invite them in participating in the survey. Because no questionnaires were answered anymore on Tuesday the 28th of October, the response possibility was closed and the database downloaded for processing on Friday the 29th of October at 10:00 in the morning.

Association	E-mails delivered	E-mails opened	Questionnaire viewers	Questionnaire completed
KNZB	9.143	3.064	565	359
Nevobo	9.042	2.835	502	376
KNWU	2.045	673	121	93
NBB	8.972	3.025	431	306
Total	29.589	9.587	1.619	1.134

Table 5.1: Questionnaire response overview

A total of 1420 respondents filled in the questionnaire, which gives an overall response rate of 4.9 %. This low response can partially be explained by the large amount of respondents who haven't read the e-mail (not opened or spam-filter), namely 67.6%. The response rate calculated for the amount of respondent who actually have seen the invitation is 14.8%, which corresponds with the average response rate for web surveys as indicated by Shih and Fan (2008). After removing all empty and incomplete questionnaires, 1,134 questionnaires remained, which leads to a net response of 3.9% based on all delivered e-mails and 11.8% based on the viewed invitations. Still, this indicates a rather high drop-out rate of 20.1%. This high dropout rate partially can be explained by the rigorous removal of incomplete questionnaires. A questionnaire is considered incomplete if:
- Both the questions about intention to watch and intention to pay haven't been answered
- More than 50% of the questions haven't been answered.

The remaining records have been checked by hand to ensure that all answer possibilities where filled in correctly.

5.1.2 Representation

The questionnaire shows an almost equal distribution between men and women, namely 51% versus 49%. According to the statistics of NOS*NSF (2008), the distribution for all sport unions should be 69% male and 31% female. However, we know that we have at least one sport union with a strongly skewed distribution, namely the KNWU. Therefore we perform the chi square test on the four sport unions to determine whether there is significant bias based on gender. The chi-square shows that there is a significant difference between the amount of males and females (X^2=20.82 DF=3, p=<0.001) within two of the four sport unions. There is a significant difference within the KNZB (X^2=8.40

DF=1, p=<0.005), with more females than -males and a significant difference within the Nevobo (X^2=9.23 DF=1, p=<0.005), with more males than females. No significant gender difference is found within the KNWU (X^2=0.076 DF=1, p=>0.5) and the NBB (X^2=3.11 DF=1, p=>0.05). As the overall gender difference is not significant (X^2=1.17 DF=1, p=>0.2), we conclude that the gender distribution of the sample matches the gender distribution of the population.

Sport union	Male	Male expected	Female	Female expected	Total
KNZB	42.9% 152	50.7% 179	57.1% 202	49.3% 175	100% 354
KNWU	82.4% 75	87.0% 76	17.6% 16	13.0% 15	100% 91
Nevobo	45.8% 168	38.0% 139	54.2% 199	62.0% 228	100% 367
NBB	59.3% 178	54.5% 163	40.7% 122	45.5% 137	100% 300
Total	51.5% 573	49.9% 555	48.5% 539	50.1% 557	100% 1,112

Table 5.2: Gender distribution among sport unions

There is also a normal distribution for age, with an average of 32 years. It is slightly skewed towards the left with the median being 27 years. The NOC*NSF data until 2006 used only a division between junior (< 18 years) en senior (18 years or older). In 2007 27 sport unions presented their information according to 8 age segments. From our strata, only information from the Nevobo is known. The Nevobo has almost three times a many junior members than the average sport union. As the age differences vary greatly among these sport unions, no inferences can be made about age distribution without the segmentation from the other three sport unions. With the reservation that the 27 sport unions are not a representation of the population, one can argue that the median of the 27 sport unions lies in the category 35 – 44 years, where the median in our sample is between 25 – 34 years. So precautions about the age distribution could be made. However, the division in the population between junior and senior members is 32 % and 68%. The sample division is 29% junior and 71% senior members. Overall there is no significant difference in the distribution of junior members and senior members in the population and the sample (X^2=6.61 DF=1, p=>0.001).

80% of the sportsperson plays as a competition player and 97% of the respondents perform their sport weekly. The response rate of the sport associations is very similar, but because less KNWU members received the invitation e-mail, the KNWU has a lower number of respondents compared to the other associations. Further research in section 5.1.2 shows that there is no difference between large and small sport unions or event and competition sport unions. Therefore the under representation of the KNWU is expected to have no major influence on the representation of the whole sample.

5.2 Analysis

5.2.1 Sport interest and current watching habits

Consumption sport images on television
The first question that is needed for the validation is the amount of time people spent on watching sports images. The average of 4 hours a week is consistent with the average of 4.1 hours per week found in recent research for Eyeworks and Unicem by Motivaction (Motivaction, 2008). However, drawing a histogram and a box plot (figure 5.1) offers an interesting insight. Because the distribution is strongly left skewed, the average gives a false indication of how long people watch sport images during a week. The indicators median and modus are more helpful. With less than 27% percent of the respondents watching more than four hours a week, the modus being 1 and the median being 2, the median is a better indicator than the average to describe how long people watch sport images. Therefore the value of the median will be used as an indicator of the amount of content a digital content provider has to create during a week.

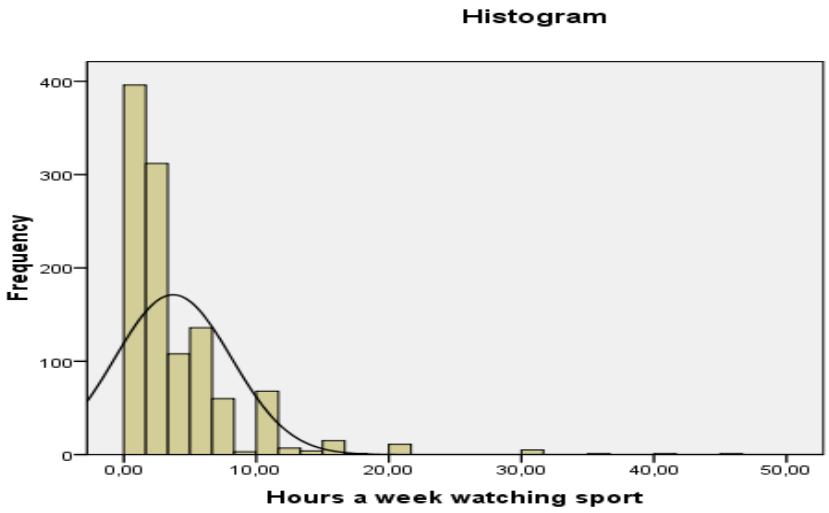


Figure 5.1: Distribution of respondents watching content

Current media channel preference
The respondents have been asked how they currently watch their sport images. An overwhelming majority uses the public or commercial channels. The Internet is already the second largest medium to obtain sport images, before digital payment television. There is currently no real interest in watching sport content via mobile phone.

Media channel preference

	Responses
	Percent of Cases
Public or commercial channels	94,3%
Digital payment television	6,9%
Internet	30,6%
Mobile phone	,2%

Figure 5.2: Media channel preference

Type of content
Although digitization offers new opportunities to exploit content, the product still has to appeal to the consumers. A new distribution channel or new ways of payment cannot replace good product offering. Therefore it is important to know where the interests of consumers lie. Table 5.3 shows that most consumers are interested in full matches and summaries of matches. There is less interest in review of matches.

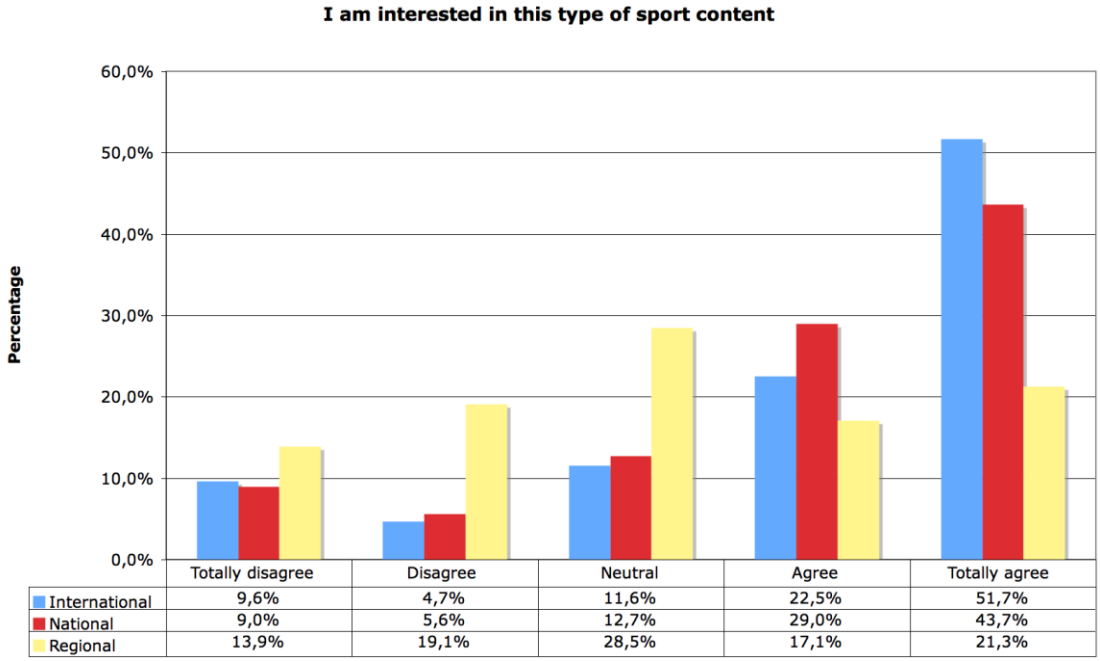
Interest in different types of sport images

	Responses	
	N	Percent of Cases
Full matches	795	70,9%
Summary of matches	741	66,1%
Review of matches	178	15,9%

Figure 5.3: Interest in different types of sport images

As stated in the allowance application for the digital platform (Davinci), the NOS focuses on coverage of international sport events / competitions. Less broadcast time remains for national or regional sport images. Respondents indicate that there is an equal interest in national (73%) and international (74%) sport images. The interest in regional sport

images is with 38% much lower. Many respondents (29%) indicated to be neutral when it comes to interest in sport images.



	Totally disagree	Disagree	Neutral	Agree	Totally agree
International	9,6%	4,7%	11,6%	22,5%	51,7%
National	9,0%	5,6%	12,7%	29,0%	43,7%
Regional	13,9%	19,1%	28,5%	17,1%	21,3%

Figure 5.3: Interest in sport content per geographical category

5.2.2 Number of users

Intention to watch
The outcome of the intention variable is that 49% of the respondents indicate that they intent to watch sport images through a website and 41% indicates that they do not intent on doing so. So the intention of the respondents to watch images through a website is 49%, with the margin of error for the 95% confidence being 3%.
If we compare it to a direct measure of intention as posted in question 8 (Appendix F), it can be found that approximately the same percent (52%) of respondents indicate that they intent to watch sport images through a website. Where 27% of the respondents showed no interest for sport images through a website on the direct measure of intention, this group increased to 41% on the composed measure of intention.

There was a significant difference between the observed and expected frequency of males and females towards the intention to watch sport images through a website (X^2=8.11 DF=1, p=0.005), were males are slightly more likely to watch sport images through a website than females.

For sport associations, there was no significant difference between the four sport unions (X^2=9.97 DF=3, p=0.019), nor between large and small sport associations (X^2=3.44 DF=1, p=0.063) or event and competition sport associations (X^2=1.45 DF=1, p=0.229). There is a significant difference between competition players and non-competition players, where competition players are more likely to have the intention to watch sport images through a website than non-competition players (X^2=20.96 DF=1, p= <0.001). A possible explanation might be that competition players have higher interest in their sport. There also seems to be a significant difference between the observed and expected frequencies regarding education (X^2=19.58 DF=6, p= 0.003), as respondents with a WO and HAVO/MAVO education have a higher intention of watching sport images through a website.

Also age seems to have an influence on the intention to watch (X^2=42.78 DF=5, p= <0.001), were people up to 40 years have a higher intention to watch sport images through a website than people from 40 up to 70 years.

Intention to watch * Age Crosstabulation

		Age						
		11 -20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	Total
Intention to watch	Count	220	106	63	53	46	25	513
	Expected Count	196,3	88,0	59,4	73,7	65,4	30,2	513,0
	% within Age	61,6%	66,2%	58,3%	39,6%	38,7%	45,5%	55,0%

Figure 5.4: Difference in intention to watch, based on age.

TPB constructs
We've used the theory of planned behavior to obtain a better understanding of the factors regarding intention to pay. The attitude towards the behavior, subjective norm and perceived behavioral control have been compared between sport unions and no significant difference have been found (p=0.566 p=0.295 and p=0.214) (Appendix D).

In the stepwise multiple regression, the attitude toward behavior was entered first and explained 57% of the variance in the intention to watch ($F_{1,1082}$ = 1407, p < 0.001). Subjective norm was entered second and explained a further 15% of the variance ($F_{1,1081}$ = 588, p < 0.001). Perceived behavioral control explained an additional 5% ($F_{1,1080}$ = 245, p < 0.001). A higher intention to watch was associated with a higher attitude toward behavior, a higher subjective norm and a higher perceived behavioral control (figure 5.5 and Appendix D). Overall 77% of the variance is explained by the three TPB constructs.

Variable	**Multiple R**	**R Square change**	**t**	**Significance of t**
Attitude toward behavior	0.752	0.565	25.69	< 0.001
Subjective norm	0.848	0.153	22.00	< 0.001
Perceived behavioral control	0.878	0.052	15.67	< 0.001

Figure 5.5: Stepwise multiple regression of predictors of intention to watch

5.2.3 Willingness to pay

The willingness to pay is 6% if asked directly. On the composed measure of intention, it is reduced to only 3%. And with only 2% indicating to be neutral, an overwhelming 95% of the respondents have no intention to pay for content.
Also here the percentage of respondents indicating to be neutral has declined in favor of the no voters. So, the intention to pay for sport content is 3%, with the margin of error for the 95% confidence being 1%.

There was no significant difference between the observed and expected frequency of males and females towards the intention to pay for sport images (X^2=1.16 DF=1, p=0.283), were males are slightly more likely to watch
For sport associations, there was definitely no significant difference in the willingness to pay between the four sport unions (X^2=0.14 DF=3, p=0.987), nor between large and small sport associations (X^2=0.01 DF=1, p=0.91) or event and competition sport associations (X^2=0.00 DF=1, p=0.99). Education has no significant influence on the intention to pay for content (X^2=7.86 DF=6, p=0.249) and also the fact whether someone is a competition player results in no significant difference (X^2=1.74 DF=1, p=0.187). There is also no significant difference on the intention to pay for sports images regarding age.

TPB constructs
We've performed the same analysis for the intention to pay as for the intention to watch. Analysis of the variance between large and small sport unions indicated that there is a significant difference in subjective norm between the two types of sport unions ($F_{1,1088}$ = 6.16, p=0.013) (Appendix D). However, further research using the Tukey B range test found no significant difference between the large and small sport unions (figure 5.6).

Homogeneous Subsets

SN paying

Tukey B

Sport association	N	Subset for alpha = 0.05	
		1	2
KNWU (Bicycle racing)	90	1,19	
KNBB (Badminton)	294	1,23	1,23
KNZB (Swimming)	347	1,27	1,27
Nevobo (Volleyball)	359		1,33

Means for groups in homogeneous subsets are displayed.

Figure 5.6: Tukey B range test

In the stepwise multiple regression, the attitude toward behavior was entered first and explained 39% of the variance in the intention to pay. Subjective norm was entered second and explained a further 10% of the variance. Perceived behavioral control explained an additional 5% of the variance. A higher intention to watch was associated with a higher attitude toward behavior, a higher subjective norm and a higher perceived behavioral control (figure 5.7 and Appendix D). Overall 53% of the variance is explained by the three TPB constructs.

Variable	**Multiple R**	**R Square change**	**t**	**Significance of t**
Attitude toward behavior	0.622	0.387	22.967	< 0.001
Subjective norm	0.697	0.099	11.456	< 0.001
Perceived behavioral control	0.732	0.050	10.801	< 0.001

Figure 5.7: Stepwise multiple regression of predictors of intention to pay

There is a rather large difference is the variance explanation between the willingness to watch and the willingness to pay. The difference is caused by a lower explanation of variance of the attitude toward behavior. This suggests that there is a difference between the attitude of respondents towards paying and their actual willingness to pay. The data shows that the attitude toward paying is lower than the willingness to pay. Because of the small number of respondents in favor of paying, the difference between attitude and willingness causes the relative low explanation strength of the variables on the willingness to pay.

5.2.4 Price

After establishing the intention to pay for online content, the forth section of the questionnaire tries to answer the questions how and how much consumers of digital content are willing to pay for that content.

Payment method
The first question, which payment method people would prefer, returned some remarkable results. 55% of the respondents preferred self-determined pricing. For a rarely used method this is a high percentage. Also the preference for pay-per view (29%) above subscription (15%) was not expected according to the theory (Fishburn et al., 1997).

Price setting
As explained in chapter four, the Price Sensitivity Meter method will be used to provide information for the price setting.

The acceptable price range for a subscription is the range between the PMC and the PME. The range between the PMC and the IPP receives the segment label 'cheap' and the range between the IPP and the PME is known as 'expensive'.
According to the theory the OPP leads to the highest penetration; it optimizes the turnover. The IPP can be considered as a 'normal' price. It leads to a lower turnover but a higher margin.
The intersections show the values for the different points as approximates as the lines do not represent linear equations.

Subscriptions
The Price Sensitivity Meter (figure 5.9) indicates that the acceptable price range for a monthly subscription lies between PMC of € 4.90 and the PME € 9.50. The Optimal Price Point is € 7.10 and the Indifference Price Point is € 9.30. The found Optimal Price Point of € 7.10 corresponds with an acceptable price of € 7.11 for a subscription found by the Motivaction research on sport content. Current market prices for soccer vary between € 3.99 and € 10.00.

Pay per view
The Price Sensitivity Meter (figure 5.10) indicates that the acceptable price range lies between the MPC of € 0.90 and the PME of € 1.80. The Optimal Price Point is € 1.00 and the Indifference Price Point is € 1.70. The Optimal Price Point of € 1.00 corresponds with an acceptable price of € 1.04 found by the Motivation research for a MMS with a 2 minutes summary. Current market prices for soccer matches vary between € 1.49 and € 6.95.

Self determined pricing
Self determined pricing is a revenue model that is rarely used. Therefore there are also no known methods to determine how much people are willing to pay if they are allowed to determine the price. Respondents where directly asked what they are willing to pay for content. Respondents indicate that if the content lives up to their expectation they are willing to pay an average of € 1.81. The modus and the median remain 1. The records have been cleaned from outliers by using the 1.5 IQR rule.

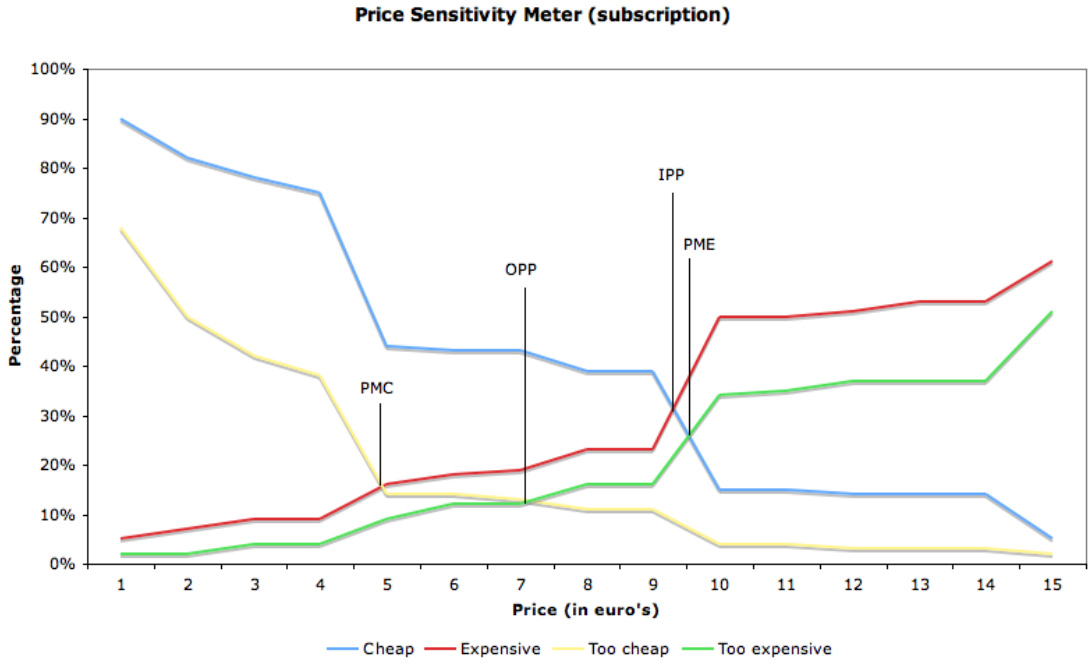


Figure 5.9: Price Sensitivity Meter for subscriptions

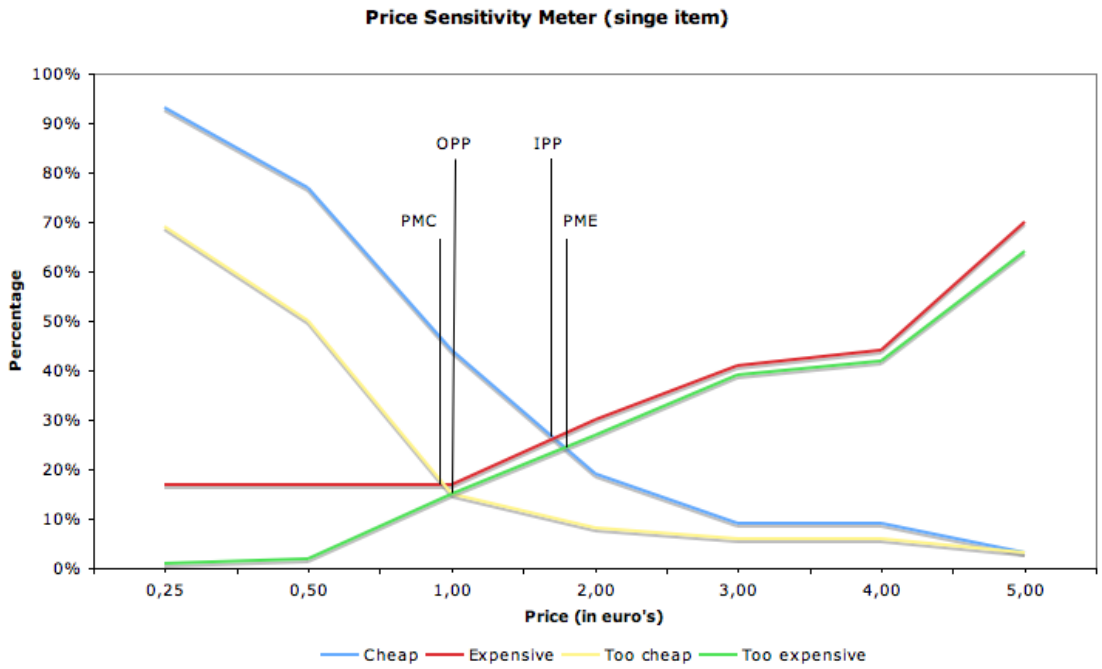


Figure 5.10: Price Sensitivity Meter for pay per unit

5.3 Conclusion

The goal of this chapter was to provide the missing values for the revenue model through field research. First an overview of the key findings will be presented, followed by an overview of the validation variables.

The main finding of the research among the members of sport unions is that there is no difference regarding the intention to watch and intention to pay among the different types of sport unions. The found values for the variables can thus be used for all four sport unions.

Sport interest en watching habits

- Internet has a substantial penetration grade with 31%.
- There is an interest in full matches and summary of matches.
- The modus for watching sport content is an hour and the median is two hours.

Intention to watch

- The intention to watch digital video content through a website is 49%
- There is a clear difference in intention to watch between people younger and people older than 40 years, where younger persons have a higher intention to watch.
- The intention to watch is equal for the members of the four sport unions

Willingness to pay

- The willingness to pay for content is 3%
- This willingness to pay is equal for the members of the four sport unions

Price

- The optimal price point for subscription is € 7.10
- The optimal price point for pay per view is € 1.00
- The average price for self determined pricing is € 1.81
- There is no significant difference between prices and type of sport union

6 Revenue model validation

This chapter economically validates the different revenue models. It is not possible to directly validate all revenue models in the same way. First, revenue models have to be evaluated by category. This evaluation will be based on the validation construction modeled in section 5.1. By using the distinction between direct revenue models and indirect revenue models, different revenue models can be compared according to their category. Section 5.2 validates the direct revenue models and section 5.3 focuses on the indirect revenue models.
The second step is to compare the best revenue models of the two categories to examine which type of revenue models suits a digital content service best. This comparison takes place in section 5.4.

6.1 Validation construction

The data gathered from the survey and document analysis serves as input for the validation of the revenue models. To examine whether it is economically feasible for sport associations to provide digital content, a simplified break-even analysis provides the point where total revenue received equals the total costs associated with the sale of the product. As explained in chapter 2, there is a difference between direct and indirect revenue models when it comes to revenue generation.

6.1.1 Cost structure

In the current digital platform setup, there are no variable costs for the infrastructural costs as sport associations pay a fixed fee independent of their usage. The total amount of fixed costs therefore consists of production and infrastructure costs. The infrastructure and production costs are based on the budget proposal of the allowance application for the digital platform. The budget consists of financial projections which are based on market conform assumptions about usage, tariffs and proven technology (Davinci, 2008).
The variable costs consist of the payment costs. Other costs like overhead are not a part of the equation. This has no influence on the equations between the different revenue models, as these costs are the same for all revenue models.

Production costs
The basic thought regarding production costs is that regional and national television partners finance a large share of these costs. New contracts with television partners consist of a clause that at the end of a license period content and the content rights will belong to sport associations, so that sport associations can use the content on their website. Besides this content, sport associations themselves also generate content. The initial idea is that sport associations produce a minimum of one hour a week. (These costs do not yet have to be made during a start up phase of three months, as they are a part of the allowance)

Infrastructure costs
Infrastructure costs for the digital content provider consist of several costs for different value objects. The document analysis resulted into four different cost categories, namely cost for the portal, streaming costs, storage costs and CRM cost. These costs can be allocated to the different sport associations. Usually there would be a separation between fixed (portal, CRM) and variable (streaming and storage) costs. The current allowance proposal however chooses to split all costs equally among the sport associations, which leads to a situation were actual use has no influence on the costs. Therefore all infrastructure costs are considered fixed.

Payment costs
Direct revenue models all have tot deal with settling payments. There are a large number of possibilities regarding online payments, e.g. via credit card, telephone, SMS, bank transfer or via an online bank account. Each payment method may lead to a difference in surcharge from the payment service.

A payment service provider like PayPal charges 35 eurocents per transaction plus an additional 1.9% and 3.4% of the transferred amount. Payment modules from banks like iDeal (Rabobank) result in transaction costs between 50 and 80 eurocents. For a digital content provider it is likely to use a payment service provider to handle the payment transactions. Based on a price comparison of several well-known payment service providers (PayPal, Ogone, ClickandBuy, Multipay and DocData), an estimation of 30 eurocent per transaction will be used.

One has to keep in mind that besides the costs for the payment service provider, there are also the transaction costs of financial institutions if a content service provider chooses to allow multiple payment possibilities.

Type of costs	Specification	Measurement	Costs
Production costs	Events		
	Live events	Per hour	€ 5,000
	Normal events	Per hour	€ 3,000
Infrastructure costs	Portal	Per year	€ 15,000
	Streaming	Per year	€ 5,500
	Storage	Per year	€ 3,500
	CRM	Per year	€ 2,500
Payment costs	Transaction costs	Per transaction	€ 0.30

Table 6.1: Overview of the relevant costs

Total costs
The total costs consist of the production, infrastructure and payment costs. These costs are now measured in different ways, which has to change in similar units, so that costs become comparable. The timeframe will be set to 1 year.
Based on the allowance application (Davinci, 2008), there are estimated to be 4 live events and 52 normal events on a yearly basis.
The equations used for the validation are:

Total costs = Production cost + Infrastructure costs + Payment costs
TC = PrC + IC +PaC
PrC= Live events * number of events + Normal events * number of events
PrC = € 5,000 * 0 + €3,000 * 52
PrC = € 156,000
IC = Portal + Streaming + Storage + CRM
IC = € 26,500
PaC = Transaction costs * transactions
PaC = € 0.30 * Q
TC = € 156,000 + € 26,500 + € 0.30 * Q

There is a difference between direct and indirect revenue models, as there are no payment costs for indirect revenue models. The equation for the total costs are therefore the total costs minus the transaction costs.

6.1.2 Revenue variables

The equations for validating the revenue models consist of several variables. Data from the survey provided values for the variables displayed in table 6.2. Besides these known variables from the survey, there are additional variables needed for the equations of the different revenue models.

Elements	Variable	Value
Consumers	Potential buyers	3 %
	Potential viewers	49 %
Revenue	*Fee*	
	Subscription fee	€ 7.10
	Per view fee	€ 1
	Self determined fee	€ 1.81

Table 6.2: Overview of the relevant revenue variables, based on market research

Validating the per unit fee and the self determined pricing requires an additional variable in comparison with a subscription. Subscriptions per month are based on a flat-fee use of the service. The amount of actual content consumed has no influence on the equation. For usage dependent transactions, the content usage by consumers needs to be measured. This measurement is used to estimate the number of transactions within a year.
For the advertising revenue model, even more variables are needed like the advertisement tariff and the pages a visitor visits. As there are no hard figures available, more assumptions have to be taken into the equation to determine the revenues.

Based on site analysis of three soccer websites (Ajax.tv, Ado.tv and Tricolores.tv), inferences are made about the number of page views, visitors, average visitors per day and other relevant statistics. These figures are needed to determine the revenues a website can generate. Instead of knowing only knowing the interest people have in sport images, it is also important to know how often they visit a site and how many pages they view, as these figures are used as input in the web advertising formulas. These figures can be used for both direct and indirect revenue models.

The measurement for content usage is based on an estimate of usage. The available website statistics offer no indication on what people will watch. For the equation of direct revenue models, it is important to know which percentage of the offered content will be watched. From the statistic 'number of visits per visitor', we know that a small percentage of the visitors, who visited these site 5 or more times, (5% – 7%) are responsible for approximately 30% of the visits. This group of interested fans visited these soccer sites an average between 9 and 11 times within 6 months. Based on these visiting figures we estimate that a realistic usage of content is 2 items a month.

Relevant variables for the advertising revenue model are the amount of visits and the page views per visit. From the website statistics of websites that offer sport images, it can be found that a visitor on average has 2 page views per visit. The number of visits has been calculated based on the available statistics. The variables needed for this calculation are 'unique visitors' and 'average visits per day'. By dividing the average visits per day by the unique visitors, you can see which percent of the unique visitors visits the site in one day. By multiplying this amount times 30 days, you can estimate how many views a site can expect in a month.
This calculation has been applied to the three soccer websites and shows that in a month, 30% of the unique visitors have viewed the website. Although there is a difference between fanatic and occasional viewers, there is no need to separate those groups as advertisement revenue is based on the total amount of ads displayed.

There are many possibilities to determine the revenue that a site is generating through advertising, as described in section 3.3.1. To come to an equation, it is practical to use reduce the number of variables as much a possible. Using one variable to measure how revenue is generated can do this. The most suitable variable is Cost per Million (CPM) as it is the industry standard. All other variables, like cost per click or cost per action can, directly or indirectly, be translated into CPM. For example, if a website receives a cost per click, the revenue per click can be converted to CPM by calculating the click through rate per thousand views.

The interview with the CEO of Sport2Media made clear that there is no such thing as a standard tariff for CPM, but that it depends on many variables like the target group of the website, the interested advertisers, etc. He indicates that on average a CPM tariff of € 15 is considered market conform. The CEO of Mininova.org, one of the largest Dutch Internet sites with thrives mainly on advertisement, indicated in a short interview that a CPM as low as € 2 was not unimaginable and that a CPM of € 15 could only be obtained with a highly segmented audience.

Another factor that determines the revenue is the amount of advertisement displayed on a website. There is a trade off between the image that a site wants to establish and the amount of advertisements that can be displayed. Based on a comparison of different sport sites, an average of two advertisement areas can be seen as a standard (Appendix E). Many sites also work with preferred sponsors, which are often mentioned in a leaderboard. As these referrals are a service to the sponsor, they are not taken into account in the equation.

The estimated variables needed for the equation are summarized in table 6.3

Elements	Variable	Value
Content	Transactions (yearly)	24
Advertisement	Display spots (per page) Page views per visit Visits (per month)	2 4 0.3
Revenue	Cost per million views (CPM)	€ 15

Table 6.3: Overview of the estimated relevant revenue variables

6.1.3 Validation criteria

A revenue model is considered economically viable if the revenue matches or exceeds the costs. The known data from the survey and document analysis is applied to an equation, which shows how many interested people in a sport are necessary to break-even. There are currently no indicators of the number of interested persons in a sport. NOC*NSF is planning to do research on this topic somewhere in the near future.
However, by comparing the required number of interested persons in a sport, a comparison among the revenue models can be made.

6.2 Direct revenue model validation

With the cost structure and the variables for the revenue validation known, the revenue model equations can be constructed. Subscriptions differ from per unit fee and self determined pricing, as there is no direct relation between usage and revenue. The equations for per unit fee and self-determined pricing contain the same variables, where only the value of the price variable varies.

As with the costs, the timeframe will be set to 1 year, so that revenues and costs become comparable. The dependent variable used in the equation will be the amount of buyers/viewers needed to break even. This number is based on the 3% of the respondents willing to pay for content and the 49% of the respondents interested in watching the content. First step is to create a revenue equation. The second step is to create a break-even equation by subtracting the costs of the revenues.

6.2.1 Subscription

The revenue can be calculated by using the following equation:
Revenue = Buyers * Subscription price
SP price = € 85.20
R = B * 85.20

We can use the equation for TC as computed in section 6.1.1. There are 12 transactions, as the transaction fee is collected on a monthly basis.

Total costs = € 156,000 + € 26,500 + € 3.60 * Buyers

The break even equation is:
85.20 * B = 182,500 + 3.60 * B
81.60 * B = 182,500
B = 2,237
B = 3%
Interested persons needed = 100% = (2237 / 3) * 100 = 74.567
Solving the equation indicates that there are 74.567 interested persons needed for a subscription model to break even.

6.2.2 Per unit fee

The revenue for a per unit fee model can be calculated using the equation:
Revenue = Buyers * Price per unit * Transactions
PuP = € 1.00
T = 24
R= B * 1 * 24
There are 24 transactions, which lead to a payment cost of € 7.20.
Total costs = € 156,000 + € 26,500 + € 7.20 * Buyers
24 * B = 182,500 + 7.20 * B
16.80 * B = 182,500
B = 10,864
B = 3%
Interested persons needed = 100% = (10,864 / 3) * 100 = 3621.34
Solving the equation indicates that there are 362,134 interested persons needed for a per unit fee model to break even.

6.2.3 Self determined pricing

Revenue = Buyers * Price per unit * Transactions
PuP = € 1.80
T = 24
R= B * 1.8 * 24
C = 156,000 + 26,500 + 0.30 * views * buyers
V = 52
There are 24 transactions, which lead to a payment cost of € 7.20.
Total costs = € 156,000 + € 26,500 + € 7.20 * B
43.2 * B = 182,500 + 7.20 * B
36 * B = 182,500
B = 5,070
B = 3%
Interested persons needed = 100% = (5.070 / 3) * 100 = 169,000
Solving the equation indicates that there are 169,000 interested persons needed for a per unit fee model to break even.

6.2.4 Model comparison

Comparing the three revenue models indicates clearly that a subscription revenue model generates more revenues than the revenue models with a per unit fee and therefore needs less buyers to break even.
The influence of the payment costs on the revenue generating capabilities of a model become visible in the earnings per buyer. The difference in price level between per unit fee and the self determined pricing is 80%, where the earnings per buyer increase with 114%. To equal the subscription earnings, there are 117 instead of 24 transaction needed for the per unit fee and 55 transactions for the self determined pricing. With the offering of 52 items on a yearly basis, it seems doubtful that these numbers can be realized.

6.3 Indirect revenue models

The indirect revenue models consist of two types of revenue model. The advertisement model is based on an equation that addresses several variables, which need to be measured to calculate the revenue. The sponsoring model on the other side has no equation at all. A sponsor picking up the bill for the costs of delivering the content or paying an additional fee cannot be fitted into the equation. The direct relation between the variables like the number of visitors, the pages viewed or the duration of a visit is not there. Therefore this section focuses entirely on the advertisement revenue model.

The revenue equation consists of the following variables: display spots per page, page views per visit, the number of visits per month and the CPM rate. These variables determine the revenue of site can generate. The equation is:

Revenue = CPM rate * Display spots per page * page views per visit * visits * visitors
R = 0.015 * 2 * 4* 3.6 * V
Total costs = € 156,000 + € 26,500
TC = € 182,500,-
The break-even equation is:
0.432 * V = 182,500
V = 422,454
V = 49%
Interested persons needed = 49% = (422,454 / 49) * 100 = 862,152
Solving the equation indicates that there are 862.152 interested persons needed for a subscription model to break even.

6.4 Sensitivity analysis

The validation of the direct and indirect revenue models in section 6.2 and 6.3 is based on the figures obtained through research. Some of the values for certain variables, like the CPM or the page views a website can generate, are based on the estimates of experts or limited market data. To prevent wrong inferences regarding revenue model viability because of singe scenario analysis, two scenarios are tested to study the effect of value variations on the viability of revenue models. The results of the sensitivity analysis will be used to create a profounder comparison.

The first step in the analysis is to examine which variables are able to vary. We subdivide the variables into three categories, as we did in the previous sections.

Costs
From the three types of costs used in the validation, the infrastructural costs are fixed and are not likely to vary. The production costs may vary due to use of other content resources, such as user generated content or sold content of which the usage rights have returned to the sport unions. Also the amount of content may vary if less or more content is offered.
Also the transaction costs may vary due to the use of other payment systems. Kalakota and Whinston (1996) describe the possibility of a token system for micro payments, which may reduce the transaction costs by aggregating several smaller payments into a larger payment.

Direct revenue variables
The figures for intention to watch and the fee's are based on market research. There are no reasons to assume that these estimates will vary. The figures on how often consumers will watch the content is based on estimates. Here minimum and maximum estimated values may offer deeper insights.

Indirect revenue models
As with the direct revenue variables, the figures of how often consumers watch may vary. The figures are based on interviews and website statistics, but other estimates about the values might be relevant. Therefore the page views, number of visits and CPM rate will be examined for minimum and maximum estimates.

Based on the changed variable values, a minimum and a maximum estimated value model are created. The minimum value model represents a worse case scenario with high costs and low revenues. The maximum value model represents an optimum scenario with low costs and high revenues. The scenario as presented in section 6.2 and 6.3, which is based on market research, document research and interviews is considered a realistic scenario for contemporary content exploitation.

Within the minimum value model, the costs are as high as they can be as all costs are allocated to the digital content service and the revenues are as low due to the use of the minimum prices from the Price Sensitivity Meter and low estimates of the CPM.

The maximum value model foresees low costs and high revenues. The low costs are due to the use of user-generated content and the absence of transaction costs. The use of user-

generated content could diminish the production costs of content, but not erase them completely, as there always has to be editing or moderation. There also might be some remuneration for user-generated content. Broadcasting companies like the BBC state in their editorial policy on user generated content that they might pay in exceptional circumstances for footage. The idea behind the digital platform is also that usage rights of content should return to sport unions, so that they can use produced content without having the production costs. Direct revenue models need a higher mix of professional content versus user-generated content, as there is a certain quality of images expected from paid content. Altogether, a reduction of 50% for direct revenue models and 90% for the indirect revenue models is considered a minimum. The high revenues are based on the maximum price of the Price Sensitivity Meter and more visits for the indirect revenue model. The demand for content remains 3% for the direct revenue models and 49% for the indirect revenue models. The following figures are used in the minimum and maximum value model estimations:

Elements	**Variable**	**Value**	**Low**	**High**
Consumers	Potential buyers Potential viewers	3 % 49 %	3% 49%	3% 49%
Revenue	*Fee* Subscription fee Per view fee Self determined fee Cost per million views (CPM)	 € 7.10 € 1 € 1.81 € 15	 € 4.90 € 0.90 € 0.75 € 2	 € 9.50 € 1.80 € 2.50 € 15
Content	Transactions (yearly)	24	12	52
Advertisement	Display spots (per page) Page views per visit Visits (yearly)	2 4 3.6	2 2 3.6	2 6 52
Fixed costs	*Production costs* Direct revenue model Indirect revenue model	 € 156,000 € 156,000	 € 156,000 € 156,000	 € 78,000 € 15,600
Variable costs	Transaction costs	€ 0.30	€ 0.30	€ 0.00

Table 6.4: Summary of the revenue model relevant variables

6.4.1 Low value model

The low values from table 6.4 are applied to the equations of section 6.2 and 6.3.
The effect of using the low estimates resulted in the following outcomes:
There are 110,234 interested persons needed for the subscription model to break even.
There are 844,934 interested persons needed for the per unit fee model to break even.
There are 1,126,543 interested persons needed for the self determined pricing model to break even.
There are 12,932,256 interested persons needed for the advertising model to break even.
The outcome indicates that a higher number of interested persons is needed for all models to break even. The increased numbers for the direct revenue models are 48%, 133% and 566%. The increase for the advertisement model is 1,400%. Direct revenue models are with low estimates more likely to break even than an advertisement model.

6.4.2 High value model

To determine the high values, the high figures from table 6.4 are applied to the equations of section 6.2 and 6.3. The effect of using the high estimates resulted in the following outcomes:
There are 30,567 interested persons needed for the subscription model to break even.
There are 37,233 interested persons needed for the per unit fee model to break even.
There are 26,800 interested persons needed for the self-determined pricing model to break even.
There are 9,179 interested persons needed for the advertising model to break even.

The high outcomes show a decline of interested persons needed to break even. The increased numbers for the direct revenue models are -59.0%, -89.7% and -84.1%. The decrease for the advertisement model is -98.9%. Within the high value model, the advertisement model is first to break even.

6.5 Comparison

The comparison between direct and indirect revenue models isn't as straightforward as the comparison of revenue models within the categories of direct and indirect models. Choosing a type of revenue model has implications for the whole business model, as can be seen by the process model and in the global actor view (Chapter 2). The actors in the business model change as do the value objects exchanged. However, the bottom line for the validation of both types of revenue models is their capability to break even. A business model should generate sufficient revenue to recover all costs to be seen as a sustainable business model. The question in this comparison is which type of revenue model is capable of breaking even with the lowest amount of persons interested in a sport needed.

The production costs of content, also known as first-copy costs, are the greatest barrier to content exploitation. The production costs are roughly 85% of all costs associated with exploiting content. Due to the redemption of all variable costs regarding content exploitation by the overarching organization, the marginal costs of exploiting content are truly zero. As both models have to overcome the same costs, the ultimate question is which model can generate the most earnings per group of interested persons in a sport. Section 6.5.1 compares the direct revenue models on these earnings and section 6.5.2 does the same for de indirect revenue models. Section 6.5.3 combines the findings of these section compare all the models.

6.5.1 Direct revenue models

There is considerable evidence of consumer preferences for subscription over per-use pricing. The three main reasons that lead consumer to prefer flat-fee pricing above a metered rate:
- Insurance: It provides protection against (sudden) large bills
- Overestimate of usage: Customers usually overestimate how much they use a service
- Hassle factor: In a per-use situation, consumers keep worrying about the costs of each item.

Based on the figures stemming from the market research, the digital content provider prefers a subscription fee above per unit pricing. The earnings per consumer generated with a subscription are not likely to be exceeded with a per unit fee.

There are three variables who determine when a per view fee is preferred above a subscription fee. These variables are: price, requested items and number of users. In this thesis the number of users is fixed at 3% of all interested persons, there are only four items to be broadcasted and the price is set, based on market research. However, our market research indicated that consumers prefer a per unit pricing strategy above a subscription fee (figure 5.5). And the high value estimates indicate that with a relatively high price and a maximum items requested, the earnings with a self-determined per unit pricing might exceed the subscription earnings. On the other hand, the minimum estimates and the realist estimate indicate a strong preference for a subscription model. The current payment costs are also in favor of the subscription model. Therefore the subscription model seems to be the direct revenue model capturing the most economic value.

6.5.2 Indirect revenue models

We've validated only one of the two indirect revenue models. There is no validation possible for the sponsoring model, as the financial outcomes of this model are based on specific direct negotiations between the digital content provider and the sponsor(s). The

essential difference with the other revenue models is the payment upfront. This removes the direct relation between usage and revenues. Off course a sponsor has expectations about the audience to reach, but the risks for not generating enough audience are handed over to the sponsor. On the other hand, the digital service provider does not benefit if more audience is generated than expected.

Within the advertisement model, there is a strong relation between audience and revenue. The availability of traffic tracking tools on websites allows a direct measurement of advertisement effects. These measurements have a large impact on the revenue generating capabilities of a digital content provider. Not only do content providers have to generate the audience to the site, they also have to select the advertisement that fits the visitors best. Selecting an advertisement with a high click rate or lead generation directly increases the revenues generated by the site. The CEO of Mininova.org indicated that some advertisements generate 3.5 up to 5 times more clicks, therefore raising the CPM rate with the same figures. Because of the many variables, all with a multiplier effect, there is a huge difference in the economic value generating capability of the advertising model. The difference in interested persons needed between the minimum and the maximum estimates is 12,923,077 persons, which is 140,790%. This is due to the difference in earnings of 32,400% between the minimum and maximum estimates. When comparing sponsoring with advertising, it is clear that advertisement has the potential to generate more economic value. There is however more uncertainty with advertisement then with sponsoring when it comes to whether a digital content provider will break-even.

6.5.3 Model comparison

Based on the previous comparisons, we can compare the revenue models among each other to indicate which revenue model can generate the most economic value for a sport union exploiting digital content. The sensitivity analysis shows that there is a large range of possible outcomes. Eventually there are two variables that determine the economic value of a revenue model. These two variables are:

- Interested persons in a sport
- Earnings per interested person

The amount of interested persons in a sport is a fixed number. For the sponsor revenue model, there is no direct relation between interested persons and earnings, so this revenue model cannot be compared with the other revenue models.

Revenue models where consumers don't have to pay stimulate the consumption of goods. Our research indicates that direct revenue models temper the consumption intention of digital sport content 16.3 times. This is the difference between persons interested in free content and persons interested in paid content. This difference results in an equation where the earnings per interested person for indirect revenue models can be 16.3 times lower. The earnings found for the advertisement model are for the normal estimates 39 times lower than the lowest direct revenue model and for the low estimate 187.5 times lower. With the high estimates the earnings per interested person are 10 times lower. However, this indicates that the advertisement model generates more revenue overall, because of the higher consumption rate of free content. Figures 6.1, 6.2 and 6.3 depict the profit of the five revenue models for the three estimates. Figure 6.4 summarizes the interested persons necessary to break-even for the three revenue models. Appendix E shows the corresponding equations.

6.5.4 Revenue model combination

As the main question of this thesis suggests, there is also the possibility of revenue model combination. The sensitivity analysis suggests that, for a given situation, there always is a best revenue model. If sponsoring is taken out of the equation (as it has no link to any variable), there is no bending point for the revenue models. Therefore it seems illogical to combine the best performing revenue model with a less performing model. Combinations of direct and indirect revenue models are only made if a direct revenue model is the best

solution. This allows the exploiter to also generate revenues of the persons who aren't willing to pay for content.

An ultimate option is one where every revenue model is allowed, so sportspersons can select the revenue model of their choice. This leads to an equation where 46% of the persons interested in a sport would choose advertising, 1.65% would select self-determined pricing, 0.87% selects pay per view and 0.45% chooses subscription. This option has been compared with the revenue models in the sensitivity analysis, as displayed in the figures 6.1, 6.2 and 6.3. This combined revenue model is only a better option with the high estimates, because the direct revenue models generate higher revenues per viewer, but not per interested person.

However this combining of all revenue models is only a mind exercise, as there is highly unlikely that persons are willing to pay a maximum price for content that is also freely available. The annoyance costs of advertising are, considering the Dutch attitude toward sport content advertisement (Van Dijk and Stout, 2005), very unlikely to be that high.

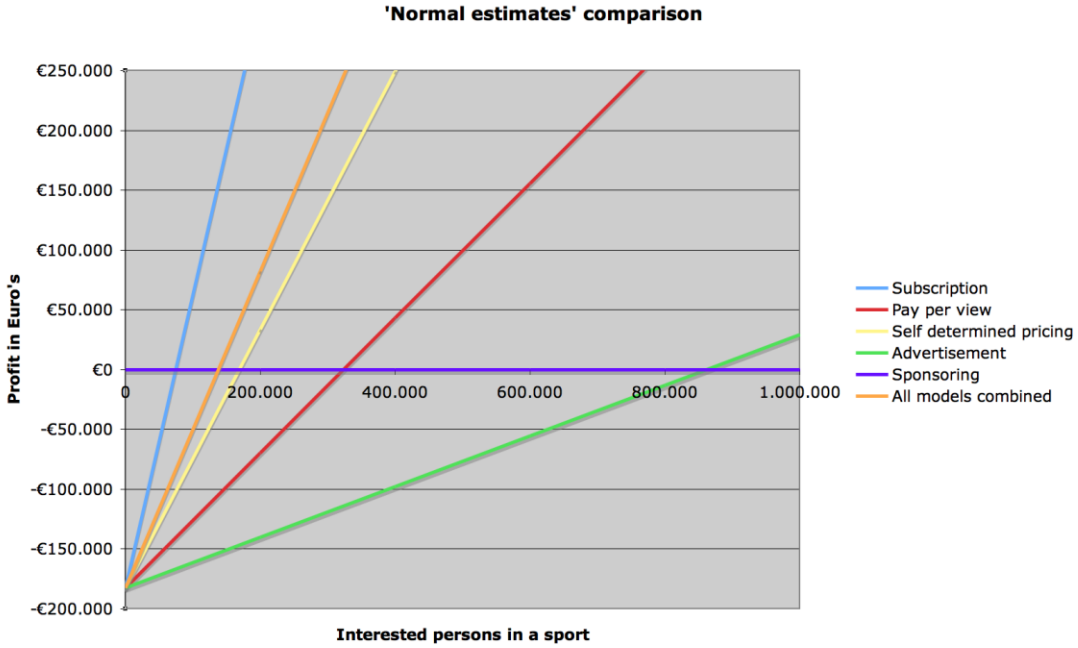


Figure 6.1: Profit for the five revenue models based on normal estimates

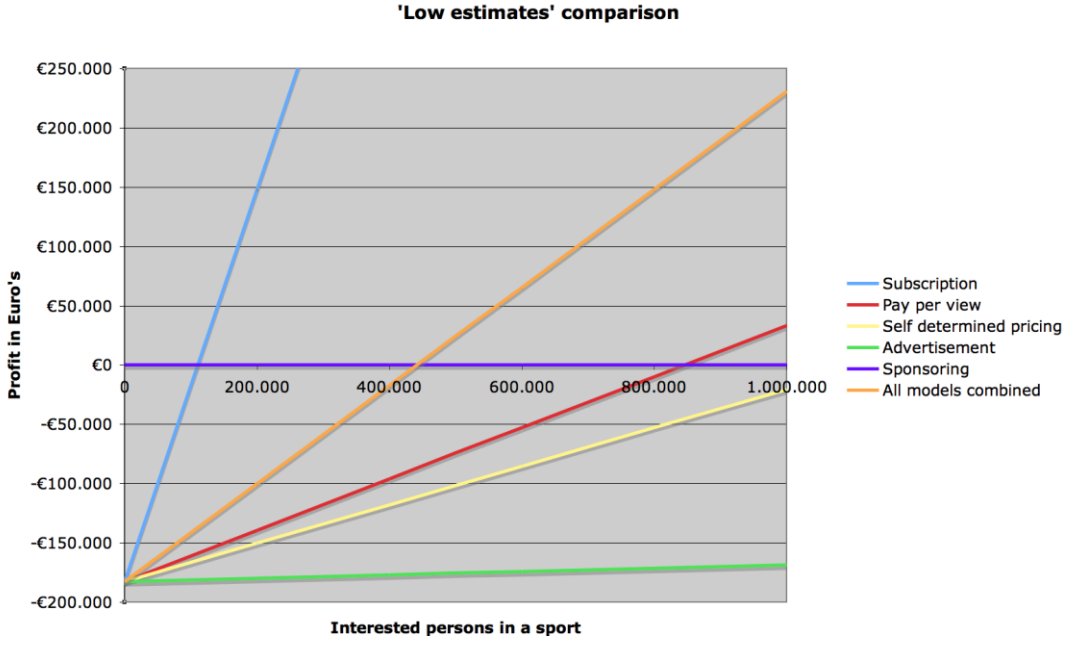


Figure 6.2: Profit for the five revenue models based on low estimates

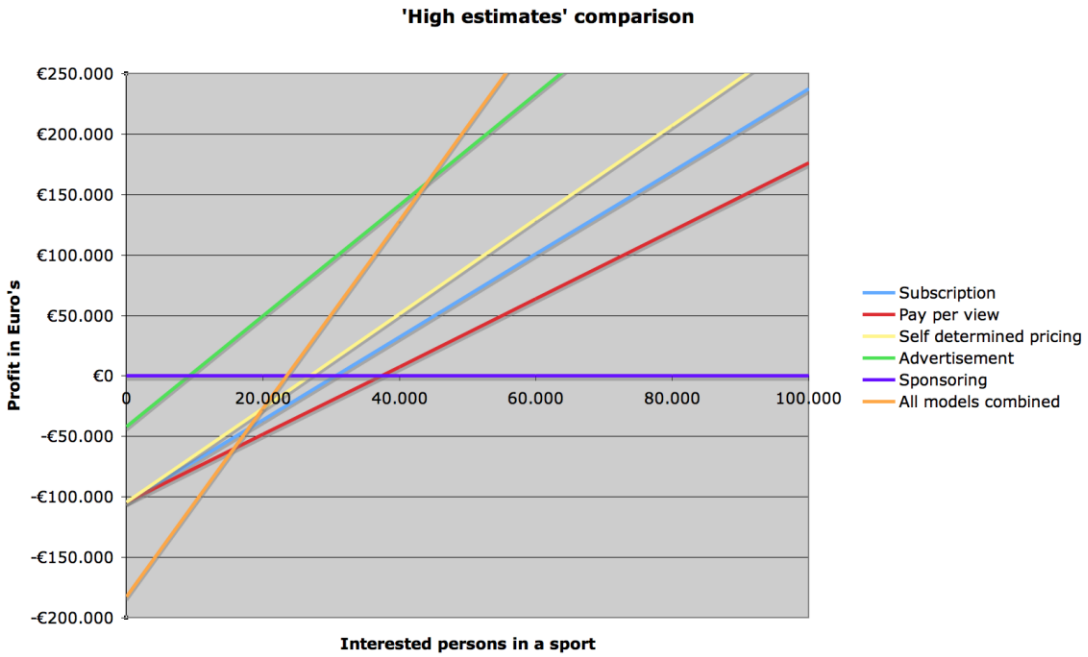
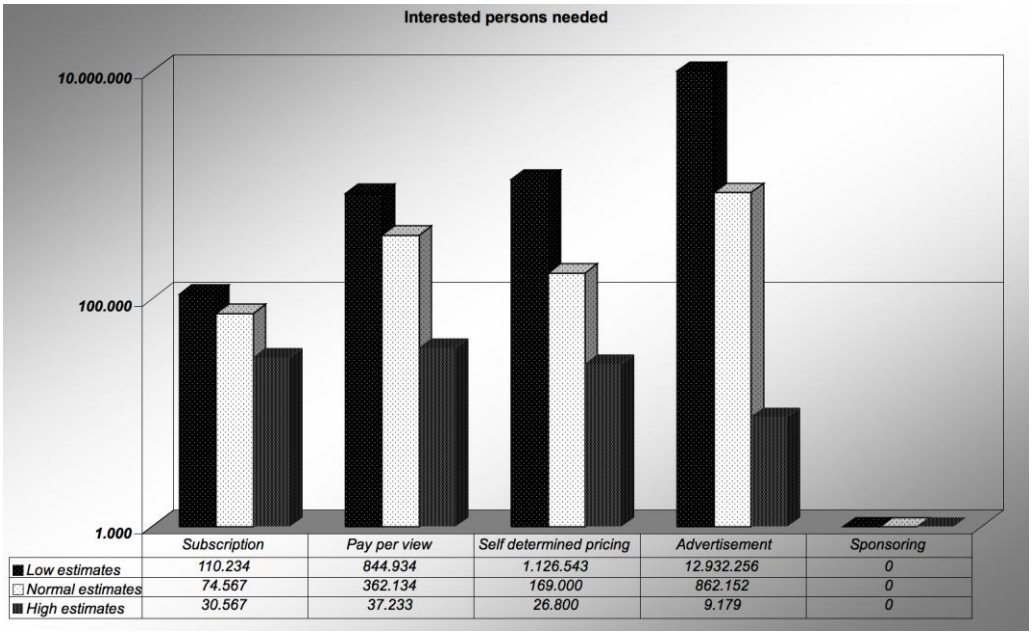


Figure 6.3: Profit for the five revenue models based on high estimates



	Subscription	Pay per view	Self determined pricing	Advertisement	Sponsoring
Low estimates	110.234	844.934	1.126.543	12.932.256	0
Normal estimates	74.567	362.134	169.000	862.152	0
High estimates	30.567	37.233	26.800	9.179	0

Figure 6.4: Interested persons necessary to break-even

Based on the persons needed to break-even, the sponsoring model is the preferred model, as the sport unions directly break-even. They can shift the risks of creating sufficient economic value to the sponsoring party. It is also the easiest solution, as a digital content service only needs to enable that the content can be consumed. A direct revenue model is the most likely choice if there is no sponsor available. All variables influencing advertisement need their maximum estimated values before the advertisement model generates more revenues then a direct revenue model. The low estimates show that the advertisement model revenues fluctuate extremely. The subscription model results in the most stable revenue model. Even with the low estimates it generates sufficient revenue to allow the 13 largest sport unions to break even when the members are seen as all the interested persons in that sport.

6.6 Conclusion

This goal of this chapter was to validate the possible revenue models for a digital content provider, thereby answering research question 4 and 5. Section 6.1 provided the answer to research question 4:

Which variables determine the economic viability of a revenue model?

The economic viability is the difference between costs and revenues. The costs of a digital content provider are subdivided into three categories, namely:

- Infrastructure costs
- Production costs
- Payment costs

The production costs make up 85% of the fixed costs, thereby greatly influencing the viability of the business model of a digital content provider, as all revenue models have to overcome these fixed costs. These high production costs are known as first-copy costs (Shapiro and Varian, 1998). Section 6.2 and 6.4 reveal the influence of payments costs on the viability of direct revenue models. Usual payment methods on the Internet create a threshold that eliminates the viability of micro payments and reduces the viability of per unit fees by diminishing the revenues with 12% to 40% (table 6.4).

The specific revenue variables determining the economic viability differ per revenue model. However, the variables also can be subdivided into three categories (table 6.5):

- Interest in content / Willingness to pay
- Price / CPM rate
- Usage

The interest in content and willingness to pay indicate the number of persons showing interest in the content. Market research indicates that these two variables are constant among the different sport unions. The interest for 'free' sport content is 16 times higher than for paid sport content.
Actual usage does not effect subscriptions, as there is no relation between actual usage and revenue due to the non-existing marginal costs. The revenue models where usage is a part of the equation show that usage has a significant influence on the viability of a revenue model (sections 6.2 and 6.3 and table 6.4). Sponsoring is an odd revenue model, as the revenue is determined beforehand and therefore lacks direct relation with any of the revenue variables mentioned in this chapter.

Revenue model	**Interest in content / Willingness to pay**	**Price / CPM rate**	**Usage**
Subscription	X	X	
Per unit fee	X	X	X
Self determined pricing	X	X	X
Advertising	X	X	X
Sponsoring			

Table 6.5: Relevant revenue variables per revenue model

The comparison of the revenue models takes place in section 6.5 and answers research question 5:

How can the different (categories of) revenue models be compared?

The comparison between the revenue models takes place based on the number of interested persons needed to break-even. The earnings per interested person determine when a revenue model reaches the break-even point. Solving the break-even equations for the revenue models indicates when a revenue model becomes economic viable.

7 Discussion and conclusion

The goal of this final chapter is to reflect on the research and answer the main question of this thesis. Section 7.1 concludes on which (combination of) revenue model(s) creates the most economic value for a sport union exploiting digital video content through a website. Section 7.2 discusses the research limitations. Section 7.3 describes the practical recommendations. Section 7.4 ends with suggestions for future research.

7.1 Key findings

Sport unions start to explore the opportunities that the Internet as a new medium is offering. The goal of this thesis was to examine which options sport unions have when exploiting their content, more specific:

> *Which (combination of) revenue model(s) captures the most economic value for a sport union exploiting digital video content through a website?*

To answer this question, a method was developed to validate different revenue models, based on their capability to break-even. The first step was to identify all relevant actors involved in the business model, their value activities and value exchanges. Based on a global actor view, a visualization was created to examine the relations influencing the revenue model. The conceptual framework revealed the revenue model determinants influencing the viability of a revenue model. Based on the overview and the theory, an economic validation was created and executed. A sensitivity analysis was applied to examine the effect of high and low estimates.

The economic validation was applied to five types of business models, subdivided into two categories, namely direct and indirect revenue models. Based on the capability to break-even, we identified the sponsoring revenue model as a first option. The fact that revenue is paid upfront makes the content exploitation viable independent of interest in the content. However, it remains to be seen whether a sponsor can be found. The second restriction is that, due to the fact that revenue is paid front, there is no link between use and revenue. The sponsor fee is fixed, so additional revenues are also out of the equation.

The examination of the other revenue models, where there is a direct link between usage and revenue, shows that the earnings per buyer / visitor determine the viability of a revenue model. The indirect advertisement model has the advantage of reaching the full potential of interested persons. Therefore they need roughly 16 times less earnings per person. Our research shows that despite this advantage, an advertisement model can only exceed the earnings of a direct revenue model if all potential consumers consume the maximum amount of content. On the other hand, the advertisement model has the possibility to capture the most economic value of all revenue models in this best-case scenario.

Within this thesis, a separation between large and small sport unions has been made. Our research indicates that the size of a sport union has consequences for the revenue model selection. The break-even validation shows that for sports with little interest sponsoring is the only solution to exploit content in a viable way.
The subscription revenue model is currently the best revenue model for large sport unions to capture economic value. Within our current estimates, a subscription model starts making profit with approximately 74,500 interested sportspersons. A combination of this direct revenue model with an indirect revenue model might lower the number of interested persons needed.

Concluding, a combination of the direct subscription model with an indirect revenue model captures the most economic value for a sport union exploiting digital video content through a website.

7.2 Limitations

This research was initiated by a personal interest in revenue generation on the Internet. The basic principle for a digital content provider is that the revenues have to exceed the cost to create a viable business. One of the new challenges is to obtain these revenues. This thesis examines which revenue model a digital content provider should use to obtain these revenues. Within the business model framework, the focus is therefore on the vale capture component (Richardson, 2008). The value proposition and the value creation and delivery system components are therefore taken for granted. The discussion first elaborates on the influence of the two components on the value capturing. A second discussion point is the interpretation of the market research and the impact of assumptions on the validation. The final discussion point is about the implications of dividing the revenue models into two categories.

7.2.1 Market research and validation limitations

Due to the limitations on the length of the questionnaire, nuances about elements like offering and payment are excluded. For example, the availability of only a certain revenue model might reduce the number of persons who want to pay for content. Choosing a form of advertisement might also reduce the number of viewers. All these conditions aren't a part of our validation. To create a workable validation, assumptions have to be made. The variables regarding intention to watch and intention to pay are therefore maximum values. This has to be kept in mind when interpreting the validation results. The choice made within the execution of a revenue model might reduce its capability to capture economic value.

Another rather large limitation is the difficulty of determining the advertisement revenues around video content. We've used the current idea of page views linked to advertisement spots in combination with a CPM. Our estimates are based on text or image advertisement. Most advertisement networks are using this way of selling advertisement. Video advertisement is a new type of advertisement. Possible revenues remain very uncertain. Indications of this uncertainty are the expectations of Dutch video advertisement practitioners expressed at the Video advertisement summit organized by Waddameeting and the IAB Internet Taskforce. A business developer from the STER is currently selling video advertisement at a gross CPM rate of € 125,-. On the other hand, the CEO of Zoomin estimates the total video advertisement market to be 4 or 5 million euros and expects no real growth within the next year. As long as companies are not shifting large budgets from offline to online advertisement, the advertisement pool remains limited. These two statements show the amount of uncertainty regarding advertisement.

7.2.2 Categorization implications

Before providing the conclusion to this thesis about which (combination of) revenue model(s) captures the most economic value, the final research question remains to be answered, namely:

What are the implications of choosing for a category of revenue models?

The division into two categories, based on the process model in figure 2.4 implicates that both models are mutually exclusive. The payment to the digital content provider is either direct or indirect. However, combinations of direct and indirect models are possible. Product differentiation or consumer segmentation are well known reasons for using multiple revenue models. These types of revenue model combinations fall not within the scope of this thesis. But there are also other combinations possible, which do fall within the ceteris paribus clause.
Sponsoring or advertisement can be used to reduce subscription or per unit fees. There is always a trade of when choosing a (combination of) revenue model(s). The first and important implication of choosing a direct revenue model is the diminishing interest in the content (sections 5.2.2 and 5.3.3).

The second implication is that of the relation between quality and payment. Asking a direct remuneration implies a certain quality level (Zeithaml, 1998) (Rao & Sieben, 1992). This leads to higher production costs, as professional content is required to achieve an acceptable quality level. Because of this cost structure, adding an indirect revenue model to a direct revenue model has less influence on the revenue process than visa versa.

7.3 Practical implications

As explained in the conclusion, the division between large and small sport unions is a basis to consider the applicable revenue model. The production costs are the bottleneck in exploiting digital video content. As there is no viable revenue model with a direct relation between usage and earnings for small sport unions, they have two options:

- Use a revenue model with no direct relation with usage, which is sponsoring.
- Reduce the production costs to lower the break-even point.

Asking for a direct remuneration reduces the amount of eyeballs reached. This conflicts with the objective of promoting the sport to the outside world. Large sport unions have to consider the consequences of choosing a type of revenue model. Direct revenue models are likely to capture more revenues than indirect revenue models, but reach fewer eyeballs. The consideration for the short run when choosing a revenue model is that between a low financial risk and or a low threshold to watch sport content.

A final thought has to be on the continuity of the digital platform. The risk is of an indirect model is the disconnection between the demand for content and the revenues. Direct revenue models generate revenue, as long people are interested in the content. Indirect revenue models depend strongly on periodic contracts. If a sponsor quits or no advertisers can be found, there is a direct danger of termination. A recent example of this is the bankruptcy of Omniworld Volleybal (Appendix G). Indirect revenue models therefore bear a higher risk regarding continuity.

7.4 Research implications

This final section discusses the techniques and theories used in this thesis and ends with a final thought on the possible directions for further research. We examine the combination of modeling techniques with the concept of the value network, the use the business model and revenue model within this thesis, the application of the theory of planned behavior and recent Internet business related theories like the long tail and the free business model.

The combination of using a visual modeling language like UML with the theory about value networks and business webs creates a solid basis to examine the impact of revenue models on the value configuration. An example in this thesis of this combination is the use of the global actor view of the e3value methodology with a concept like the value network. The separation of different roles in the value network is helpful to identify the relevant actors. The description of the applicable relations between actors seems questionable and unnecessary. The relations vary between scenarios. All relations should be analyzed for a possible exchange of content, revenue and/or use features. This thesis suggest the use of model independent and model dependent actors to clarify the comparison of multiple models. It clarifies which relations can be influenced through choices and which are fixed.

The use of notions like business model and revenue model suggests a common ground for debates. However, as described in chapter two and three, there are many interpretations of these definitions. We observed two types of approaches to create a comprehensive understanding. The first school tries to create an overview of possible business models and revenue models by creating taxonomies (Rappa, Bambury, Mahadevan, Wang and Chan) or typologies (Malone, et al., Hoffman and Novak). The other school sees the business model as a framework to determine internal and external 'fit' (Morris, Schindehutte and Allen, 2003) and focuses on the value proposition (Richardson). We believe that the latter approach is more useful as "the … framework allows the user to design, describe, categorize, critique, and analyze a business model for any type of company" (Morris et al., 2005). As every business has its own unique 'umwelt', a typology or taxonomy can never be all embracing. Assessing a business with a systematic approach offers a better

understanding of the business and sharpens the approach as it is tested in different situations. "The business model can serve as a focusing device for entrepreneurs and employees" (Morris et al., 2007). We hope that this thesis contributed an example of a systematic approach for assessing model viability, as requested by Morris et al.

The theory of planned behavior has been used to predict the behavior regarding watching sport content and paying for that content. Positive aspect of this theory is that it eliminates the 'neutral' or 'don't know' factor by combining answers on the three aspects. In this thesis it became clear that all respondents with neutral answers on willingness to pay turned out to not have the intention to display this behavior. Without the TPB, this difference wouldn't have been so clear. The TPB also provided information on which beliefs have the greatest influence on intentions. This can help practitioners and researchers to understand which beliefs have to be influenced to create a stronger basis for desired intention. For research with target groups regarding sport content, the TPB can be used to select and examine specific cases. The major disadvantage of the TPB is the need to address the topics from many perspectives, which requires a lengthy questionnaire. This is more suitable for small scale qualitative research instead of large, quantitative research as conducted in this thesis. Response fatigue increases with the number of questions asked, as indicated by our drop out rates. Overall, the TPB proofed to be a useful instrument in this thesis.

Current Internet research is focusing on the free aspects of Internet services. The observation that free services are far more popular seduces people to see indirect revenue models as the models of the future. In business terms, popular doesn't necessarily equals successful. An application sold only a hundred times for 5 euros can be more of a success than a free application downloaded 100,000 times, as free itself doesn't result in any monetary returns. There are many known cases of popular web services, which are unable to cash in on their popularity. A well-known example is YouTube (Appendix G)

Another argument is that of zero marginal costs for digital content. The most used example is the music industry, which should shift to another business model, because reproduction costs are zero and therefore people aren't willing to pay for it. Musicians should play for fun or as a creative expression, as music is not a moneymaking business (Anderson, 2008). As our research indicated, there is a willingness to pay for digital content. It's small, but it's there. Furthermore is the argument of zero marginal costs not valid, as producers have to secure all costs. Our research indicates that first-copy costs are the most important factor influencing the viability of a business model, as they are by far the largest cost. Production and infrastructure costs have to be recovered for a business model to be economically viable. If there's no actor who wants to pay for professional digital content, its not created.

Preceding this theory of the 'free' business model is the long tail theory (Anderson). This popular new theory suggests that abundance of virtual shelf space creates a rich offering that is, independent of time and space, available for everyone. This offering will create an ever-growing demand. The long tail theory was the main motive to start this thesis. The theory turned out to be faulty in many ways. First of all, recent research by Will Page, chief economist of the MCPS-PRS Alliance (not-for-profit royalty collection agency) on the sales of digital music shows other figures than Anderson's research, with 85% of the albums being never sold. This is in large discrepancy with the 98%-rule, which states that off all digital items 98% is sold at least ones. Also scholars have come up with other data (Elberse, 2008). This data supports the Pareto 80/20 rule that Andersons declared obsolete. It also disputes the Law of Zipf, which is also known as 'the long tail curve'. Secondly, Elberse also refers to the McPhee's theory of exposure, which opposes the long tail thinking about users and their preferences. The difference between heavy and light users and their behavior is applicable to sport content, as it can provides an insight in how consumers of content react to offerings. Finally, our own research found indications which are in favor of the 'old' 80/20 rule and do not support the long tail idea. The interest for local sport content or talk shows about specific sports is significant lower than for the hits. The demand is not there. A major flaw in the theory is the focus on diminishing marginal costs. The influence of distribution costs is overestimated when it comes to creating a viable business model. First-copy costs are the bottleneck of exploiting the tail. According to our research, the vision of selling less of more remains a fata morgana in regard to sport content.

A final thought is on possible directions for further research. Based on the research outcomes and discussion, there are three directions for further research: online advertisement, the interest in a sport and the correlation between cost structure and revenue model. More research on these three subjects can create a better understanding on the exploitation of digital (sport) content.

The advertising model seems indissoluble with the Internet. However the effect of online advertising is uncertain. More research is necessary on the parameters that influence the effectiveness of advertisement. Interest in a sport match doesn't equal a direct intention to buy sport articles. Looking for a Nike Zoom Trainer Gerevick on Google does. If advertisers are paying based on a conversion rate, it is very important to understand for a website which type of advertisement is feasible. The type of website might influence the feasibility of an advertisement model. Sport unions need this information to attract the right advertisers.

Additional research is needed to assess the interest in a sport. We've used the members of sport unions as a representation of all interested persons in a sport. But there might be differences between this sample population and the population. For example, if there is a difference in willingness to pay between the members of a sport union and other interested persons in a sport. This information might shed a different light on the model equations.

Finally, more research is needed regarding the relation between cost structure and revenue model. Is there a direct relation between high first-copy costs and a relevant revenue model? Our research implies that high first-copy costs of content can be earned back, only by asking a direct remuneration. Instead of enabling the consumption of content within a long tail of sport content, the idea of niche marketing seems to fit the situation better. The lack of competitors and specific needs justify high prices. Research among different types of digital content and within different digital markets can provide better insights in this relation.

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9 Appendix A: Advertisement possibilities

Type	Description
Banner / Leaderboard / Skyscraper	Basic advertising format with graphics in various sizes and different positions. (Banner = horizontal, Skyscraper = vertical, Leaderboard = horizontal and at the bottom)
Animated banner	Enhanced banner with movie elements
Advertorial	Type of commercial that looks like an article from the website, but written by the advertiser
Pop-up	Screen that interrupts visitors with an advertisement message
Interstitial adverts	An intermediate page that will be shown before the page is loaded
Keywords	Hyperlinked words that leads visitors away from the site to the advertisers site. Well-known example is Google Adwords. Other possibility is hyper linking words in an article.
In Video	Online commercial displayed on a webpage
Pre-rolls	Commercials that comes before a video or a music stream
Opt in e-mail	Sending e-mails to visitors that explicitly have agreed to receive e-mails with offers.
RSS-advertising	Adding advertisement messages in the RSS feeds

Table A1: Advertisement possibilities

10 Appendix B: Constructing a web-survey

Principle 1	Introduce the web questionnaire with a welcome screen that is motivational, emphasizes the ease of responding, and instructs respondents on the action needed for proceeding to the next page
Principle 2	Begin the web questionnaire with a question that is fully visible on the first screen of the questionnaire, and will be easily comprehended and answered by all respondents
Principle 3	Present each question in a conventional format similar to that normally used on paper questionnaires
Principle 4	Limit line length to decrease the likelihood of a long line of prose being allowed to extend across the screen of the respondent's browser
Principle 5	Provide specific instruction on how to take each necessary computer action for responding to the questionnaire.
Principle 6	Provide computer operation instructions as part of each question where the action is to be taken, not in a separate prior to the beginning of the questionnaire.
Principle 7	Do not require respondents to provide an answer to each question before being allowed to answer any subsequent ones
Principle 8	Construct web questionnaires so that they scroll from question to question unless order effects are a major concert, large number of questions must be skipped, and/or a mixed-mode survey is being done for which telephone interview and web results will be combined
Principle 9	When the number of answer choices exceeds the number that can be displayed on one screen, consider double-banking with appropriate navigational instructions being added
Principle 10	Use graphical symbols or words that convey a sense of where the respondent is in the completion progress, but avoid ones that require advanced programming
Principle 11	Be cautious about using question structures that have known measurement problems in paper questionnaires, e.g. check-all-that-apply and open-ended questions.

Table B1: Principles of constructing a web-suvey (Dillman, 1999)

11 Appendix C: Invitation e-mail

Indien deze email niet goed wordt weergegeven klik dan hier voor een html-versie.

Geef je mening over: sport uitzendingen via internet

Beste sporter,

Krijgt jouw sport de aandacht die het verdient?
Zendtijd voor sport is beperkt en kostbaar, daardoor kunnen sportprogramma's op televisie niet aan alle sporten evenveel aandacht besteden. Uitzenden via internet is hiervoor een geschikte en moderne oplossing.

Maar heb jij als sportliefhebber wel interesse in meer beelden van jouw sport of andere sporten? En ben je bereid om voor deze beelden te betalen? Dit zijn onderwerpen die we graag inzichtelijk willen krijgen. Om de interesses voor sportbeelden via het internet te toetsen is een enquête opgesteld voor Nationale Sportpashouders.

Graag vragen wij je om medewerking te verlenen aan dit onderzoek. Het invullen van de vragenlijst duurt ongeveer vijf minuten en je antwoorden worden anoniem verwerkt.

Klik hier voor de vragenlijst.

Alvast bedankt voor je medewerking.

Met sportieve groet,

Nationale Sportpas

www.nationalesportpas.nl | Mijn tegoed | Mijn gegevens | Afmelden | Privacy | Disclaimer

Figure C: Questionnaire invitation e-mail

Appendix D: Questionnaire results

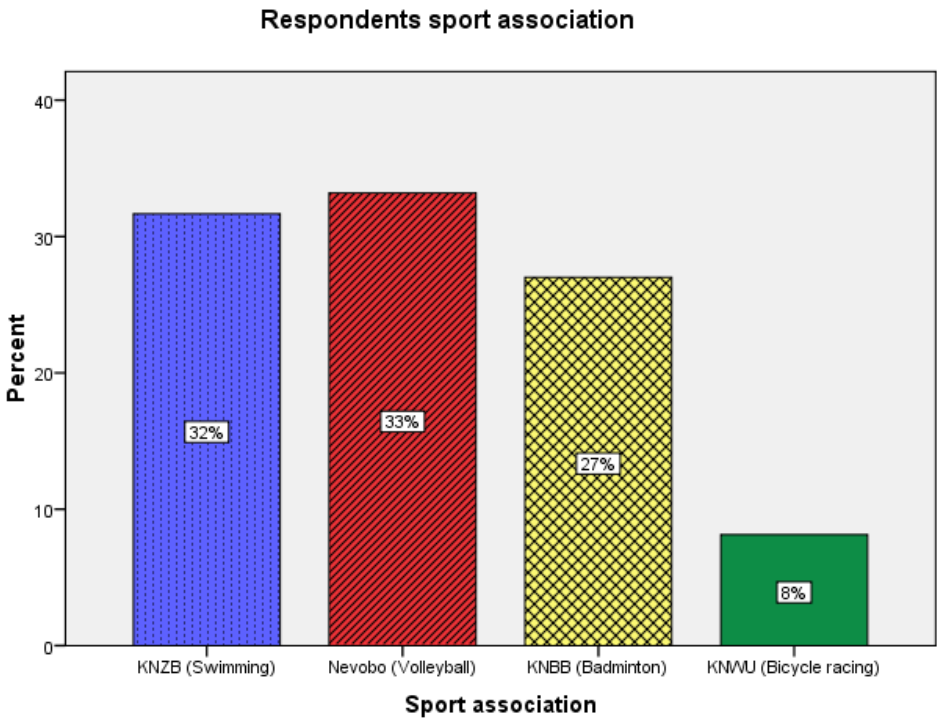

Figure D1: Division respondents among the sport unions

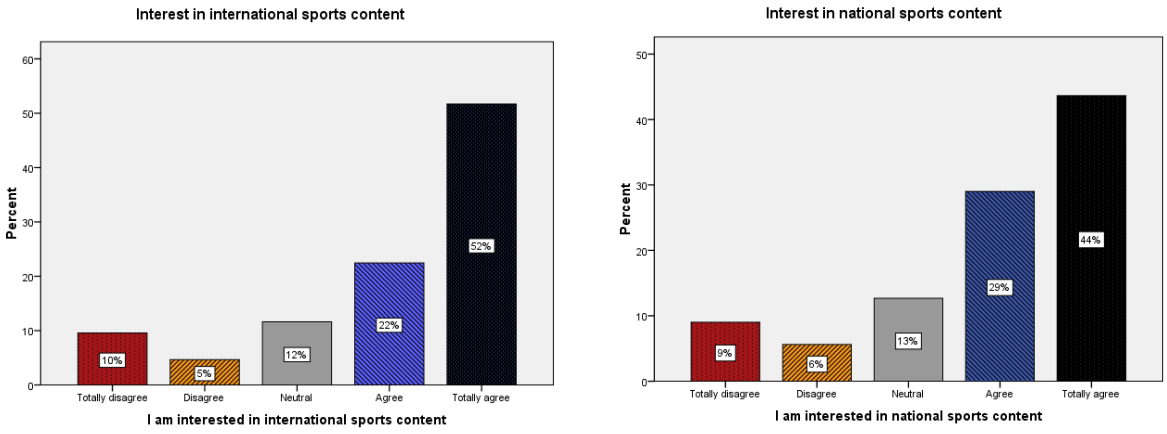

Figure D2: Comparison of interest in national and international sports content

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching video-images of my sport through a website is ...	16,22	15,986	,672	,758
Watching video-images through a website is a ... experience	16,25	15,585	,725	,744
My friends consider it normal to watch sport images through a website	16,83	17,343	,617	,772
My friends already have experience with watching sport images through a website	16,87	18,007	,512	,794
I find it easy to watch sport images through a website	16,59	15,534	,678	,756
I determine whether I watch sport images through a website	15,38	21,249	,221	,843

Figure D3: Reliability analysis of the TPB constructs measuring intention

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
ATB watching	Large sport unions	714	2,27	,856	,032	2,20	2,33	1	3
	Small sport unions	387	2,29	,866	,044	2,20	2,37	1	3
	Total	1101	2,27	,859	,026	2,22	2,33	1	3
SN watching	Large sport unions	707	1,83	,793	,030	1,77	1,89	1	3
	Small sport unions	383	1,90	,790	,040	1,82	1,98	1	3
	Total	1090	1,86	,792	,024	1,81	1,90	1	3
PBC watching	Large sport unions	720	2,00	,858	,032	1,93	2,06	1	3
	Small sport unions	387	2,05	,871	,044	1,96	2,14	1	3
	Total	1107	2,02	,862	,026	1,96	2,07	1	3

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
ATB watching	,329	1	1099	,566
SN watching	1,098	1	1088	,295
PBC watching	1,549	1	1105	,214

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
ATB watching	Between Groups	,094	1	,094	,127	,722
	Within Groups	811,069	1099	,738		
	Total	811,163	1100			
SN watching	Between Groups	1,235	1	1,235	1,971	,161
	Within Groups	681,862	1088	,627		
	Total	683,097	1089			
PBC watching	Between Groups	,785	1	,785	1,055	,305
	Within Groups	821,954	1105	,744		
	Total	822,739	1106			

Figure D4: Analysis of variance among TPB constructs regarding intention to watch

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
PBC paying	Large sport unions	713	1,21	,510	,019	1,17	1,25	1	3
	Small sport unions	389	1,22	,495	,025	1,17	1,27	1	3
	Total	1102	1,22	,504	,015	1,19	1,24	1	3
SN paying	Large sport unions	706	1,30	,544	,020	1,26	1,34	1	3
	Small sport unions	384	1,22	,467	,024	1,17	1,27	1	3
	Total	1090	1,27	,519	,016	1,24	1,30	1	3
ATB paying	Large sport unions	718	1,12	,401	,015	1,09	1,14	1	3
	Small sport unions	392	1,11	,368	,019	1,08	1,15	1	3
	Total	1110	1,11	,390	,012	1,09	1,14	1	3

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
PBC paying	,093	1	1100	,761
SN paying	22,821	1	1088	,000
ATB paying	,147	1	1108	,701

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
PBC paying	Between Groups	,022	1	,022	,085	,770
	Within Groups	280,008	1100	,255		
	Total	280,030	1101			
SN paying	Between Groups	1,653	1	1,653	6,161	,013
	Within Groups	291,965	1088	,268		
	Total	293,618	1089			
ATB paying	Between Groups	,003	1	,003	,019	,891
	Within Groups	168,467	1108	,152		
	Total	168,469	1109			

Figure D5: Analysis of variance among TPB constructs regarding intention to pay

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	ATB watching	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
2	SN watching	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
3	PBC watching	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
a Dependent Variable: Intention to watch			

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,752(a)	,565	,565	,622	,565	1406,900	1	1082	,000
2	,848(b)	,718	,718	,500	,153	588,086	1	1081	,000
3	,878(c)	,771	,770	,452	,052	245,467	1	1080	,000
a Predictors: (Constant), ATB watching									
b Predictors: (Constant), ATB watching, SN watching									
c Predictors: (Constant), ATB watching, SN watching, PBC watching									

Figure D6: Stepwise multiple regression intention to watch (part 1)

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,172	,054		3,177	,002
	ATB watching	,832	,022	,752	37,509	,000
2	(Constant)	-,378	,049		-7,673	,000
	ATB watching	,670	,019	,605	35,129	,000
	SN watching	,495	,020	,418	24,250	,000
3	(Constant)	-,510	,045		-11,264	,000
	ATB watching	,512	,020	,463	25,689	,000
	SN watching	,420	,019	,354	21,999	,000
	PBC watching	,314	,020	,288	15,667	,000
a Dependent Variable: Intention to watch						

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	SN watching	,418(a)	24,250	,000	,594	,877
	PBC watching	,390(a)	18,264	,000	,486	,672
2	PBC watching	,288(b)	15,667	,000	,430	,629
a Predictors in the Model: (Constant), ATB watching						
b Predictors in the Model: (Constant), ATB watching, SN watching						
c Dependent Variable: Intention to watch						

Figure D7: Stepwise multiple regression intention to watch (part 2)

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	ATB paying	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
2	SN paying	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
3	PBC paying	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
a Dependent Variable: Intention to pay			

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,622(a)	,387	,386	,283	,387	687,113	1	1090	,000
2	,697(b)	,486	,485	,259	,099	209,601	1	1089	,000
3	,732(c)	,535	,534	,246	,050	116,665	1	1088	,000
a Predictors: (Constant), ATB paying									
b Predictors: (Constant), ATB paying, SN paying									
c Predictors: (Constant), ATB paying, SN paying, PBC paying									

Figure D8: Stepwise multiple regression intention to pay (part 1)

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54,930	1	54,930	687,113	,000(a)
	Residual	87,138	1090	,080		
	Total	142,069	1091			
2	Regression	68,995	2	34,497	514,106	,000(b)
	Residual	73,074	1089	,067		
	Total	142,069	1091			
3	Regression	76,072	3	25,357	418,028	,000(c)
	Residual	65,997	1088	,061		
	Total	142,069	1091			

a Predictors: (Constant), ATB paying

b Predictors: (Constant), ATB paying, SN paying

c Predictors: (Constant), ATB paying, SN paying, PBC paying

d Dependent Variable: Intention to pay

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,449	,026		17,590	,000
	ATB paying	,563	,021	,622	26,213	,000
2	(Constant)	,241	,027		8,780	,000
	ATB paying	,493	,020	,545	24,332	,000
	SN paying	,226	,016	,324	14,478	,000
3	(Constant)	,139	,028		5,001	,000
	ATB paying	,451	,020	,498	22,967	,000
	SN paying	,177	,015	,255	11,456	,000
	PBC paying	,173	,016	,241	10,801	,000

a Dependent Variable: Intention to pay

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	SN paying	,324(a)	14,478	,000	,402	,943
	PBC paying	,315(a)	13,931	,000	,389	,933
2	PBC paying	,241(b)	10,801	,000	,311	,855

a Predictors in the Model: (Constant), ATB paying

b Predictors in the Model: (Constant), ATB paying, SN paying

c Dependent Variable: Intention to pay

Figure D9: Stepwise multiple regression intention to pay (part 2)

13 Appendix E: Additional data

Website	Banners
http://www.sport.nl	2
http://www.volleybal.nl	1
http://www.heracles.nl	1
http://www.ajax.tv	2
http://www.fctwente.nl	3
http://www.tricolores.tv	3
http://www.knzb.nl	1
http://www.knwu.nl	2
http://www.badmintonforum.nl	1
http://www.wielerland.nl	2
http://www.formule1.nl	3
http://www.curling.nl	1

Table E1: Advertisement spots

Type of transaction	Costs
Authorization	€ 0,12
Transfer	€ 0,27
Giro credit slip	€ 1,00
iDeal	€ 0,56
Credit card	3 – 3,5%

Table E2: Transaction costs financial institutions

Company	Tariffs
Paypal	1,5% – 3,4% + € 0,35
Multipay	€ 0,15 – € 0,50
Ogone	€ 0,20

Table E3: Transaction costs payment service providers

Revenue model	Equation
Subscription	(-182500)+81,6*(I*3%)
Per unit fee	(-182500)+18,8*(I*3%)
Self determined pricing	(-182500)+36*(I*3%)
Advertisement	(-182500)+0,432*(I*49%)
Sponsoring	0

Table E4: Break-even equations figure 6.1

Revenue model	Equation
Subscription	(-182500)+55,2*(I*3%)
Per unit fee	(-182500)+7,2*(I*3%)
Self determined pricing	(-182500)+5,4*(I*3%)
Advertisement	(-182500)+0,0288*(I*49%)
Sponsoring	0

Table E5: Break-even equations figure 6.2

Revenue model	Equation
Subscription	(-104500)+114*(I*3%)
Per unit fee	(-104500)+93,6*(I*3%)
Self determined pricing	(-104500)+130*(I*3%)
Advertisement	(-42100)+9,36*(I*49%)
Sponsoring	0

Table E6: Break-even equations figure 6.3

14 Appendix F: Questionnaire

Questionnaire

1. Welke sport beoefent u?
2. Hoeveel uur per week besteedt u gemiddeld aan het bekijken van sportbeelden?
3. Op welke manier(en) kijkt u op dit moment naar sportbeelden?
4. Ik heb interesse in wedstrijdbeelden van mijn sport op internationaal niveau.
5. Ik heb interesse in wedstrijdbeelden van mijn sport op nationaal niveau.
6. Ik heb interesse in wedstrijdbeelden van mijn sport op lokaal niveau.
7. Welk type sportbeelden van uw sport hebben uw interesse?
8. Als videobeelden van mijn sport via een website beschikbaar worden gesteld zal ik deze bekijken.
9. Naar videobeelden van mijn sport ga ik ... kijken.
10. Het bekijken van videobeelden van mijn sport via een website is voor mij:
11. Het bekijken van videobeelden van mijn sport via een website ervaar ik als:
12. Mijn vrienden vinden het normaal om via een website naar sportbeelden te kijken.
13. Vrienden van mij hebben al ervaring met het kijken van sportbeelden via een website
14. Ik vind het makkelijk op via een website naar sportbeelden kijken.
15. Ik bepaal zelf of ik naar sportbeelden via een website kijk.
16. Hoe vaak kijkt u op dit moment al naar sportbeelden via een website?
17. Ik ben bereid om te betalen als er interessante
beelden van mijn sport beschikbaar komen.
18. Het betalen voor sportbeelden van mijn sport ervaar ik als:
19 Het betalen voor sportbeelden van mijn sport ervaar ik als:
20. Mijn vrienden vinden het normaal om voor sportbeelden te betalen.
21. Vrienden van mij hebben al ervaring met het betalen voor sportbeelden via een website.
22. Ik vind het makkelijk om voor sportbeelden via een website te betalen.
23. Of ik betaal voor sportbeelden via een website is volledig mijn eigen keuze.
24. Hoe vaak heeft u al betaald voor sportbeelden via een website?
25. Welke betaalmethode heeft uw voorkeur?
26. Bij welke prijs begint u een abonnement goedkoop te vinden?
27. Bij welke prijs begint u een abonnement duur te vinden?
28. Vanaf welke prijs begint u een abonnement zo goedkoop te vinden, dat u aan de kwaliteit van de dienst begint te twijfelen?
29. Vanaf welke prijs vindt u een abonnement zo duur, dat u niet meer zou overwegen om een abonnement te nemen?
30. Bij welke prijs voor een enkele uitzending vindt u deze goedkoop?
31. Bij welke prijs voor een enkele uitzending vindt u deze duur?
32. Vanaf welke prijs voor een enkele uitzending vindt u deze zo goedkoop, dat u aan de kwaliteit van de dienst begint te twijfelen?
33. Vanaf welke prijs voor een enkele uitzending vindt u deze zo duur, dat u niet meer zou overwegen om de uitzending aan te schaffen?
34. Welk bedrag bent u bereid om te betalen voor een uitzending die uw verwachtingen overtreft?
35. Welk bedrag bent u bereid om te betalen voor een uitzending die aan uw verwachtingen voldoet?
36. Welk bedrag bent u nog bereid om te betalen voor een uitzending die niet aan uw verwachtingen voldoet?
37. Hoe vaak beoefent u uw sport?
38. Beoefent u uw sport in wedstrijdverband?
39. Wat is uw geslacht?
40. Wat is uw leeftijd?
41. Wat is uw hoogst genoten opleiding?

Question	Name variable	Measurement level	Description variable	Answer	Code	Label
1	Var1	Nominal	Type of sport	Zwemmen Volleybal Badminton Wielrennen	1 2 3 4 99	Swimming Volleyball Badminton Bicycle Racing No information
2	Var2	Ratio	Interest (watching sport)	Number	Number 99	Hours a week No information
3	Var3	Nominal	Media preference	Publiek of comm. zenders	1 2	Yes No
3	Var4	Nominal	Media preference	Betaal kanaal digitale televisie	1 2	Yes No
3	Var5	Nominal	Media preference	Internet	1 2	Yes No
3	Var6	Nominal	Media preference	Mobiele telefoon	1 2	Yes No
4	Var7	Ordinal	Interest (international sport images)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
5	Var8	Ordinal	Interest (national sport images)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
6	Var9	Ordinal	Interest (local sport images)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
7	Var10	Nominal	Interest (type of content)	Volledige wedstrijden	1 2	Yes No

7	Var11	Nominal	Interest (type of content)	Samenvattingen van wedstrijden	1 2	Yes No
7	Var12	Nominal	Interest (type of content)	Nabeschouwingen	1 2	Yes No
8	Var13	Ordinal	Potential consumers (Intention)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
9	Var14	Ordinal	Potential consumers (Intention)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Never A few times a year Monthly Weekly Daily No information
10	Var15	Ordinal	Potential consumers (Attitude)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Worthless Slightly worthless Neutral Slightly valuable Valuable No information
11	Var16	Ordinal	Potential consumers (Attitude)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Unpleasant Slightly unpleasant Neutral Slightly pleasant Pleasant No information
12	Var17	Ordinal	Potential consumers (Subjective norm)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information

13	Var18	Ordinal	Potential consumers (Subjective norm)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
14	Var19	Ordinal	Potential consumers (Perceived behavioral control)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
15	Var20	Ordinal	Potential consumers (Perceived behavioral control)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
16	Var21	Nominal	Potential consumers (Perceived behavioral control)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Never A few times a year Monthly Weekly Daily No information
17	Var22	Ordinal	Potential buyers (Intention)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
18	Var23	Ordinal	Potential buyers (Attitude)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Unpleasant Slightly unpleasant Neutral Slightly pleasant Pleasant No information

19	Var24	Ordinal	Potential buyers (Attitude)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Bad Slightly bad Neutral Slightly good Good No information
20	Var25	Ordinal	Potential buyers (Subjective norm)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
21	Var26	Ordinal	Potential buyers (Subjective norm)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
22	Var27	Ordinal	Potential buyers (Perceived behavioral control)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
23	Var28	Ordinal	Potential buyers (Perceived behavioral control)	Option 1 Option 2 Option 3 Option 4 Option 5	1 2 3 4 5 99	Totally disagree Disagree Neutral Agree Totally agree No information
24	Var29	Nominal	Potential buyers (Perceived behavioral control)	Nooit Een enkele keer (1-5) Regelmatig (meer dan 5)	1 2 3 99	Never A few times (1-5) Frequently (more than 5) No information

25	Var30	Nominal	Direct revenue model	Abonnement Afrekenen per keer Zelf de hoogte van de bijdrage bepalen	1 2 3 99	Subscription Per-unit fee Self determined pricing No information
26	Var31	Ratio	Subscription fee (cheap)	Number	Number 99	Subscription fee (cheap) No information
27	Var32	Ratio	Subscription fee (expensive)	Number	Number 99	Subscription fee (expensive) No information
28	Var33	Ratio	Subscription fee (too cheap)	Number	Number 99	Subscription fee (too cheap) No information
29	Var34	Ratio	Subscription fee (too expensive)	Number	Number 99	Subscription fee (too expensive) No information
30	Var35	Ratio	Per unit fee (cheap)	Number	Number 99	Per unit fee (cheap) No information
31	Var36	Ratio	Per unit fee (expensive)	Number	Number 99	Per unit fee (expensive) No information
32	Var37	Ratio	Per unit fee (too cheap)	Number	Number 99	Per unit fee (too cheap) No information
33	Var38	Ratio	Per unit fee (too expensive)	Number	Number 99	Per unit fee (too expensive) No information
34	Var39	Ratio	Self determined pricing (exceeding expectations)	Number	Number 99	Maximum price No information
35	Var40	Ratio	Self determined pricing (matching expectations)	Number	Number 99	Average price No information
36	Var41	Ratio	Self determined pricing (underperforming expectations)	Number	Number 99	Minimum price No information
37	Var42	Nominal	Sportsman activeness (actively sporting)	Jaarlijks Maandelijks 1 tot 2 keer per week Meer dan 2 keer per week	1 2 3 4 99	Yearly Monthly 1 to 2 times a week More than 2 times a week No information
38	Var43	Nominal	Sportsman activeness (Competition player)	Ja Nee	1 2 99	Yes No No information

39	Var44	Nominal	Gender	Man Vrouw	1 2 99	Male Female No information
40	Var45	Ratio	Age	Number	Number 99	Age No information
41	Var46	Ordinal	Education	Option 1 Option 2 Option 3 Option 4 Option 5 Option 6 Option 7	1 2 3 4 5 6 7 99	Basisschool LBO / VBO-praktijk MAVO / VMBO-Theoretisch HAVO / VWO MBO HBO WO No information

15 Appendix G: Background articles

YouTube in Top 3 Nederlandse web

vr 22 aug 2008, 13:12 Door: Pieter Jansen

Videosite YouTube is in de afgelopen twee jaar gegroeid naar een top-3-positie op het Nederlandse internet. Dat blijkt uit gegevens van Multiscope.

Bijna twee derde van alle Nederlandse internetgebruikers zien wel eens een filmpje op YouTube. Moederbedrijf Google blijft de onbetwiste nummer één. Voor de tweede plaats gaat het tussen YouTube, Buienradar, Hyves en Marktplaats. Op de Nederlandstalige versie van YouTube, die Google eind 2007 introduceerde, komt een kleine 30 procent van de internetters maandelijks één of meerdere keren.

Vijf keer per maand

Gemiddeld bezoeken Nederlanders YouTube vijf keer per maand. Surfers blijven dan gemiddeld 8,3 minuten kijken naar filmpjes op de site. Voor een internetsite is dat enorm lang. Als rapportcijfer krijgt de videosite een 7,5. Dat is vier tiende hoger dan het marktgemiddelde. Ook de maatschappelijke invloed van de site mag enorm genoemd worden. Door YouTube zijn mensen beroemd geworden, op YouTube komen mishandelingen aan het licht en dankzij YouTube zijn zaken opgelost,en dan zijn er de rechtszaken over auteursrecht op YouTube: de kranten staan er vol mee en iedereen kent de verhalen.

Entertainment populair

Het succes van YouTube als videosite staat niet op zich. Geen concurrent kan ook maar vijftig procent van de hoeveelheid bezoekers van YouTube halen, maar als geheel groeiden de entertainment-websites de afgelopen twee jaar sterker dan de markt. De sites maken daarbij optimaal gebruik van het netwerkeffect van internet. De plaatsing van filmpjes op andere websites zorgt daarbij voor veel groei. Sites als 123video, MSN Video, Uitzendinggemist en Dumpert zijn belangrijke spelers op de Nederlandse markt.

Niet te verzilveren

Ondanks de populariteit blijft YouTube wel worstelen met hét probleem van populaire gratis websites: de populariteit is nauwelijks te verzilveren. De kosten zijn enorm hoog, want de site heeft onvoorstelbaar veel data en dataverkeer, maar geld ermee verdienen is moeilijk. Uit onderzoek bleek dat mensen geen reclame willen zien voorafgaand aan zelfgemaakte filmpjes, en de invoering zou YouTube zelfs de kop kunnen kosten. Met banners is lang niet zoveel te verdienen. Als tussenoplossing gaat Google nu experimenteren met reclame op de mobiele site van YouTube, in de hoop ooit nog eens flink geld te kunnen verdienen met een van de meest populaire sites van het web.

ZIE OOK

Nederlandse homoband gigantische hit op YouTube 17-8

Nederlandse YouTube-ster zingt met Timberlake 30-5

Google gaat YouTube-video's op andere sites tonen 9-10

Turkije blokkeert YouTube 20-1

Advertenties op YouTube 22-8

Bankbiljetten webwinkel
Nederlandse en uit de hele wereld! In- & Verkoop. Tel. 0186-571366
VerzamelaarsMarkt.nl/bankbiljetten

Ads door Google

Retrieved on 31-12-2009 from:
http://www.dag.nl/multimedia/youtube-top-nederlandse-web-39437

Ten million music tracks remain unsold online

By Daily Mail Reporter Last updated at 3:33 PM on 22nd December 2008

The internet was set to re-shape our music-buying ways - opening up a vast market for sellers and buyers where obscure tracks would drive sales. However a study has found that more than 10 million of the 13 million tracks available on the internet failed to find a single buyer last year. This is the first big challenge to Chris Anderson's 'long tail' theory - that niche markets were the key to the future for internet sellers.

Anderson used data from an American online music retailer to predict in his 2006 book, The Long Tail, that the internet economy would shift from a relatively small number of 'hits' - commercial products - at the head of the demand curve toward a 'huge number of niches in the tail'. This was counter to the '80/20' rule in retailing that suggests the most popular 20 per cent of products is the way to make a profit as they will account for 80 per cent of the sales. Instead due to cheapness and accessibility of searching for products on online, retailers would be able to make money from more obscure products because they would find an audience. However a new study by Will Page, chief economist of the MCPS-PRS Alliance, suggests the success of online sales still depends on big hits. The not-for-profit royalty collection society found that, for the online singles market, 80 per cent of all revenue came from 52,000 tracks. For albums, the figures were even less encouraging. Of the 1.23 million available, only 173,000 were ever bought, meaning 85 per cent did not sell a single copy all year, meaning 85 per cent did not sell a single copy all year. 'I think people believed in a fat, fertile long tail because they wanted it to be true,' Page's co-researcher, Andrew Bud, told The Times. 'The statistical theories used to justify that theory were intelligent and plausible. 'But they turned out to be wrong. 'The data tells a quite different story. For the first time, we know what the true demand for digital music looks like, ' added Bud. 'The relative size of the dormant 'zero sellers' tail was truly jaw-dropping,' said Page. 'Rather than continue to believe the selective claims of 'here's another great example of the long tail at work', we wanted to find out how long-tail markets should be analysed, plotted and interpreted,' Page added. Page and Bud found that online music sales followed a sales distribution laid out by Robert Goodell Brown, an American economist, in 1956. Brown outlined the theory in Statistical Forecasting For Inventory Control on inventory control that focused on the sales of industrial items such as rivets and widgets. 'There is a an eerie similarity between digital and high-street retailer in terms of what constitutes an efficient inventory and the shape of their respective demand curves,' said Page.'I think there's something more going on there: a case of new school meets old rules,' he added.

Retrieved on 31-12-2008 from: http://www.dailymail.co.uk/sciencetech/article-1099903/Ten-million-music-tracks-remain-unsold-online.html#

donderdag 27 november 2008

Omniworld Volleybal vraagt faillissement aan

ALMERE - Omniworld Volleybal heeft donderdag het faillissement aangevraagd. Dat meldt de club uit de A-League in een persbericht. De reden is dat de Robert J Reinders Group de financiering van de club heeft stopgezet.

Het Hengelose bedrijf zag ondanks vele inspanningen om potentiële geldschieters enthousiast te maken geen zicht op substantiële sponsorbijdragen en vond het niet langer verantwoord garant te blijven staan voor de tekorten.

Evenementenorganisator Reinders had de club een jaar geleden al gered van een faillissement. Het doel was toen binnen drie jaar mee te doen om de nationale titel en daarna succes te boeken in de Champions League.

Zo ver komt het niet. Volgende week wordt een curator benoemd. De eerstvolgende competitiewedstrijd, vrijdag tegen Piet Zoomers Dynamo, gaat in ieder geval niet door. (ANP)

Retrieved on 31-12-2008 from: http://www.sportwereld.nl/volleybal/2805579/Omniworld_Volleybal_vraagt_faillissement_aan.html