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Ubiquitous TV

A Business Model Perspective on the Norwegian Television Industry

Tore Stautland Bjøndal
Mads Gedde

Industrial Economics and Technology Management
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Supervisor: Øystein Moen, IØT

Norwegian University of Science and Technology
Department of Industrial Economics and Technology Management

Problem Description

The idea of convergence between TV and the Internet has been around for more than a decade, but with the looming anticipation of actually achieving infinite broadband bandwidth, the prospect of actual convergence is more realistic than ever. Internet connected TVs are appearing in the market place and distributors are already exploring the possibilities through video-on-demand solutions delivered directly to TV, both through the Internet and through regular distribution modes. This development is a response to changing consumer behavior, where more and more consumers are opting for non-linear TV consumption.

The development in both technology and consumer behavior is creating business model related opportunities and challenges, and possibly a new TV-reality. In this master thesis we will explore the market place and best practice for future TV business models.

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Supervisor: Øystein Moen, IØT

Executive summary

The Internet is an emerging distribution channel for television content that will deeply impact industry incumbents in the long term. This master thesis explores what challenges are brought forth in this industry by the possibility of Internet distribution of TV and how these issues should be addressed from the business model perspective of incumbent distributors in the Norwegian television market.

There have been tremendous developments in Internet related infrastructure over the last decade. Combined with other industry developments this have led to the introduction of several new OTT-services that offer the consumer increased convenience and lower price points at the expense of lower quality. Overseas the development has come even further than in Norway and new entrants are challenging incumbents and stealing market share.

However, the emergence of the Internet as a distribution channel for TV-content has brought forth numerous complications for existing incumbents. An explosive growth in Internet data traffic tied to online video consumption is straining the existing infrastructure. Distributors want content providers to cover parts of the costs for expanding infrastructure capacity, while content providers argue that consumers are already paying for Internet traffic. Another challenge is increased competition for end-consumer ownership with the introduction of OTT-services. The consumer behavior is also changing towards wanting to increase the share of content consumed on-demand, and to have the content available on multiple devices. The industry challenges combined are forcing incumbents to take action. Traditional distributors of TV have not been able to build a holistic business model that supports the new environment, in fear of extensively cannibalizing their existing model.

This paper maintains that industry incumbents need to shift away from their reactive behavior with regards to technological development, and to start focusing on what value they can deliver to consumers. Our suggested new value proposition is to offer a highly personalized TV-service that is available on all types of screens, can be accessed at the consumers convenience, does not discriminate on content, and which is focused on providing a superior user experience.

The value proposition entails shifting focus from proprietary networks to network agnostic distribution platforms. Broadcasted and on-demand TV should be supported equally and integrated seamlessly across the platform, without the silos that exists between the two today. For distributors to align their business model to this value proposition, they must carry out the following activities: 1) Develop a platform for TV-services that supports video-on-demand. 2) Make sure the platform can be used with all distribution channels. 3) Adapt the platform to support a ubiquitous experience across multiple screens and devices. 4) Create a vast library of content by aggregating different sources and negotiating rights. 5) Create a seamless integration and user experience across the platform. 6) Maintain a focus on traditional linear broadcasting to support live events and the social TV-experience.

For all of this to take place management must first and foremost come to terms with the fact that the industry around them is changing. This entails starting to experiment with new business models alongside their existing model, regardless of the risk of cannibalization. Not getting involved in the emerging market can be even more dangerous than failing at the first attempt. Catching up once one is lagging behind will be extremely difficult.

Preface

This master thesis was written during the spring of 2011 as the final work towards an MSc degree with the Department of Industrial Economics and Technology Management at the Norwegian University of Science and Technology, NTNU.

The goal of this thesis has been to evaluate the ongoing development in the Norwegian TV-industry and to highlight the challenges faced by players in this eco-system. A special emphasis has been put on the role of the distributors, and the authors aim to provide some suggestions as to in which direction this market is headed and what implications the outlined challenges will have on the distributors with regards to the business models they deploy.

We greatly appreciate the time taken by the interviewees – Marius Haugen from Get, Jørn E. Hodne from NextGenTel, Hege Kosberg from TV 2, Morten Lynum from RiksTV, Bjarne Andre Myklebust from NRK, Knut Sinkerud from NPT, Anders Solhaug from NextGenTel and Sven Størmer Thaulow from Telenor – to provide the authors with the essential industry insight necessary for completing this thesis.

We would also like to thank our academic supervisor Øystein Moen – at the Department of Industrial Economics and Technology Management – for valuable input and feedback during the course of writing this master thesis.

About the authors

The authors are MSc students **Tore Stautland Bjøndal** and **Mads Gedde**. We are in our final year of the 5-year Master's program in Industrial Economics and Technology Management at NTNU in Trondheim, Norway. The program is a 5-year integrated study track that combines courses in technology, management, natural sciences and mathematics. The goal of the program is to let the students develop knowledge in the intersection of business and technology, and thus be prepared to work in these areas in a vast range of industries.

Guide for the reader

Due to the amount of information provided in this master thesis, we include this reading guide. The following suggestions should enable the reader to navigate the paper more easily and enable him to extract relevant information.

The paper is divided into four specific sections:

1. **Introduction** – Contains information on the background of the paper and presents a theoretical foundation. This part extends the project thesis written by the authors during the fall 2010.

2. **Situation** – Explains the TV-industry and the underlying technology, and contains all the empirical data gathered for the purpose of answering the problem statement. It includes interview summaries and a summary of an industry conference.

3. **Complication** – Synthesizes the authors' empirical findings into a set of categories which outline the main business model related challenges faced by distributors in the TV-industry.

4. **Resolution** – Builds on the synthesis of challenges and proposes a series of must do's players can embrace to align according to the ongoing changes in the industry. Additionally a set of managerial implications with respect to business model innovation is provided.

For the reader with some prior knowledge of the TV-industry it is not necessary to read the paper from cover-to-cover. The paper has been structured in a way that should allow the reader to dive into those parts that are of interest to him or her.

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Introduction

Introduction

1

This introductory chapter aims to set the stage for the reader with regards to the problem statement that will be explored throughout the paper. Further we will elaborate on the specific goals, the unit of analysis that will be addressed, how it's configured, and lastly a subsection discussing the limitations of the paper.

1.1. Problem statement

The players TV-industry has for a long time talked about how the Internet can enhance the TV-experience, but incumbents have been moving slowly. In recent years several new players have emerged to fill the void between the TV and the Internet, forcing incumbents to start rethinking their positioning in this market. New entrants are utilizing the Internet as a direct distribution channel for video content, omitting the need for a dedicated infrastructure for broadcasting TV-signals. As consumers slowly are embracing these new services their viewing behavior is starting to change, and consumers are expecting the incumbent TV-industry to change accordingly. What we are seeing is the possibility for a convergence between TV and Internet-services. In light of this development this master thesis seeks to answer the following problem statement:

> *What challenges are brought forth in this industry by the possibility of Internet distribution of TV and how should these issues be addressed from the business model perspective of incumbent distributors in the Norwegian television market*

In answering the main research question, the following points of interest are also addressed:

- In which direction is the TV-market moving?
- What further developments will become evident in the TV-industry over the next five year period?

The focus of this paper, in answering the above outlined problem statement, has been on gathering and synthesizing empirical data through market research, interviews and attending an industry conference. Additionally the authors work on the project thesis: *New business models in the media industry* (2010), serves as a theoretical foundation on the topic of business models. This foundation is extended here and used throughout the thesis.

1.2. Goals

The goals of the master thesis can be outlined as follows:

- To generate an extensive situational analysis of the Norwegian TV-market
- To identify the major complicating factors within the TV-industry as the underlying technology and consumer behavior is changing
- Suggest a series of initiatives to be carried out by industry players, founded in empirical evidence and the application of business model theory

The author's interest in this topic emerged as a result of working on the previously mentioned project thesis. Our findings there indicated that the TV-industry is entering a period of uncertainty as a result of rapid technological development. Exploring an industry in development is highly relevant to students of Strategy and Business Development. The newness of the academic topic on business models also triggered our interest in further testing the usefulness of a specific implementation of the theory as an analytical tool.

Lastly we hope that the work we have carried out is of interest to industry professionals; potentially bringing a new perspective into light with respect to how business model and business model innovation theory can be successfully applied in analyzing and identifying points of transformation within the industry.

1.3. Unit of analysis

This master thesis revolves around one central unit of analysis: distributors of professionally produced TV-content to consumers. The analysis is carried out through the perspective of business model theory.

The definition of TV we make use of is:

> *Professionally produced video content delivered to the consumer wherever he is, for immediate consumption on a suitable device.*

This definition indicates that TV is independent of both the technology used for distribution and the type of screen that is used for consumption of TV-content. Thus in defining the TV-experience we disregard whether the signal is transmitted via a DTT-network, cable, satellite, fiber or any other infrastructure for distribution, and whether the consumer receives the content on a TV-screen, a computer, a tablet or a mobile phone.

The definition of a business model we make use of is:

> *«A business model describes the rationale of how an organization creates, delivers, and captures value»*
> *(Osterwalder 2010)*

In addition to the definition Osterwalder has proposed a framework that categorizes the elements of a business model. This business model canvas is utilized as a tool for both understanding how the activities carried out by a firm correlates to each other, and more specifically for tying all of our findings together in a comprehensive manner.

1.4. Configuration of the paper

In order to guide the reader through the contents of this paper in a logical way it has been structured as follows. The paper starts off with an introductory section that includes this introduction of the topic and problem statement (chapter 1). Further it includes an enhanced version of the literature review that was presented in our project thesis (chapter 2) and also a chapter on the methodology applied in writing the paper (chapter 3).

The second section is a complete situational analysis of the Norwegian TV-industry. It consists of a chapter which describes the market in terms of relevant technology, industry supply chain and players, current business models and key trends observed (chapter 4). The second chapter of this section contains all of the empirical data collected throughout the process of writing this paper, including interview summaries, summary from an industry conference and some third party data (chapter 5).

Section three, named *Complications*, is a synthesis of all the challenges identified for distributors in the TV-industry (chapter 6). The findings are grouped into a series of overarching themes that illustrate the complicating factors experienced by industry players. Each

theme is rounded off with a short discussion on their implications with respect to business models. The section ends with a summary, mapping the challenges to the respective business model elements that they have an effect on.

The final section, *Resolution*, suggests possible solutions to the challenges outlined in the preceding section (chapter 7). In this section the authors seek to establish the success criteria for TV-distributors given the current market development towards a converged TV and Internet eco-system. It also contains an overview of managerial implications related to business model innovation. Lastly we revisit the given problem statement and provide some concluding remarks (chapter 8).

1.5. Limitations of the paper

The scope of this master thesis limits the analysis to the TV-market as it is in Norway today, drawing inspiration from the market development in other countries only when necessary to gain perspective on the likely path of future development. The decision to enforce this limitation was a result of time and resource constraints, and also an effect of our belief in localization of markets. The focus on the Norwegian market has allowed us to get in touch with relevant informants in a way that would not have been possible given a global scope. Thus the applicability of the report is in general thought to be for the Norwegian and possibly other Scandinavian TV-markets with similar defining attributes.

In addition to limiting our research to the Norwegian market, the decision was made to highlight the industry from the perspective of TV-distributors. Using the distributor as a focal point has possibly affected the authors – who also are consumers – to a certain degree. The danger lies in not being able to see beyond one's own preferences towards the industry, and how the distributor – who is the final link to the consumer – should adapt. Though we believe that by being conscious of this pitfall, we have been able to maintain objectivity throughout the research.

Given our definition of TV as professionally produced video content, low quality video services such as YouTube has not been part of our attention. Even though this type of service can be considered a front-runner in providing video services over the Internet, the development in Internet-distribution have come far enough to justify that full attention has been put towards professional services.

Choosing one type of industry player as the focal point can easily lead to omittance of some of the viewpoints of the parties that constitute the remaining parts of the supply chain for a service. We have made sure to conduct interviews with content providers to identify the tensions between them and the distributors, but have chosen not to take into account the view of advertisers, who are also an integral part of this supply chain. This is mainly due to time constraints. Additionally we have not looked at potential technologies for distribution of TV over mobile networks, primarily because incumbent distributors do not seem to be deeply involved in mobile technologies today. Mobile distribution is something that the industry is talking about, but we believe that this development lies further into the future than the five year timespan we have focused on.

By and large, we consider the extent of the empirical data collected to sufficiently support the validity of our findings.

2 Theoretical background

In this section we will elaborate on theory regarding business models and augment the findings from our project thesis with a deeper focus on business model innovation. We will also expand on the managerial implications of exploring, sustaining and implementing business model innovation from a change management perspective.

2.1. Business model theory

Management and academic literature on the concept of business models is fairly recent and low in volume. Several definitions have been suggested over the last decade, but as to date there is no commonly accepted definition in place (Shafer et al. 2005, Zott et al. 2010). In our project thesis *New business models in the media industry* (2010), several of these suggestions were brought to the reader's attention. The authors chose to rely on the business model framework (Figure 1), as proposed by Osterwalder (2010), to explain the concept. In addition to the suggested framework for explaining a business model Osterwalder also offers the following definition: «A business model describes the rationale of how an organization creates, delivers, and captures value» (Osterwalder 2010 p.14).

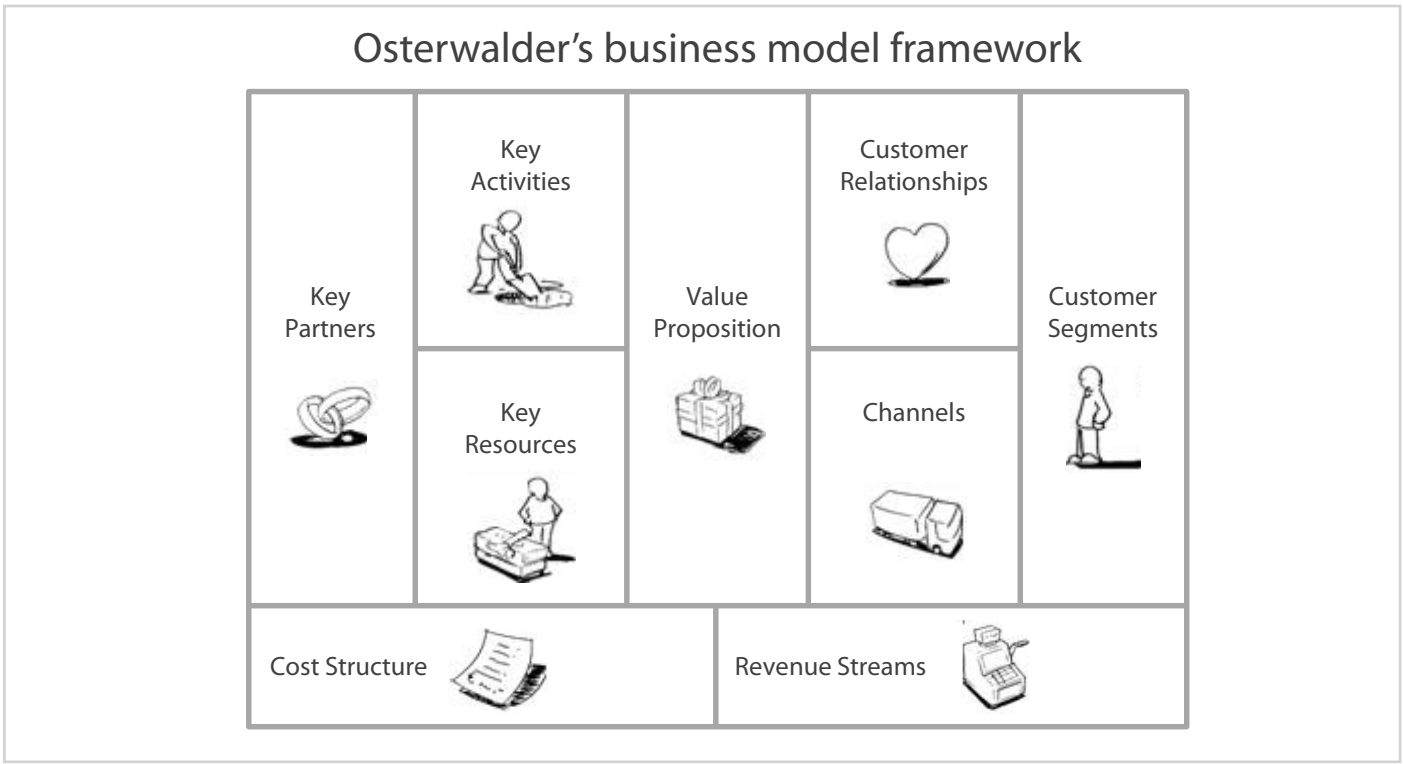

Figure 1: The business model framework
Source: Osterwalder (2010)

To the degree that there exists some convergence on the topic of business models, it's centered around the premise that «the business model is a new unit of analysis in addition to the product, firm, industry, or network levels» (Zott et al. 2010 p.1). Further the business model describes the activity system that comprises a firm, including its boundary spanning activities. As such the business model can be viewed as strategy-in-practice. By using a tool like Osterwalder's business model framework the most important activities performed by a firm can be mapped out in order to understand how they relate to each other and possibly to discover inconsistencies between strategy and practice.

Osterwalder's business model framework

Osterwalder's framework (also known as the business model canvas) consists of nine components, which when seen together can give an approximation to a holistic view on the business model of a company. We here recite the nine parts of the framework as they were presented in the project thesis *New business models in the media industry* (2010) written by the authors.

Customer segments

Osterwalder (2010) claims that a firm's understanding of the customer segment is instrumental for its survival and success, and has defined it as a compartmentalized part of in the business model canvas. When reviewing business model research we found that the customer and customer segment is often singled out as a very important part of the business model. According to Magretta (2002 p.4), «a good business model answers Peter Ducker's age-old question: Who is the customer? And what does the customer value?» Zott et al. (2010 p.21) found «a strong consensus that the business model revolves around the general concept of (customer-focused) value creation».

Value proposition

The next part of the business model is the offer in the marketplace. Osterwalder (2010 p.22) explains this as the output from the activity system to the customer, and as «the bundle of products or services that create value for a specific customer segment». This value can be either quantitative (e.g. price, performance, etc.) or qualitative (e.g. customer satisfaction, user friendliness, design, etc.), and the separate indicators may be weighted differently from one customer segment to another.

Channels

The channels describe the various means the company can use to reach the customer with its value proposition. This encompasses all the ways the firm interacts with the customer, including distribution channels, sales channels, marketing and other forms of communication. The choice of and utilization of channels can greatly affect the way the customer values the product offering. An example is that a lot of the recent interest in business models came with the advent of the Internet, including all the new communication and delivery methods it brought with it (Zott et al. 2010, Shafer et al. 2005).

Customer relationships

This building block is about the types of relationships a company wants to build to its customers. Several different types of relationship may be present within one customer segment, ranging from personal to automated, self-service to dedicated assistance and individual to communities. Customer relationships may be about increasing the number of customers through customer acquisition, keeping your customers through customer retention or moving your customers from one of your value propositions to another through customer transformation.

Key resources

The key resources are the most important assets that support the business model. This can be either human, intellectual, financial or physical assets, and they support for example the value proposition, keeping or building relationships with the selected customer

segments and utilizing the channels in the best possible way. The key resources can either be owned by the company or leased or acquired through its key partners.

Key activities

This category describes the most important activities the company has to do in order to fulfill the business model. These activities vary based on the chosen business model, but they should all support the other critical building blocks of the framework. Examples of such activities may be supply chain management, problem solving, or management of a business platform. Osterwalder (2010) categorizes key activities into production, problem solving or platform/network related.

Key partners

A business model is according to Shafer et al. «a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network» (2005 p.202). The key partners are needed in your network to support your business model. Partnerships are founded in order to create alliances, optimize the business model or to reduce risk. Several methods exists in order to subdivide key partners further.

Revenue streams

For a for-profit organization to survive and prosper, it must find a way to monetize on its product offering, generating revenue streams to the firm and covering its costs. For business models, this implicates that value capture is a required part of the model. Osterwalder (2010) claims that good business models have a novel way of capturing value from the activity system. Value capturing or revenue streams are one of the key components of a business model, and the one that is mentioned in most of the different definitions found in the literature review (Chesbrough 2007, Magretta 2002, Johnson et al. 2008). The business model should answer «the fundamental question every manager must ask: How do we make money in this business?» (Peter Drucker cited in Magretta 2002 p.4).

Cost structure

This category includes all the costs incurred by the complete business model. It comes without saying that it is necessary to limit the costs in order to generate profit. Some business models are more focused on costs than other. Osterwalder (2010) introduces two broad classes of cost approaches, which is either the cost-driven business model – where all costs are minimized – or the value-driven business model – where costs are less important than increasing the value delivered to the customer.

The business model framework revisited

The previous sub-section gave a generic and unbiased overview of the components of Osterwalder's business model canvas. In our project thesis *New business models in the media industry* (2010) Osterwalder's framework served as the foundation for a more elaborate framework where business model theory was viewed in combination with theories on disruptive innovation, industry life cycles, path dependence and the resource based view.

From the authors experience the proposed business model framework by Osterwalder is a good basis for conducting an analysis of firms within an industry. The framework forces the user to consider vital aspects of how a firm has configured its current activities, and whether the activities are in congruence with that particular firm's strategy.

As a result of the previously experienced success in applying the theory behind the framework, it is put to use also for the purpose of writing this paper.

Business model archetypes

While a firm often is viewed as managing one business model at a time, this is not necessarily the entire truth. *New business models in the media industry* (2010) introduced the construct of business model archetypes. The construct was defined as being a collection of the set of the most generic activities that surround a specific value proposition. This construct is similar to Osterwalder's (2010) definition of business model patterns,

but instead of being entirely general, as the patterns, archetypes are thought of as being industry or market specific.

In fast paced technology driven industries, an actor can seldom concentrate on doing one thing only. All firms have to position for shifts brought on by changes in the market. If such a shift is embraced by several actors and is manifested in that they all make changes to some of their activities in order to best exploit the opportunities generated by the new technology, then those changes could form the basis for a new business model archetype. The new archetype then describes the generic activities undertaken by all those who embrace the change. This is why the thought was put forward in our project thesis that each firm at any given point in time often have a business model that comprises two or more archetypes, and thus have to balance resources and emphasis between these. What can be observed is the utilization of concurrent business model archetypes.

The balancing act of concurrent business model archetypes is especially evident when firms have to choose between cannibalizing their current and long standing model in order to position for new market opportunities. When large market shifts are believed to occur sometime in the immediate future it is especially important for incumbent firms to familiarize themselves with the activities that are necessary to continue to thrive within an industry.

2.2. Business model innovation

«Business model innovation results from one of four objectives: (1) to satisfy existing but unanswered market needs, (2) to bring new technologies, products, or services to market, (3) to improve, disrupt, or transform an existing market with a better business model, or (4) to create an entirely new market» (Osterwalder 2010 p.244).

This is congruent with the view of Johnson et al. (2008) who proposes the following five strategic circumstances that require business model change:

1. Addressing groups of over-served customers with a low price disruptive innovation
2. Leveraging a tested technology by bringing it to a whole new market
3. Taking a jobs-to-be-done approach to meet unmet customer demands
4. Blocking low-end disruptors
5. Responding to a shifting base of competition

To underpin the importance of business model innovation, Chesbrough states that «a better business model will often beat a better idea or technology» (2007, p. 12).

The business model innovation process

In *New business models in the media industry* (2010) the authors pointed to Chesbrough's (2010) definition of three necessary processes when transitioning from a current to an alternate business model. Such a transition is a vital part of business model innovation. The three processes: experimentation, effectuation and organizational leadership are here given in the same form as in the mentioned project thesis.

Experimentation – It is difficult to predict which models will work in the future, but as Chesbrough states, seeing models which are not working are easier. Under these conditions, experimentation becomes important, because it is the only way to identify and validate new business models. «Business model innovation is not a matter of superior foresight ex ante – rather, it requires significant trial and error and quite a bit of adaption ex post» (Chesbrough 2010 p. 357).

Chesbrough cites Thomke's principles on effective experimentation. Low cost – related to the experiment and cost of a failed experiment. Fidelity – the experiment's validity as a representation of the actual market. The best way to attain high fidelity is by trying out new models on real customers and for this, start-ups are very well suited (Chesbrough 2010).

Effectuation – Analysis is an ineffective approach to business model innovation according to Chesbrough, because the data for thorough analysis, which normal business decisions are based on, is lacking. It is therefore important to enact the market in order to reveal data, and this bias towards enacting instead of analyzing is necessary in order to succeed (Chesbrough 2010).

Organizational leadership – The third process presented by Chesbrough is supported by several researchers in business model literature. Doz and Kosonen, state that «accelerating business model change and renewal [requires] a top team willing to venture into new models and (more difficult) abandon old ones» (2009 p.376). The emphasis on top management support is also supported by consultants from IBM. Based on data from the IBM Global CEO study from 2006, they conclude that it is a myth that innovation management can be delegated and that «innovation must be orchestrated from the top» (2006 p.5). Doz and Kosonen points to the inherent risk involved in business model innovation. This in turn requires top management to accept it and be able to create a commitment from the organization in order to succeed (2009). Business model innovation will often lead to a period where two business models coexist, which presents difficulties when it comes to management. The transition process from one model to the other and the direct impact on individuals by the result of the transition requires a strong organizational culture in order for it to succeed (Chesbrough 2010).

Business model reinvention

The work by Johnson et al. focuses on when business model innovation or reinvention is necessary. They state that «very little formal study has been done into the dynamics and processes of business model development. Second, few companies understand their existing business model well enough—the premise behind its development, its natural interdependencies, and its strengths and limitations. So they don't know when they can leverage their core business and when success requires a new business model» (2008 p.60).

Johnson et al. (2008) defines a business model framework that is somewhat less extensive than that of Osterwalder. They divide a business model into «four

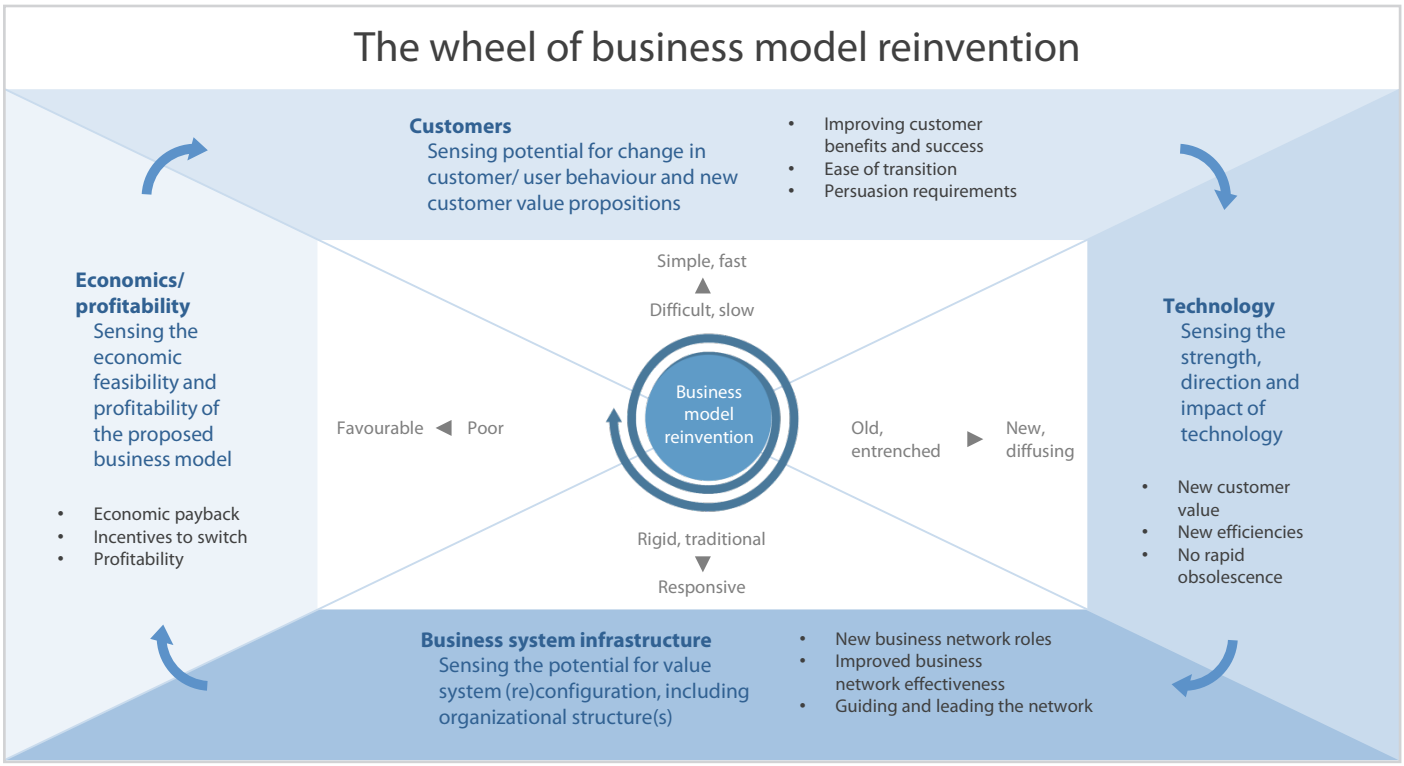

Figure 2: Wheel of business model reinvention
Source: Adapted from Voelpel et al. (2004)

interlocking elements that, taken together, create and deliver value». This is the customer value proposition, the profit formula, key resources and key processes. The elements of the construct overlap in large part Osterwalder's definition. Johnson et al. further argue that the power of the framework lies in the complex interdependencies of its parts.

Through the use of the framework Johnson et al. believe that executives can judge how well an existing model can be used to fulfill new and different customer value propositions, and thus what they need to do to construct a new one to capitalize on a new opportunity. At the same time executives are cautioned to engage in business model reinvention just for the sake of doing so. «Of course, companies should not pursue business model reinvention unless they are confident that the opportunity is large enough to warrant the effort. And, there's really no point in instituting a new business model unless it's not only new to the company but in some way new or game-changing to the industry or market. To do otherwise would be a waste of time and money» (Johnson et al. 2008 p.65).

Operationalizing business model reinvention

Voelpel et al. (2004) also addresses four main reasons for developing new business models: customers, technology, business infrastructure and profitability. Additionally in the 2004 paper The wheel of business model reinvention they introduce a systemic framework for thinking about business model innovation (Figure 2). While reinvention could be seen as a onetime event, many authors in the field of strategic management argue that innovation should be a continuous process. Regardless of the continuous or discrete approach to innovation, the goal of the suggested framework is to provide managers some guidance to the innovation process.

The main contribution of the framework is its attempt to operationalize the dimensions of new business model creation. This is done through focusing on four dimensions: «Customer sensing refers to the relative ease of acceptance of a new value proposition; technology sensing indicates the relative strength, direction and impact of technology on new customer value and the business network; business infrastructure sensing refers to the relative responsiveness of the traditional business network to reconfigure, or to the relative ease of a new business network configuration; economic sensing indicates relative economic feasibility and profitability of the proposed model» (Voelpel et al. 2004 p.269). The closer the results of the sensing process are to the outer limits of the figure, the more likely business model reinvention becomes. This flow of sensing activities should, according to Voelpel et al., be continuous and restarted after each loop completion. The suggested framework should help managers evaluate new business models and their accompanying organizational change and fitness requirements, as it in a systemic and logical way indicates how one can make sense of the surrounding competitive eco-system with respect to a proposed business models.

Voelpel et al. also cite some other academic author's viewpoints on business model innovation: «A company should, however, be oriented and capable of reinventing its strategy not when it is in the midst of a crisis, but continuously» (Hamel given in Voelpel et al. 2004 p.264). This illustrates the error that has been made by many incumbents in different industries over the years, and underpins the central theme of sensing that Voelpel et al. puts forth. By ignoring all or parts of the surrounding eco-system firms run the risk of being overtaken by new entrants utilizing new technology or who serves emerging customer needs. Another important aspect of business model innovation is timing. This point is illustrated in the following statement: «Companies have to pre-emptively cannibalize their own businesses to remain competitive» (Evans and Wurster given in Voelpel et al. 2004 p.264). Large institutionalized firms have to be willing to substitute their existing and working business model in the long term if they want to stay relevant in their specific market.

Open business models

In addition to defining the processes necessary for transitioning to a new business model Chesbrough (2007b) also suggest that many firms can benefit from what he calls an open business model. This is the next step after using outside technologies to develop products and licensing internal intellectual property to external parties. To open up the business model entails actively searching for and exploiting outside ideas as well as allowing unused internal technologies to flow to the outside. The idea is that an open business model approach allows for quicker realignment to changing and unknown eco-system variables, through an effective market for innovation.

The benefits from this approach are perceived to be cost and time savings in high paced technology driven markets, as the cost of technology development is ever increasing. «Open business models enable an organization to be more effective in creating as well as capturing value», which according to Chesbrough are the essential functions of a business model. «They create value by leveraging many more ideas because of their inclusion of a variety of external concepts» (2007b p.22).

A requisite for partaking in the benefits of open innovation is developing the ability and willingness to experiment with the business model (Chesbrough 2007b). This entails establishing processes for conducting experiments and assessing their results. One way of working around the fear industry incumbents often have of challenging their currently working business model is spinning off companies or investing in start-ups. «By observing how well a small organization does with a particular business model, a company can obtain much information about the viability of that model» (Chesbrough 2007b p.25).

In his research Chesbrough has identified that a shock or challenge to the status quo have triggered incumbents to explore opportunities that can emerge by opening up their business model. He has also found that making fundamental changes to an existing business model requires clear commitment and support from top management. This carries a clear link to many of the ideas of change management practitioners.

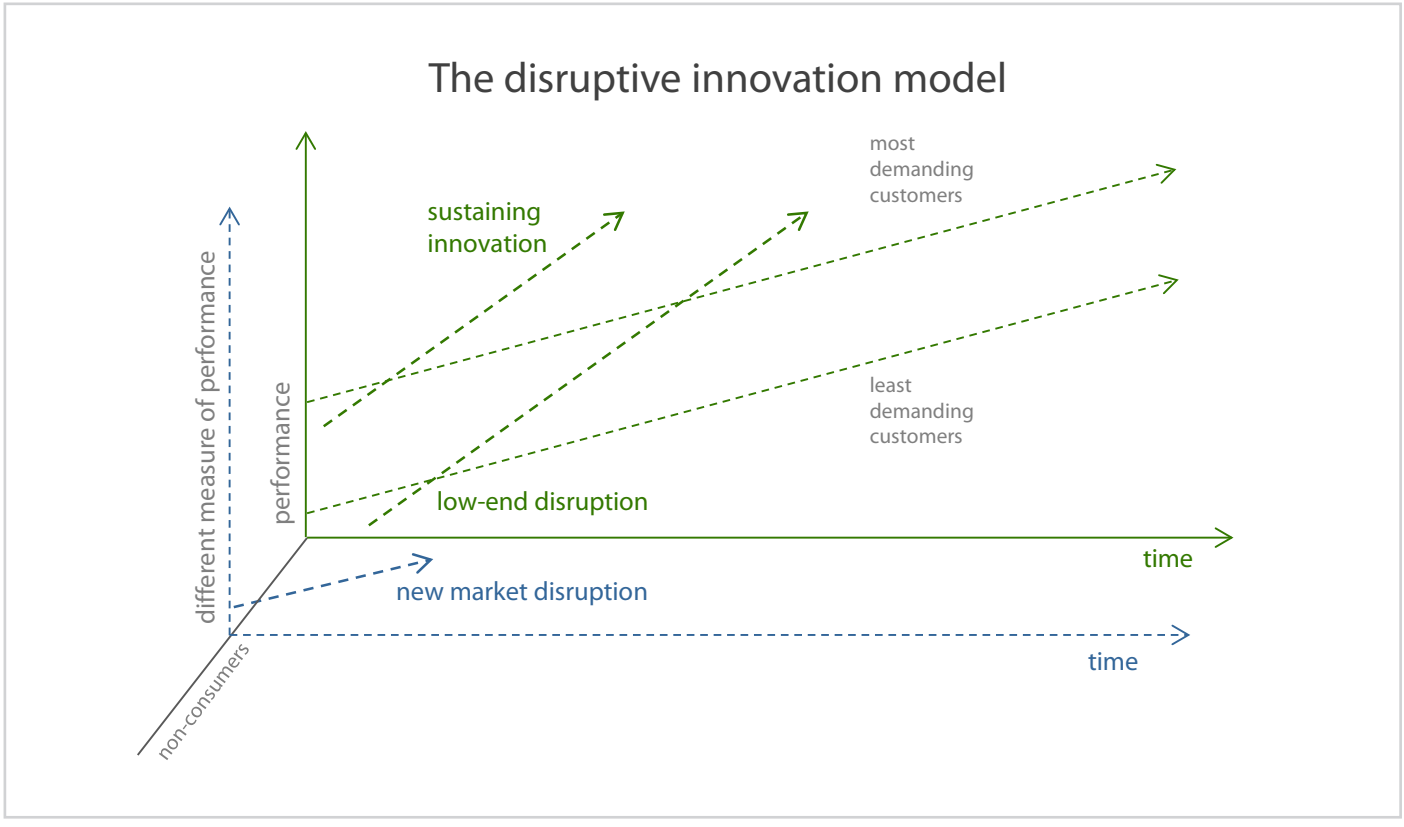

Figure 3: The disruptive innovation model
Source: Adapted from Christensen & Raynor (2003)

2.3. Technological disruption and discontinuities

Another field of theory often linked to business models is that of technological disruption and discontinuities. In the last couple of decades technology has often been one of the key drivers of industry change. Technology still retains this position today. As new technologies emerge they are prone to alter the current activities of firms within the industry of which the technology emerges. Thus indirectly technological advancement often forces business model change and innovation. The rest of this sub-chapter in an excerpt from our project thesis New business models in the media industry (2010).

The term *disruptive technology* was coined by Bower & Christensen (given in Christensen & Raynor 2003), further explained in Christensen (1997) and later redefined under the term *disruptive innovation* in Christensen & Raynor (2003). The term is used to describe different innovations that have a disruptive effect on the markets where they are introduced, usually by means of offering a different, lower-level product and by targeting existing, over-served customers or non-consumption (latent demand). These innovations have a disruptive effect because their value proposition enables new strategies and business models to be implemented profitably, which can change the economic dynamics of the market. In some cases, disruptive innovations create whole new markets from customers that previously were not being served in the product category from which the innovation had its roots.

As the disruptive technology term changed to disruptive innovation, Christensen & Raynor (2003) further defined the two sub-types of disruption: low-end disruption and new market disruption. These kinds of innovations are contrasted against sustaining innovations, which are incremental or radical performance increases on existing value propositions.

The disruptive innovation model

The difference between sustaining and disruptive innovation types can be explained by introducing Christensen & Raynor's (2003) disruptive innovation model (Figure 3). At the value axis (vertical bar), the model charts the performance dimension most relevant to customers in the different customer segments. Examples of this could be the capacity on USB-memory sticks or the sound quality of an audio hi-fi system. The horizontal dimension represents time.

Four inputs are mapped into the coordinate system:

- The customer's demand for performance, bounded by an upper and lower threshold (up-market vs. low-market performance demand), inclined upwards in such a way to represent the increasing demand for product improvement with time.
- Sustaining innovations/technologies in the market and their product performance levels, also increasing as incremental or radical product innovation improves performance with time.
- Low-end disruptive innovations that initially offers a performance level (value proposition) that is too low for almost all customers, but that enables new low-cost business models and targets over-served customers.
- New market disruption that enables non-customers to now consume the product by offering a new version of the initial product, with a different performance metric as the main competitive dimension.

Christensen & Raynor's disruptive innovation theory tries to model and explain the phenomenon of why some well-managed firms fail to respond to technological discontinuities and radical innovations in their

marketplaces. Through research into a range of product categories, Christensen & Raynor (2003) argues that incumbents are locked in by their own best-practice; they focus on quality and feature improvement, customer orientation, and profit maximization that historically have proved successful in their markets. They further support sustaining innovations along the performance metric most valued by current customers and partners in their value network. When disruptive innovations emerge – often from within the incumbents themselves – the mechanisms that managers use to filter new business opportunities that are to be resourced tend to prioritize sustaining innovations over disruptive innovations. With the processes and values applied by management of incumbent firms, and their current resource availability, most disruptive innovations simply do not make sense to pursue – they are not profit maximizing nor do they give their existing customers more value.

When incumbents ignore new disruptive innovations – while at the same time improving their products at such a rate that customer segments are becoming over-served – this can open up an opportunity for disruptive innovation. Through an entry into the market, a new player can offer a performance inferior to the current offering in the market, but this new low-end disruptive innovation can excel on other product attributes like price, convenience or simplicity. They often utilize a new, low-cost business model to bring the innovation to market. The over-served customers embrace the innovation, giving the entrant a small piece of the market that was previously unprofitable and mostly ignored by the incumbents. As the entrant starts to gain a foothold in the lower end of the market, Christensen & Raynor (2003) explain that incumbents oftentimes do not react – these customers are not lucrative and they continue to focus on the up-market, profitable customers. With time, the new disruptive innovation improves its quality and moves more up-market, forcing incumbents to give up even more customers until they either react to try to take back market shares or are pushed out of business altogether. The innovation that overtook the market is not disruptive itself, but had a new business model that enabled the disruptive economic potential to be unleashed.

Predictive output of the model

The key point argued by the disruptive innovation model is that when incumbents realize that they need to offer the new disruptive innovation in the market, they are months or years behind in developing and understanding the accompanying business model, and they have lost their competitive advantage over the disruptive entrants and thus their market position. Christensen & Raynor (2003) claims this is why incumbents historically and consequently fail when facing disruptive innovations. If a disruptive innovation is identified in the marketplace, it is therefore unlikely to be championed successfully by an incumbent.

2.4. Change management and organizational development

Realigning a current business model for a better fit or creating entirely new business models often entails serious alterations to both existing firm structures and industry supply chains. Such change or organizational development demand careful planning and management for successful completion. The current state of the academic field of change management has developed through the convergence of engineers' mechanical focus on change and psychologists' human focus on change (Hiatt & Creasy 2002). A view that many practitioners adhere to is that the people side of change is crucial to manage alongside altering business systems and activities. One definition of change management that illustrates this view is given by Hiatt & Creasy (2002): «Change management is the process, tools and techniques to manage the people-side of business change to achieve the required business outcome, and to realize that business change effectively within the social infrastructure of the workplace».

John Kotter's book Leading Change, published in 2006, is by many regarded as seminal work within the field of change management. In this book, and a

preceding article with the same name, Kotter presents eight steps to be carried out in order to increase the likelihood of achieving success with business transformation efforts (Figure 4). «Kotter maintains that too many managers don't realize that transformation is a process, not an event. It advances through stages that build on each other. And it takes years. Pressured to accelerate the process, managers skip stages. But shortcuts never work» (HBR 2007).

According to Kotter, firms efforts to remake themselves into better competitors have gone by many names such as restructuring and reengineering, but that in almost every case the basic goal has been the same; «to make fundamental changes in how business is conducted in order to help cope with a new, more challenging market environment» (1995 p.59).

The first step on the road towards transforming a business or parts of it is to establish a sense of urgency. Potential urgency matters often revolve around a crisis, a potential crisis, or a new market opportunity, and are identified through careful evaluation of surrounding or internal environmental factors. The process often starts with a few key individuals, and must gain top-management attention and support early on to establish some traction. The activity of rooting transformation efforts through generating crisis scenarios is «in the words of a former CEO of a large European company […] 'to make the status quo seem more dangerous than launching into the unknown'» (Kotter 1995 p.61). After urgency has been established with a sufficient number of a company's managers, Kotter propose that forming a powerful guiding coalition to lead the change effort is the next step. The coalition must be encouraged to work as a team, often outside the traditional business hierarchy as there will always be part of the management group that will not buy in to the need for transformation. But the parts of top management that support it must be highly involved, delegating the responsibility to lower level managers does not communicate commitment. Companies that fail to do this often have underestimated the difficulty of producing change. The guiding coalition is

1 Establishing a sense of urgency

- Examining market and competitive realities
- Identifying and discussing crises, potential crises, or major opportunities

2 Forming a powerful guiding coalition

- Assembling a group with enoug power to lead the change effort
- Encrouaging the group to work together as a team

3 Creating a vision

- Creating a vision to help direct the change effort
- Developing strategies for achieving that vision

4 Communicating the vision

- Using every vehicle possible to communicate the new vision and strategies
- Teaching new behaviors by the example of the guiding coalition

5 Empowering others to act on the vision

- Getting rid of obstacles to change
- Changing systems or structures that seriously undermine the vision
- Encouraging risk taking and nontraditional ideas, activities, and actions

6 Planning for and creating short-term wins

- Planning for visible performance improvements
- Creating those improvements
- Recognizing and rewarding employees involved in the improvements

7 Consolidating improvements and producing still more change

- Using increased credibility to change systems, structures, and policies that don't fit the vision
- Hiring, promoting, and developing employees who can implement the vision
- Reinvigorating the process with new projects, themes, and change agents

8 Institutionalizing new approaches

- Articulating the connections between the new behaviors and corporate success
- Developing the means to ensure leadership development and succession

Figure 4: The eight steps to transforming an organization
Source: Adapted from HBR (2007)

responsible for developing a future vision that is both easy to communicate and which appeals to customers, stockholders, and employees. «Without a sensible vision, a transformation effort can easily dissolve into a list of confusing and incompatible projects that can take the organization in the wrong direction or nowhere at all» (Kotter 1995 p.62). While the vision is created to help direct the change effort, strategies must be developed accordingly that outline how the vision can be achieved. Kotter maintains that if you are unable to communicate the vision in five minutes in a way that generates understanding and interest, then it is not yet comprehensible enough. This transfers to stage four which is about communicating the vision to constituents. Communication is the key to rooting the change process in an organization, and all channels for communication must be utilized to their potential. Another important aspect is to 'do as you preach'; i.e. that the guiding coalition must ensure that their behavior is in congruence with the outspoken vision and accompanying strategies. If the coalition fails to act accordingly they risk undermining the communication efforts.

As the process progresses Kotter suggest in step five that others outside the coalition should be included through empowerment. They should be encouraged to take action towards the vision. In this stage of the process, meeting resistance to change is likely. Obstacles to achieving the vision should be dealt with regardless of whether they are created by people or the organizational structure. Getting as many people as possible on board with respect to the transformational efforts is likely to ensure a better outcome. Planning for and creating short-term wins, which is the sixth step, is one way of building credibility for the change effort. Any form of improvement that is a result of the current effort should be made visible, as they constitute compelling evidence. The strategy for achieving the vision should include the types of short-term goals that can be considered and portrayed as improvements in the right direction. «Commitment to produce short-term wins help keep the urgency level up and force detailed analytical thinking that can clarify or revise visions» (Kotter 1995 p.65). But those guiding the transformation process should be weary of declaring victory too soon. Step seven is about utilizing the short-term wins for producing more change. As they potentially have increased the efforts credibility they can be used as arguments for starting new projects on the path to achieving the vision. Victory can only be declared when the changes are anchored in the organizations culture, which is step eight. «Until new behaviors are rooted in social norms and shared values, they are subject to degradation as soon as the pressure for change is removed» (Kotter 1995 p.65). Two things are important in achieving this anchoring. One is articulating the connection between the new behaviors and improved performance, the second is ensuring that the next generation of management actually personifies the vision that set the stage for the transformation in the first place.

The main contribution of Kotter's work is providing managers with a step-by-step approach that can be utilized when managing a transformation process. Kotter argue that understanding that transformation is a process that passes through several stages in sequential order, and also realizing that potential pitfalls accompany each stage, is pivotal for success in transformational efforts.

2.5. The interface between business model innovation and change management

Business model innovation is all about the reconfiguration of existing activities, as a business model is defined in academic literature to be an activity system. And as we have just established; reconfiguration is in essence a transformation process. In the authors review of available literature little has been found on the linkage between change management and business model innovation. This sub-chapter is an attempt to start bridging these academic fields.

In describing the business model innovation process Chesbrough (2010) highlighted organizational

leadership as a vital aspect. Doz and Kosonen (2009) also found top management support to be of much importance in facilitating business model change. These points are very similar to Kotter's proposed step of creating urgency to kick start the transformation process. Further business model innovation is much about sensing the external environment for changes and opportunities. Kotter describes this sensing as the foundation for creating urgency around a subject that triggers change.

Experimentation is often the proposed process for carrying out business model innovation. Chesbrough and others argue that planning how a new business model should look is infeasible and that action is the only route to achieving the goal. What they are leaving out, and which Kotter brings forth, is the necessity for planned experimentation. As business model innovation can be viewed as a transformational effort, planning the process for carrying out the experimentation should still be done. Also communicating with and anchoring the new idea with stakeholders is an area that lacks emphasis among business model innovation proponents, but which Kotter deems vital to the success of the process.

What business model innovation academics have not focused on is the complete process from start to finish. They have only outlined some of the prerequisites for venturing into it. Reviewing seminal work in both academic fields in parallel indicate that proponents of business model innovation could very well draw on knowledge from the field of change management in describing both the execution and managing of the innovation process.

2.6. Application of theory in practice

The academic theories presented in this chapter are conceptual in nature and for some it might be difficult to relate to them in the real world. In this sub-chapter we provide some suggestions as to how real world application can be achieved.

The lack of a common definition of a business model effectively complicates any discussion on the topic. Adhering to a comprehensive framework that goes well beyond a defining statement should facilitate a management team when evaluating their current business model and new potential models. We argue that utilizing Osterwalder's business model canvas is one such approach. Using the framework as a foundation for discussion ensures that all participants speak the same language. Additionally the business model canvas functions as a tool for discovering the interdependencies of a firm's activities.

Today's situation and current business models – It is only when management has established a holistic understanding of the current business model they are deploying that they can start to evaluate how it is aligned with the current industry situation in competition with other business models. Viewing all the elements of the business model in parallel – and alongside a firms outspoken strategy – is a good way of discovering internal inconsistencies with respect to the activities a firm is carrying out.

Complications in the industry – All industries are prone to change and complications that accompany industry development with regards to their current market position. Monitoring influential elements in the surrounding environment is one way of uncovering the drivers of change (Voelpel et al. 2004). Further the business model canvas can be used in this process to evaluate how potential industry complications will affect current activities. Identifying the main driver of change could help in establishing a business model element as the epicenter for reinventing the business model to cope with the complications.

The future situation and related business models – Entering into a business model innovation process should be a response to changing strategic circumstances (Johnson et al. 2008). Two important aspects of this process are experimentation and organizational leadership. Pre-deciding on a business model that will ensure alignment with a changing environment is not

feasible as the response to the new model must be tested in the market place (Chesbrough 2010). Change management literature also emphasize that an innovation initiative should be viewed as a process, and defines a series of steps to be followed under the leadership of strong management on the way to success (Kotter 1995).

Industry development in the next five years – Predicting the future industry development is not an exact science. Positioning for further change is about continuously looking at opportunities for business model reinvention (Voelpel et al. 2004), and also willingness to potentially open the business model and sourcing input from external agents – as incumbents are not always the quickest to realign given internal resources (Chesbrough 2007b).

What we argue here is that theory indeed provides management with useful tools when pursuing new industry opportunities in the face of change. Theory can help in defining a common language for discussion of business models, obtaining a holistic view of the current industry situation, and help management in planning and implementing activities for business model realignment.

Methodology

3

This master thesis builds upon the initial knowledge and understanding that was acquired by the authors during the writing of our project thesis *New business models in the media industry* (2010). This chapter outlines our approach for enhancing that initial knowledge, developing a deeper understanding of the Norwegian TV-market and to answer the given problem statements.

We adopt the definition of a method as provided by Vilhelm Aubert and given in Hellevik (1991 p.14):

> *«A method is an approach, a means for solving problems and to generate new knowledge. Any mean that serves this purpose, is considered a method».*

Three distinct methods of data collection were deployed as a means of garnering further knowledge on which to base the discussion and conclusions of this thesis. Firstly a review of available academic and practitioner literature was carried out, with an emphasis on the latter. Thereafter we attended an industry conference and also carried out interviews with representatives from key players and government officials. Lastly the authors where given access to third-party data from a student survey and focus group study that was used for extracting further insights into the consumer side of the industry.

A complete account of sources can be found in the References section and are of the following types:

- Academic articles and books
- Industry practitioner white papers and reports
- Interviews
- Industry conference
- News articles
- Other third party data

3.1. Academic and practitioner literature review

The literature reviewed can be divided into two distinct categories: academic and practitioner literature.

Academic literature

The selection of academic literature has been highly influenced by the choices made during the work on the aforementioned project thesis: *New business models in the media industry* (2010). The intention of completing that first literature review was to utilize the findings also in the master thesis. The review as presented in this paper is a refinement of the original literature review and also includes some new theoretical work from the academic fields of business model innovation and open innovation. This is to gain insight into ways of operationalizing the process of business model innovation.

The aim of this master thesis is to provide some suggestions as to how industry actors can approach business model innovation, thus literature from the

fields of change management and organizational development was explored. The result of the refinement and additional literature review culminated in the sub-chapter: The interface between business model innovation and change management, where parallels are drawn between the necessity of changing a business model and managing that change process.

Practitioner literature

The practitioner literature reviewed ranges from white papers on technological implementations in the industry to survey-reports on consumer behavior. The purpose of this part of the review was to obtain information on both the current situation in the TV-industry as well as thoughts on the future development of the industry. Thus the practitioner literature has been the foundation for outlining much of the situational description given in chapter 4.

3.2. Interviews

The problem statement that this thesis seeks to answer is qualitative in nature. The analysis performed in answering it follow an inside-out approach, and this warranted a series of qualitative interviews to be conducted in order to build a broad understanding of the industry. In total seven interviews were completed with industry professionals and governing authorities.

The interviews are divided into sections based on the type of supply chain actor who provided the data; i.e. distributors, content providers (broadcasters) and government authorities. The topics explored in each interview were largely the same, but tailored to emphasize the view on the industry from the perspective of the position of the interviewee's company in the supply chain. Topics included among other subjects current and future business models, industry trends, consumer behavior, complications, and rights management.

Qualitative approach

All of the interviews were carried out as semi-structured as described in Bryman (2008 p.438). The authors prepared unique, but very similar, interview guides for each of the interviews. The aim of utilizing a guide was to ensure that the most relevant and central topics were covered, and little emphasis was put on the order in which the questions were asked. After having tried the semi-structured approach in the first couple of interviews, the authors felt that information could be extracted in a satisfactory way using this technique and decided to continue with this approach. For the purpose of uncovering information relating to the problem statement of this thesis, this open form for interviewing provides the interviewee with some leeway and allowed us to gain insights that expanded beyond the interview questions. These insights were used in succeeding interviews to obtain further knowledge on the new topics.

The decision to complete the interviews by phone was a result of time and resource constraints as most of the interviewees were located in another city. We found this method to be satisfactory, based on the information we were able to extract and the fact that little information was lost in the process. According to Bryman the types of response one gets by conducting phone interviews seldom differs from in person interviews (2008 p.457). Our first interview was a combination of a video conference and a personal interview with two subjects, and the following interview was conducted by phone. The authors felt that both methods produced good results, thus interviewing by phone was deemed as an appropriate method for the remaining interviews.

Sampling

For the selection of potential interviewees our approach follows Bryman's (2008) description of purposive sampling. The sampling was strategic in nature and does not reflect any form of randomness. Interviewees were contacted based on their professional position within key companies in the TV-industry. Locating desirable interview subjects was done through researching companies the authors found to be of the biggest interest. The resulting sample consists mostly of high-level

executives or personnel from companies that are spread across the parts of the supply chain that are most central to this thesis. The sampling was ended when the authors felt that the industry had been covered in a satisfactory manner, and when the data collected was more of a confirming than a contributory nature.

Summaries

During each interview one person was responsible for taking notes while the other conducted the interview, and also taking some notes. Soon after interview completion, notes where compared and summaries generated. The comparison ensured inter-observer consistency (Bryman 2008). The summaries are provided as empirical research material within this paper. The summaries are structured as a mix of paraphrasing and citations put into context. For structural purposes all the interview material was sectioned into four categories within each summary. This structure has allowed the authors to more easily synthesize and compare the empirical data gathered from the different interviewees. The categories are:

- Today's situation and current business models
- Complications in the industry
- The future situation and related business models
- Industry development in the next five years

All of the interviews were carried out in Norwegian; therefore they had to be translated from Norwegian to English. In the translation of quotes emphasis was put on retaining the original meaning and thus they are not always recited on a word-by-word basis. The summaries were also returned to all the interviewees for validation and citation checking. This ensures high validity of the summaries.

3.3. Conference – DigitalForum

On Thursday March 31st 2011 top management from a series of content providers, distributors, media houses and other professionals with an interest in the TV-industry met at Digitalforum at Filmens hus in Oslo to discuss the topic *TV in Norway in 20xx*. The day consisted of a series of presentation followed by a panel discussion. The authors attended this forum and taped it as a part of gathering empirical evidence for this master thesis.

Qualitative approach

Taping the entire conference has allowed the authors to transcribe much of the presented material, and afterwards the material was analyzed in the same way as one would do with a recorded interview. This was a very time-consuming – but valuable – process as it ensures the validity of the empirical data. Also since the conference lasted for an entire work-day, the cognitive capacity of the authors would have been challenged if we were only to rely on notes taken during the individual presentations.

With regards to sampling, attending a conference represents a form of convenience sampling (Bryman 2008 p.458). At a conference the authors do not have the same opportunity to select the informants in the same way as with individual interviews. As the presenters at the conference represented many of the top players in the Norwegian TV-industry, we consider it as a good source for information.

Conference summary

The decision was made to summarize the conference as a whole and not based on the individual presentations. Through processing the recordings, the authors were able to discern a series of recurring topics that had been covered by many of the individual presenters. We found that these topics could be categorized into four overarching themes. These four themes have subsequently been used as a way of structuring and presenting the empirical data gathered, in a logical fashion. Combining the views of different presenters within separate themes serves the purpose of providing the reader with a complete picture of the presented information.

The themes that emerged follow here:

- Creating a ubiquitous television experience
- Handling on-demand alongside linear television
- Rapidly changing technology
- Finding a viable business model

In summarizing the conference all quotes, but those from Brian David Johnsen, are translated from Norwegian in an as exact manner as possible, but with emphasis on retaining the original meaning and not on keeping them accurate on a word-by-word basis.

3.4. Third party data

In working on this master thesis the authors were in contact with a student group enrolled in the course *TIØ4165 Marketing Management* at NTNU. The students were working on a marketing plan for Apple TV, which is one of the many Internet-connected devices that have emerged in the TV market place. During their work they had completed both a consumer market survey and a focus group study. In addition to a discussion about the television market with this group we were given access to their data-sets. This data provides insight into Norwegian consumer awareness and behavior with respect to TV-service products. A sub-set of the data was found useful for the purpose of writing this master thesis and has been included in chapter 5 as empirical evidence.

3.5. Evaluation of methodology

In order to evaluate our own approach to the study and research methods applied we rely on criteria put forward by Bryman (2008). These criteria are used to establish a level of trustworthiness for the research conducted.

Credibility

Establishing credibility of findings can be done through different techniques. One of these, which we have applied, is respondent validation. After the completion of the individual interviews summaries were written for inclusion in this paper, before the summaries were deemed appropriate for inclusion they were submitted to the interviewee for information and citation checking. This process ensures that the interviewee agree with the understanding, as the authors present it. In addition the fact that all of the interviews were conducted with individuals in higher level management positions should add to the credibility of the presented industry views.

Transferability

The scope of the paper limits the area of research to the Norwegian market, which has been covered in depth. This approach lowers the transferability of the findings to other geographical markets. However the authors imagine that markets with similar characteristics could experience similar development, and thus a certain degree of applicability of our findings. Though we do not make any claims to this form of transferability directly.

Dependability

The criterion of dependability is based on the idea that external agents should have the opportunity to audit the work completed by researchers. For the purpose of this paper we have not included interview transcripts, tapes or other notes that could be used in auditing, but we have stated how we selected interviewees, provided interview summaries, and a complete account of sources utilized. This should ensure that external agents can review our work to a satisfactory degree.

Confirmability

In this chapter we have outlined our approach to the research and accounted for the methods employed in collecting empirical data. Confirmability is also about ensuring that objectivity is upheld throughout the research work. We argue that completing respondent validation and extensive use of referencing throughout the paper should confirm for the reader that objectivity has been upheld. For confirmability purposes we would

like to point out that the chapter named *Aligning the Business Model* is in its entirety generated from the subjective viewpoint of the authors, based on the objectively collected empirical data.

Summary and what we could have done differently

The research performed by the authors themselves, which is the foundation for this thesis, has been conducted by applying a qualitative approach. As authors we feel that the problem statement we sought out to answer justifies this approach, but at the same time we acknowledge that results based on qualitative data only are hard to reproduce and that it thus is our responsibility to establish a high level of trustworthiness of the research. By accounting for our methodology, revealing all sources and validating interview summaries with the informants, we argue that a significant level of trustworthiness has been achieved.

As researchers it is dangerous to think that everything was done in the best way possible. In retrospect there are some things we would like to point out that could have been done differently and that could have strengthened our findings. We would have liked to follow up on several bits of information that was obtained during the individual interview sessions, and booking two rounds of interviews with each informant would have allowed a deeper exploration of certain areas of the industry. This could have been areas we were previously not aware of during the initial interviews, which were brought to our attention during later interviews. However, that approach would have risked interviewees to attribute a more negative attitude towards completing the interviews since this would require more of their time. We experienced some skepticism from interviewees with respect to how much effort the interview would require of them.

Additionally the self-imposed limitations on scope of the research led us to in large part disregard the advertising part of the TV-industry. Advertising revenue is integral to the supply chain player's revenue model, but was scoped out due to a consumer centric focus with regards to the TV-services offered by industry players. We could also have looked deeper into mobile technologies as an alternative for TV-distribution, but incumbent distributors do not seem to be deeply involved in mobile technologies. This – combined with the fact that these technologies are relatively immature – led us to not focus on this area.

Situation

4

The Norwegian Television Industry

This section will provide an analysis of the generic television market as most people know it, and an explanation of new services that we see emerging in the market place. We will also give a short introduction to the underlying technologies that are driving the industry change, and look at key trends affecting the TV-industry. Parts of the content in this chapter are taken directly from our project thesis *New business models in the media industry* (2010).

4.1. Industry in brief

Norwegian consumers have access to a large array of TV-channels through a myriad of different packages provided by distributors utilizing several different technologies. The national television market is dominated by three broadcasters who combined have a market share of 76 percent (Nordicom 2009). Distribution is dominated by four players with differing market penetrations. Distribution is mainly achieved through bundling content and selling subscriptions of these bundles to the consumers.

Three distribution solutions dominate the market today: namely digital over-the-air distribution, access through a physical cable infrastructure or via satellite. Television distributed over the open Internet is the youngest service and is seen as a candidate for ending the dominance of traditional distribution networks.

Unit of analysis

The scope of this paper limits the analysis of the TV industry to professionally produced video content delivered to the consumer wherever he is, for immediate consumption on a suitable device. We have identified two distinct distribution models and two network models aimed at this market. They differ in which key attributes they offer the consumers and how they are capitalized. We will try to provide an account of the impact increased adoption of particular models will have on existing players in the industry, and whether the new models are likely to gain much traction with the consumer.

We will focus on the following distribution models:

- **Broadcasting** – time scheduled TV
- **On-demand** – time invariant TV

We will also focus on the following network models:

- **End-to-end controlled networks** – content distributed using over-the-air, satellite or physical networks that offer dedicated end-to-end capacity, also called managed TV
- **Best-effort networks** – content distributed over any open network that do not offer dedicated end-to-end capacity

We will concentrate on how the distribution of TV may move from traditional networks to Internet based networks. This potential evolution is dependent on how consumers relate to the underlying technology and the new attributes they compete on. Mobile transmission is mostly disregarded in this analysis in

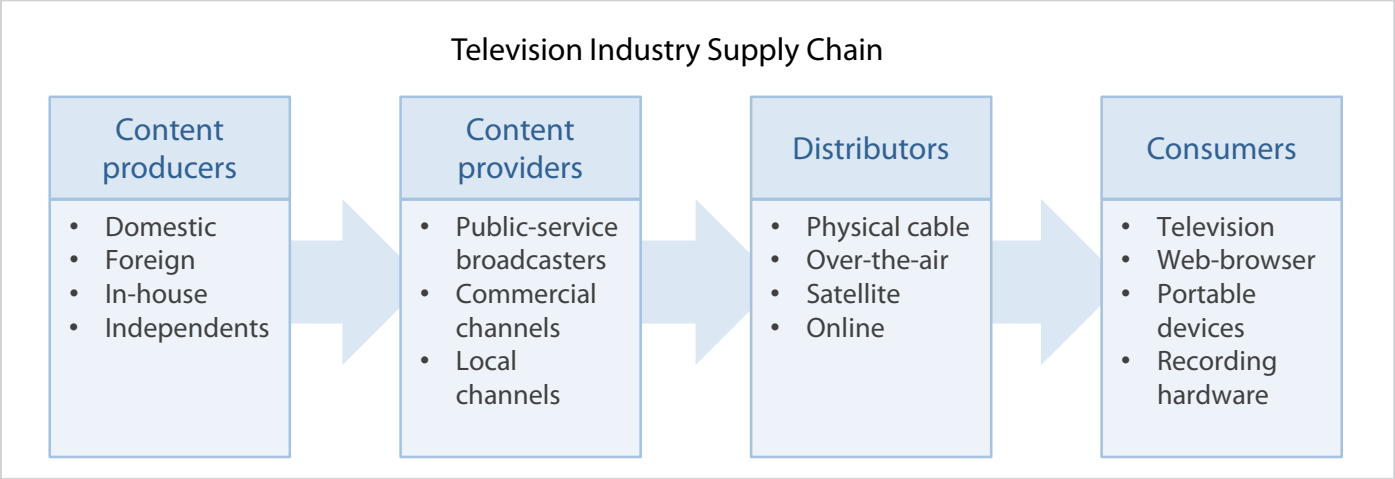

Figure 5: Simplified TV industry supply chain

an attempt to reduce the scope of this report, even though we see mobile transmission as an important part of the long term future of the industry. We also mostly disregard video services based on consumer generated content – such as YouTube – because we view these services as complementary services to traditional television and not direct substitutes.

Supply chain configuration

Figure 5 shows a simplified model of the supply chain players in the television industry. The focus here is on content creation and delivery, not supporting or auxiliary activities. The depiction does not show intricate ownership interests that overlap the different supply chain stages or the underlying infrastructure that enables consumption of television programming.

Content producer

Production of content is done by a large array of actors, from independent production companies to broadcasters. Sourcing of that content in the next supply chain stage depends on the broadcaster's business model, content requirements and budgets.

Content provider

Providers of content are often carriers of the brand names within the industry and they are often state owned or owned by larger media conglomerates. They are also usually the rights owners of content. Broadcasters are within this category, and their decisions includes which platforms they want to support, what content is to be made available on each platform and what revenue capture models they deploy. We also see broadcasters who forward integrate into distribution, such as NRK and TV 2 who own NTV and RiksTV together with Telenor. There are also several important foreign content providers that affect the Norwegian television market through their position as licensors.

Distributor

Distributors of television content come in many shapes and forms. They have traditionally been most easily divided into groups based on the technology they use for distribution. Each technology allows for different service offerings and has different degrees of market penetration. Distributors sell access to content offered by content providers, either singularly or most commonly in bundles, with an option of including value-adding services. The term distributor is used consequently throughout the paper, but in industry literature the term operator is also frequently used. The term operator illustrates that the firm often owns and operates their own network infrastructure, while the term distributor can be used more broadly.

Consumer

Traditionally consumption of TV content was limited to a living room on a TV-set. Changes in technology have now brought television content to several new terminals such as computers and portable devices. As

consumers are altering their behavior as a result of these technological changes, we expect them to be among the most important drivers of business model changes that can have ramifications for the different supply chain players.

Key players in the industry

The Norwegian television history started the fall of 1960 with TV-channel NRK's first broadcast. In its infancy the Norwegian television industry development pace was rather slow. NRK, who is a state owned public service broadcaster, remained the only broadcaster until TV Norge launched as a commercial channel in late 1988, followed by TV 2 in 1992. These three remain the top broadcasters on the Norwegian market despite a rapid increase in number of players over the last decade (Nordicom 2009). Table 2 shows their respective market share for all channels in their portfolios.

With regards to distribution the market is mainly dominated by four large players, where the Telenor owned Canal Digital is the biggest player by far at 41 percent market share (Table 1). All of the top distributors carry all of the channels that enjoy the biggest market share in viewing time, thus this is not a differentiating factor in acquiring and retaining customers. When it comes to niche channels the story is somewhat different, and they can be a point of differentiation for some consumers.

It is important to note that the different distributors operate on separate end-to-end controlled proprietary networks. Canal Digital operates both a cable and a satellite network, Get operates a cable network, RiksTV is the sole provider over the national digital terrestrial network, and Viasat operates their own satellite service. Lyse who is the fifth largest distributor operates an end-to-end IPTV solution over their fiber network. This is a technology that they have licensed to several other small companies that also distribute TV over fiber in their local areas, and which has gained traction with consumers over the last couple of years as the service often is bundled with a high-speed Internet-connection.

Distributor	Market share
Canal Digital	48 %
Get	18 %
RiksTV	14 %
Viasat	8 %
Others	12 %

Table 1: Distributor market share defined as percentage of connected televisions
Source: NPT (2010a)

Key industry figures

The average amount of time consumers spend in front of the TV has increased by almost 50 percent over the last two decades (Figure 6), reaching a little more than 3 hours daily by 2009. The top two channels NRK1 and TV 2 have enjoyed a significant amount of the viewing time spent by consumers for the entire period. As total consumption has risen and the viewing time on the top two channels has decreased slightly the evidence indicate that new niche channels are gaining market share. This is also in accordance with statistics found in Nordicom 2009.

Research carried out by TNS Gallup (2010) indicates a slow but increasing movement by consumers towards watching time-shifted TV. Even though time-shifted viewing only constituted 2.7 percent of all viewing in 2010, the increase was close to 50 percent from the previous year. Among consumers who own a PVR and thus have the option of digitally recording TV-programming in a consumer friendly fashion, time-shifted consumption accounted for 5.9 percent of their viewing time, up 20 percent from 2009. Even

Content provider	Market share
NRK	38 %
TV2	29 %
TVNorge	9 %

Table 2: Content provider market share defined as percentage of total viewer time
Source: Nordicom (2009)

though the total amount of time-shifted viewing is still relatively modest, the numbers indicate that consumers are starting to embrace this form for TV-consumption.

4.2. The shift from linear broadcast to on-demand consumption

In recent years new technological solutions have triggered new service offerings that have allowed the consumer to take more control over his consumption. Specifically consumers can now pick out content of interest to them, at a time of their convenience. This development has gone through several phases in the music industry and we are now seeing similar development within television. As the Norwegian market is just starting to move evidence of the direction can also be found by looking to foreign markets. These subjects will be addressed next.

The difference between linear and on-demand distribution

Broadcasting of television content has been the standard distribution form for television since television was introduced to the market. This involves sending one signal that can be received by multiple viewers simultaneously. This has advantages since it scales really well, and the infrastructure can support millions of consumers. On-demand distribution on the contrary involves sending one individual content stream to each connected user. This does not scale nearly as well as broadcasting, but it has the advantage that each user's content stream can be adapted to that user's needs. The different content streams do not have to be synchronized, and thus the individual users can watch different parts of a program or different programs altogether. The basic difference between broadcasting and on-demand distribution is exemplified in Figure 7.

The transition from linear broadcast to on-demand consumption affects many different areas of consumers' TV-experience. The traditional TV-service let users choose between multiple pre-programmed channels, but they have to adjust to the channels' schedules. If the user begins watching a channel earlier or later than

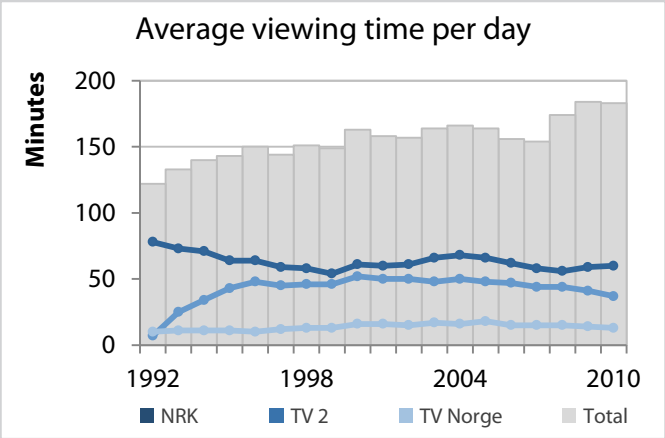

Figure 6: Average viewing time per person per TV-channel
Source: Medienorge (2010)

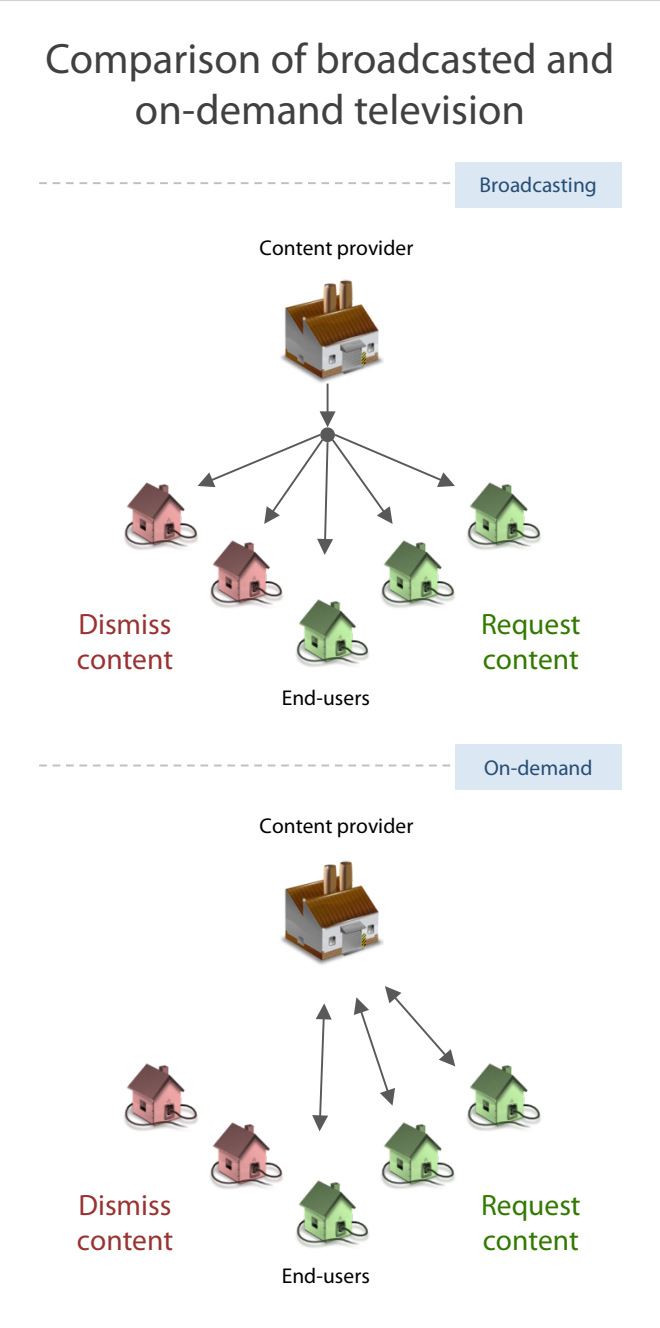

Figure 7: Comparison of broadcast and on-demand TV

the program starts, he must either patiently wait or accept that he missed the beginning of the show. If no channels currently broadcast a program the user wants to watch, then he has nothing else to do than to come back later. The television experience based on on-demand consumption is on the contrary giving the user control over the schedule. The consumer can begin to watch a program at his convenience, and he has potentially indefinite amounts of content at his disposal.

A complete on-demand value proposition clearly gives the consumer more freedom of choice than traditional linear broadcasting. This is, however, not always an advantage. More choice requires more decisions, and for a user that wants to watch television to relax, this may be counterintuitive. Several users value to get suggestions for programs to watch from editors, instead of having to find every program to watch by themselves. An increased degree of freedom may also introduce a more complex user interface. This may not be a problem for tech-savvy consumers, but many users have enough problems getting today's equipment to function properly, and do not want additional complexity. This means that the value proposition that is designed to put the user in the center may for some lead to a decreased quality-of-experience. There are also currently technical challenges hindering on-demand services to be fully functional, and we will discuss these challenges in detail later in this report.

Influence from the music industry

The television industry is often compared to the music industry when it is analyzed, because the music industry has gone through many of the same stages that the television industry is expected to go through over the coming years. Music has been distributed on gramophone records, cassette tapes and compact discs for decades, in addition to being pushed on different radio stations. This gradually started to change in the late nineties with peer-to-peer networks such as Napster. Consumers began to download pirated copies of the music, and this has been attributed both to increased convenience as well as a way to avoid costs for the users. Eventually the industry stopped focusing on fighting off piracy with lawsuits, and instead began to compete on convenience and quality. As iTunes (Apple) and other electronic music retailers began to offer songs for download, consumers got easier access to music. The highly popular music download services have later been substituted by even more popular streaming services such as Spotify and Wimp. The average Norwegian consumer has not significantly changed his or her consumption habits between 2001 and 2009, and the average daily music consumption has stayed the same throughout that period (Bjøndal & Gedde et al. 2010). The way users consume music, however, has changed. The volume of music sold through streaming passed the volume of music sold through download in Norway as early as 2008, and in 2010 the total number of music units sold through streaming services passed the number of units sold on CD as well (Bjøndal & Gedde et al. 2010). This was just two years after Spotify was officially launched in the Norwegian market, something that shows that users welcome convenient solutions and new value propositions that make it easier for them to consume content.

Foreign over-the-top services

Even though over-the-top services for providing movies on-demand have existed in the Norwegian market for a couple of years, the development of these services have come a lot further in for example the US. Netflix and Hulu are two such services.

Netflix started out in 1997 as a DVD-rental company who served their customers through sending them movies by mail. After many years of significant increases in their subscription base Netflix launched their online service for streaming movies over the Internet to the consumer's computer in 2007. Their revenue model for the online service is based on members paying a low monthly subscription fee for access to an unlimited amount of movies (Netflix 2011). Soon after the initial introduction of the streaming service Netflix set their aim beyond the computer, namely

the living room TV-set. During 2008 Netflix teamed up with several large hardware manufacturers of TVs and TV specific devices and soon after the first TVs and devices with an Internet connection and Netflix software emerged in the market place. This move has ensured a Netflix a position on the main screen consumers utilize for TV consumption, and they are now in direct competition with distributors' own movie rental solutions. Today the Netflix movie service can be accessed from a myriad of Internet-enabled devices such as the Nintendo Wii, Sony PS3, Xbox 360, Apple iPad, and TVs from LG, Panasonic, Toshiba, and Sharp. In 2010 Netflix's consumer base increased with 63 percent from the previous year, passing 23 million subscribers (Netflix 2010). Recent news bulletins also suggest that Netflix is looking to move into TV-programming (TechCrunch 2011).

Hulu was announced in 2007 and launched as a website offering free streaming of TV shows and movies in early 2008 (Hulu 2011a). Among the initiators of Hulu one can find NBCUniversal Media, a media and entertainment company that owns and operates both American television networks and a number of cable channels. We believe that this move was purely experimental for this TV-industry incumbent, but it has proven to be very successful. Through Hulu.com consumers can stream video directly to the web browser from a wide range of premium content producers. The content has often recently been aired on broadcast TV, but the web site also offers backlog videos. Hulu.com is free to use but advertisement is played intermittently. After a successful incubation period providing a free to use service, Hulu launched the Hulu Plus subscription service towards the end of 2010. While the free service only covers a limited amount of recently broadcasted content – in addition to older seasons – the Plus service gives the consumer access to all of the current season episodes from a wider array of shows. Some of the shows are even shown in HD quality. Despite the short time period since its launch, the Plus service is already looking at hitting one million subscribers in 2011. In the same way as Netflix, Hulu have also moved from a computer centric service to providing the service directly to the TV-screen. This has been done through extensive partnering and Hulu Plus is now available on Sony and Samsung TV's, connected set-top-boxes, gaming consoles, and mobile devices like the Apple iPad (Hulu 2011b).

These services provide strong evidence as to in which direction the TV-industry is moving abroad. The fact that both companies have been able to partner with large industry players and that one even was initiated by a company that it potentially could be in competition with, underscores the belief the industry has in that on-demand consumption will be a prominent feature going forward.

4.3. Networks and infrastructure as technological enablers

What we are seeing in the TV-industry today are two categories of networks that are used for distribution of TV-signals. These are end-to-end controlled networks and best-effort IP-networks. Each category can be deployed using several different underlying network infrastructures (Table 3).

The nature of the different infrastructures being used differentiates them with regards to what types of services that can be delivered over them. This is primarily due to the fact that some infrastructures support only one-way communication, while others support two-way communication. A defining characteristic of two-way communication infrastructures is that

Network type	DTT	DTH	Cable	FTTH	xDSL	Quality-of-service
End-to-end controlled networks	Yes	Yes	Yes	Yes	Yes	Guaranteed
Best-effort IP networks (Internet)	–	–	Yes	Yes	Yes	Not guaranteed

Table 3: Comparison of end-to-end controlled and best-effort networks and related infrastructure

they support IP-traffic, but only when the IP-traffic is managed in an end-to-end environment, quality-of-service can be guaranteed. Two-way communication is essential when the customer is to be able to interact with his TV and take more control over the content he is consuming, i. e. through opting for on-demand consumption.

Several of the infrastructures use fiber in their backbone. When fiber is not extended all the way to the user's premises, the signal is re-code at some node in the network from IP to a suitable signal for the infrastructure which is used to connect consumers. An example of this is modern cable networks, which are a hybrid between fiber and coaxial networks (HFC). Fiber is used for a transporting the signal part of the way to the end consumer before it is turned into a signal for end distribution to consumers over coaxial cables.

Overview of end-to-end controlled network infrastructure

The different types of infrastructure that are deployed in offering end-to-end solutions for TV-distribution will now be explained in detail. Figure 8 is a snapshot of the market share of the different networks for delivering traditional TV-services as of 2010. Table 4 is a comparison of the different network infrastructures providing end-to-end distribution.

Digital terrestrial television (DTT)

Digital terrestrial television is based on wireless transmission of broadcast TV-signals over radio frequencies to be received using an antenna. This is a one-way communication infrastructure operated under the one-to-many scheme, where everybody receives the same signals. DTT is a technological development from the previous analogue network, which as of December 1st 2009 was completely switched off across Norway (NTV 2009). In Norway the DTT network covers 98 percent of all households (Sonneland et al. 2011). This gives DTT the position as the technology with the highest penetration in the Norwegian market in terms of accessibility. NTV is the owner of the DTT infrastructure in Norway, while the signaling is handled by RiksTV. Both NTV and RiksTV are owned on equal terms by NRK, TV 2 and Telenor (Sonneland et al. 2011). The Norwegian DTT network currently enjoys a 14 percent market share (NPT 2010a).

Given that DTT is a one-way infrastructure, it has a competitive disadvantage compared to many of the other technologies for distribution of TV-signals: The lack of a return channel from the consumer and back to the distributor makes true video-on-demand impossible. However, RiksTV offer push video-on-demand in their network. This is a service where on-demand content is pre-loaded on the consumers' set-top-boxes to allow simulated on-demand functionality. This may give the user some of the benefits of

Infrastructure	Two-way signal	Maximum capacity	Industry players
DTT	–	100 Mbit/s	RiksTV
DTH	–	Virtually infinite	Canal Digital Viasat
Cable	Yes	400 Mbit/s	Get Canal Digital
FTTH	Yes	Virtually infinite	Lyse (Altibox) Other power utility companies
xDSL	Yes	250 Mbit/s	NextGenTel

Table 4: Comparison of end-to-end controlled infrastructure types

video-on-demand, but the pre-loading normally takes a couple of weeks to complete (RiksTV 2010). Push VoD is also limited by the available storage space on the consumer's set-top-box, and can currently not contain more than approximately 100 movies at the time. Consumers will however benefit from the videos being downloaded already, which rules out potentially low streaming quality as a potential risk to degraded quality-of-experience.

Moving from the previous analog to a digital solution has had several advantages both with respect to picture quality, service quality, and with the ability to transfer a larger amount of channels in the same radio frequency spectrum that was previously occupied by analogue signals. The decision to switch to a digital technology was made to ensure a better competitive landscape in the TV-market, and especially to provide consumers without access to other TV-technologies a high quality service (NTV 2009).

In the Norwegian DTT network the current capacity is at 100 Mbit/s which equals 40-50 SD channels or 14-16 HD channels (Sonneland et al. 2011). In comparison to the other distribution technologies, this bandwidth capacity is significantly lower. The network employs the MPEG-4 standard for video compression, ensuring that it's capable of transmitting HD video signals.

Satellite distribution (DTH)

Satellite or direct-to-home signals are an alternative TV-distribution solution for those consumers who do not have access to a physical distribution like cable-TV. The term direct broadcast satellite (DBS) is often used interchangeably with DTH, but the latter has a broader designation. Like DTT it is a wireless solution, but satellite signals are directional and thus the satellite dish requires more careful positioning than a regular antenna. The satellite-TV is also prone to issues such as poor signals due to weather conditions. This makes quality-of-service harder to guarantee by distributors utilizing satellites for broadcasting TV-content.

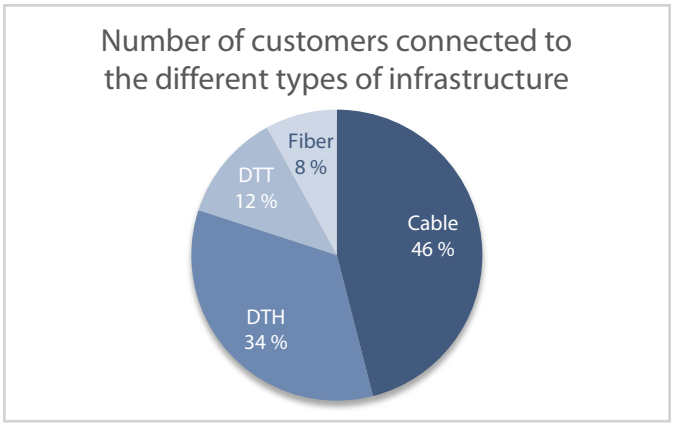

Figure 8: End-to-end controlled infrastructure market share
Source: NPT (2010b)

Satellite distribution is inherently a one-way communication platform when it comes to personal consumer applications of the technology. This severely limits the possibilities of this technology with respect to enhancing the interactivity aspect of TV-viewing. This also means that satellite distribution have many of the same limitations when it comes to true video-on-demand as the DTT network. In other countries push video-on-demand is offered by satellite distributors, but this offering does not appear to be available in Norway.

The two dominant players in satellite-TV distribution in Norway are Canal Digital and Viasat. They each operate individual satellites, and combined their services cover 85 percent of the Norwegian population (Konkurransetilsynet 2009). 34 percent of Norwegian households are today receiving their TV-services through a satellite network (NPT 2010b). With respect to the bandwidth capacity for transmitting TV-signals, this is virtually infinite in satellite distribution as it is only limited by the amount of transponders controlled by the distributor (Medietilsynet 2008).

Cable networks

Cable-TV is based on distribution of TV-content using physical coaxial cable networks. Currently this technology allows both analog and digital transmission of signals, and both the signal types are transmitted as radio frequencies over the coaxial cables. Analog signals are provided mainly as a complement to the digital distribution today: They are contrary to the digital signals not encrypted, and the user does not

need a set-top box to view the signal. The downside to analog signals is that they require more space and delivers poorer quality than digital signals (OCCAM Networks 2009). With digital transmission, the access to that content is regulated through the use of programming cards distributed to the different customers.

Cable transmission is based on traditional broadcasting methods. All available TV-programming is distributed to all the users connected to the cable network. Over time cable networks has evolved to support two-way communication. This is important because it allows IP-traffic to travel in the network. This gives cable distributors the option of also offering Internet-connections to their consumers and other best-effort type services that will be described in the next sub-chapter.

Currently an estimated 65 percent of households in Norway can connect to a cable-TV network (Konkurransetilsynet 2009), while the market share for cable-TV services is at 46 percent (NPT 2010b). Canal Digital and Get are the two dominant cable-TV players. They both own significant amounts of cable infrastructure, but cooperate with several local players in areas where they don't own infrastructure themselves. In total there are a little fewer than 1000 cable-networks in Norway (Sonneland et al. 2011).

The theoretical capacity of the modern HFC-networks that combine fiber and cable technologies is almost 5.9 Gb/s (Sonneland et al. 2011). But with the currently deployed DOCSIS 3.0 standard the downstream capacity is limited at about 400 Mbit/s.

Fiber-to-the-home networks (FTTH)

When a fiber network is utilized for end-to-end controlled TV-distribution the service goes by the name IPTV. In an IPTV-network content is transmitted as multicast IP-packets. This is opposed to the cable signal, satellite signal, and radio frequencies modes used in the other networks. Multicasting over IP allows IPTV service providers to mimic the broadcast TV-services that are familiar to the consumer. In proprietary implementations of the technology it can be used for end-to-end controlled TV-distribution.

In order for the consumer to subscribe to IPTV he needs to have an optical fiber cable extended all the way to his home, thus the name fiber-to-the-home. The costs of building out a fiber network are relatively high, while the maintenance should be much lower than for other network types. Due to the high installation cost, the direct investment costs are usually shared between the user and the distributor, either through a fixed connection cost or through a lock-in period.

Today only 15 percent of households can connect to a fiber network (Konkurransetilsynet 2009), and according to the FTTH Council Conference this figure will almost double – to 30 percent of Norwegian households – within 2015 (Finnie 2011). They also believe that Norway within 2015 will have the third highest penetration of FTTH in Europe, only beaten by Slovenia and Sweden. TV-distributors on FTTH-networks in Norway currently have a total market share of nine percent (Sonneland et al. 2011). The biggest fiber player is the energy utility company Lyse, who developed the proprietary IPTV platform Altibox. Lyse has licensed out this technology and entered into cooperation with 35 other Norwegian and Danish energy utility companies who now offer the Altibox services to their customers. In fiber networks the capacity is believed to be close to infinite.

Digital subscriber line (xDSL)

DSL stands for digital subscriber line, and xDSL is a group of technologies based on the use of existing copper telephone lines primarily for providing broadband Internet access. Over the years there have been great technological advancements with regards to utilizing the potential of the existing copper network. The data transmission capacity has increased in this ubiquitous network, and thus it is now also being used for end-to-end controlled distribution of TV-content.

When the copper network infrastructure first was built it was a governmental initiative and the national telecom provider was state owned. As the national telecom provider later became publicly traded and was

given ownership of the infrastructure, governmental regulation has been in place to ensure effective competition for telecom operators. One specific initiative in Norway has been so called local loop unbundling, meaning that all service providers must be given access to rent capacity in the network and offer their services to customers regardless of who owns the infrastructure.

The initial solution was named ADSL (asymmetric DSL) and had a transmission rate limitation of about 6 Mbit/s. We are now seeing widespread deployment of ADSL2 and ADSL2+, which is the second generation of this technology allowing for transmission rates up to 25 Mbit/s. The latest development is called VDSL (Very-high-bitrate DSL) and VDSL2 and promises even higher data transmission rates, up to 250 Mbit/s.

NextGenTel is one of the players who have taken advantage of the development in this technology and the unbundling of the network and now offers an IPTV-service over the xDSL network. Currently the total market share of xDSL distributed TV-services in Norway is less than one percent (Sonneland et al. 2011).

Best-effort television over IP-networks

While IPTV is a managed and proprietary end-to-end controlled distribution method for TV over an IP-supported network, there are also a lot of best-effort television services available in the market place. Best-effort television describes the use of an Internet-connection for distributing TV-content, and this connection is the only customer pre-requisite for enjoying best-effort television services. Contrary to with end-to-end controlled networks, quality-of-service cannot be guaranteed when offering best-effort television, since the Internet is not in itself a managed network. Currently this is the only option for offering true interactive on-demand TV. These services are often branded as over-the-top (OTT) services, because they are transmitted over the Internet.

The Internet can be accessed using all types of infrastructure that transport IP-packets, and thus best-effort television can be delivered across all the networks that support two-way IP-communication, such as xDSL, cable, and FTTx. Contrary to distribution of TV-content over managed networks – which is based on broadcast or multicast – best-effort television relies primarily on unicast technology were each consumer receives an individual stream of the content.

Several of the incumbent TV-distributors who operate their own end-to-end controlled network are offering best-effort video-on-demand services. A particularly popular value offering is movie rental directly on the TV. In this implementation of the services, the incumbents exploit the two-way communication capabilities of their networks to provide an interactive service alongside their distribution of multicast TV-programming. Since the content delivered in this way traverses the open Internet as IP-packets, the distributors are not able to guarantee the quality-of-service experienced by consumers using these services. They rather rely on the capacity of the Internet-connection that they offer the consumer to be good enough to provide a satisfactory experience when delivering video-on-demand over the Internet.

Well known OTT-services like TV 2 Sumo, Viaplay, and NRKs web-TV portal are also examples of best-effort television. Traditionally these services were aimed at users who were willing to use a computer to consume desired content on-demand, but evidence exist that they are now looking to expand to the TV-screen. TV 2 Sumo is for example now available directly on the TV for Altibox customers on the FTTH-networks.

The technology available for offering best-effort OTT-services have rapidly developed over the last couple of years. One such development is adaptive streaming, a technology for dynamically adapting the quality of the stream to fit with the capacity available through the consumers Internet-connection. With adaptive streaming the perceived quality of the service is better for the consumer, who is less likely to experience a choppy video stream. Another technological development has been the creation of content delivery networks (CDN), which is covered next.

Content delivery networks enable high quality video streaming

Challenges with high-bandwidth content distribution

Internet is based on a hierarchical structure. The proposition of the network is that every node should be connected to every other node, and Internet's hierarchical structure guaranties that this proposition can be held. Whenever a destination node is outside the current network loop, a packet will be moved up one layer in the hierarchy, potentially travelling all the way to the top node, before it moves down and towards its destination (Figure 9).

Even though each packet is guaranteed to be delivered to the recipient through the TCP/IP protocols, no guarantee can be made with regards to the speed or the quality of the connection. Increased distance between two nodes reduces the quality of the connection because of latency, packet delay variation and packet loss. Latency is the round-trip delay of a packet and is measured in milliseconds, but it still has a huge impact when sending large files. This is because the server can only send a limited number of packets before it must wait for an acknowledgement of the received packets (Akamai 2008a). Packet delay variation (often referred to as «jitter») is the variation in latency, and is an important measure for real-time applications such as video-on-demand. This is because a variation in delay impacts the necessary buffer size related to streaming. Packet loss refers to individual packets that are lost somewhere in the network. Even though the TCP protocol guarantees the delivery of packets, it does not guarantee the delivery of an individual packet. It will however discover that the packet is lost and retransmit it, but the need for retransmitting some packets reduces the overall throughput of the connection.

Increased amounts of data transferred through the Internet put a strain on the core network and Internet exchange points. This will in turn lead to increased latency, packet delay variation and packet loss, and can such affect the end-users' experienced Internet connection quality. Overall there are four primary areas where bottlenecks can occur that affects connection speeds on the Internet (PT 2011):

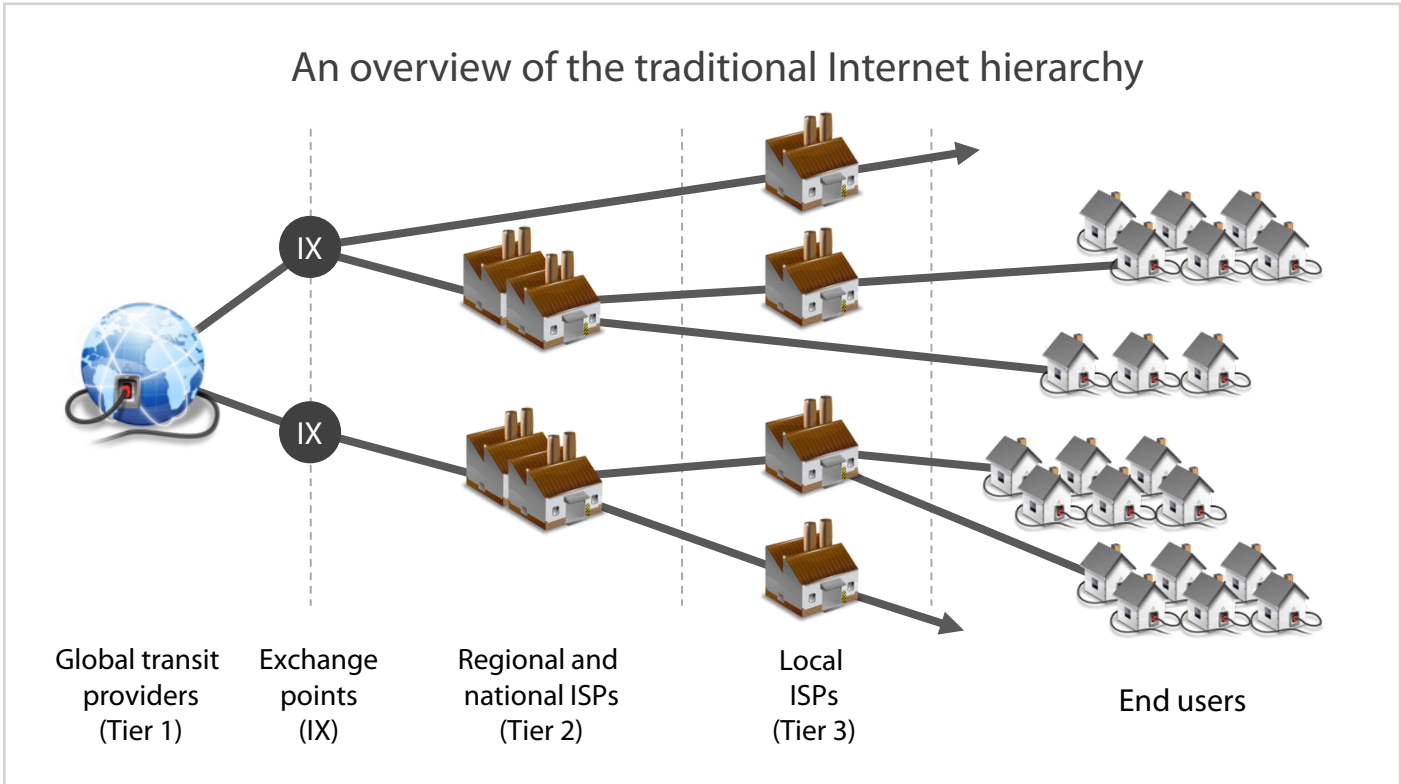

Figure 9: An overview of how the traditional Internet hierarchy is built up
Source: Adapted from PT (2020)

- The content providers' Internet connection
- Capacity in Internet exchange points
- Capacity in the core network
- The end user' internet connection

When the end-user requests content from a content provider, the content is normally served from the host of the content provider and transferred through the network. If the end-user experiences that his Internet-connection is inadequate, his last-mile connection speed can be improved if he upgrades his subscription. In the same way, content-providers can improve their throughput to the network if they get an Internet connection with better upload speed. On the other hand, neither the end-user nor the content provider can do anything with congestions or bottlenecks in the core network or in Internet exchange points. This is the issue that content delivery networks try to mitigate.

How CDNs help solve the challenges

To try to overcome bottlenecks and congestions in the Internet, content providers make use of content delivery networks. These are networks within the larger network that comprise the Internet, and they are built to effectively transfer large amounts of data to the end-users. The largest CDN-provider worldwide is Akamai, and they believe that «proximity to end users is still the single most important architectural factor in achieving the high performance necessary to deliver a quality end user experience» (Akamai 2008b p.1). An estimated 15 to 30 percent of all Internet traffic is transferred through Akamai's systems (Akamai 2011b).

To improve latency and packet delay variation – and to decrease packet loss – content is moved closer to the end-user in order to reduce the distance it has to travel to reach its destination. The content has to be duplicated on multiple locations in the network to make sure it is as close as it can be to as many end-users as possible. This infrastructure of duplicated content, coupled together with routing logic to fetch the closest copy, is primarily what comprises the content delivery network (Figure 10). Some CDN-players also have their own core network infrastructure, and thus they are able to route content outside of a congested Internet backbone. When the end-user requests

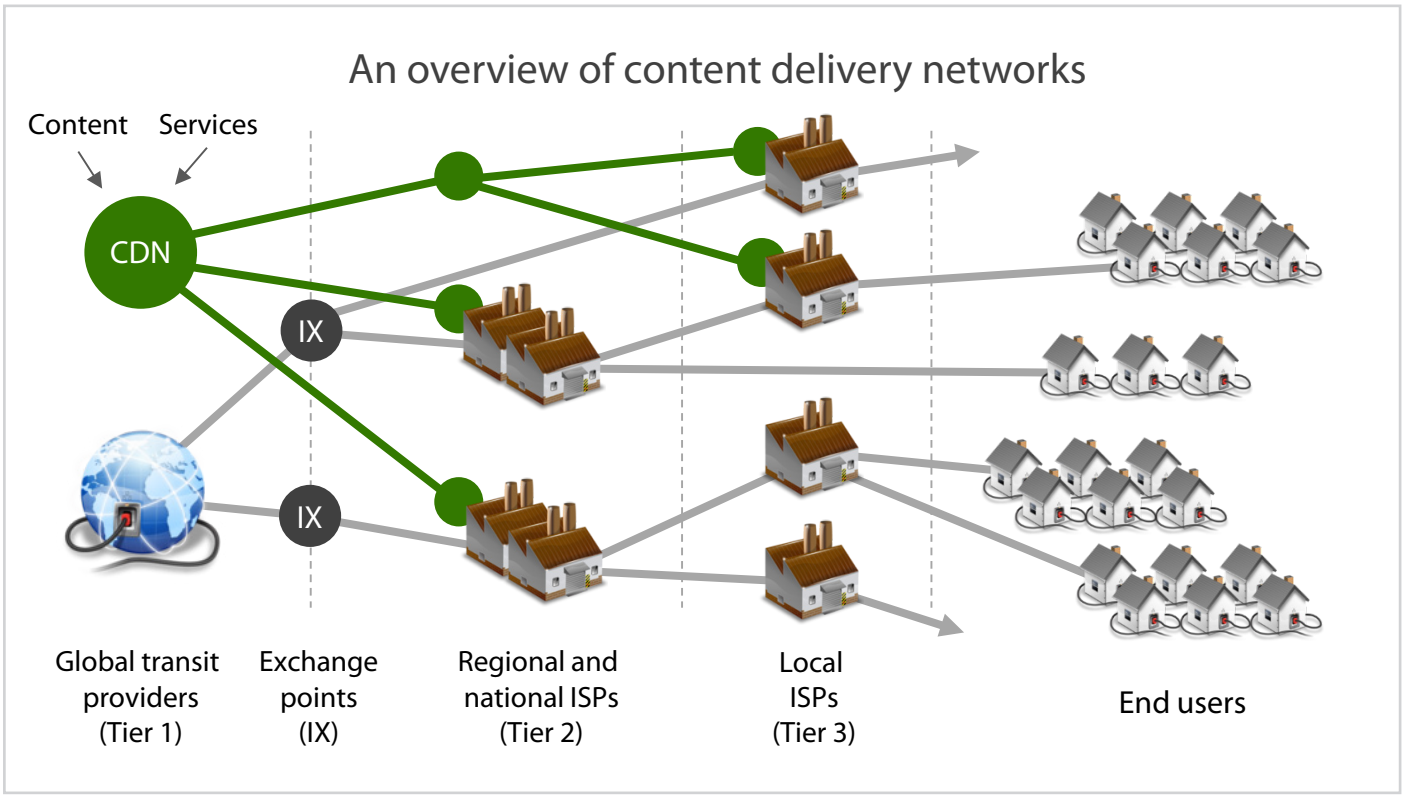

Figure 10: An overview of how CDNs are networks within the bigger network
Source: Adapted from PT (2010)

content from the content provider, the user is directed to the closest location where that content can be found, instead of the data being served directly from the host of the content provider.

Global CDN-players have the last decade aggressively built out their network of servers. Akamai – who was founded in 1999 – has close to 90 000 deployed servers worldwide as of March 2011 (Akamai 2011a). They have managed to do this by placing servers directly within the networks of Internet service providers. This has been a win-win-situation, where the CDN-players have been able to put out the servers for free and reciprocate by reducing the ISPs cost on their outbound traffic. The content is then transferred to the different servers when there is spare capacity in the core network, and thus the content is available when the end-user requests it. The content delivery network can also help to increase the quality of delivery of live content.

Content delivery networks deliver several indirect gains to other players in the eco-system as well. In addition to increasing the throughput of video and other data intensive services, CDNs remove much of this traffic from the Internet backbone. This decreases the pressure on the core networks and Internet exchange points, and thus reduces maintenance and development costs in these areas. CDN-providers are also in constant need to monitor their networks in order to deliver a sufficient service to content providers. To do this effectively they collect a lot of usage statistics. These statistics can be made available for the content providers, who can utilize it for instance to enhance their advertisement solution.

4.4. Multiple consumption devices as technological enablers

Watching TV in more places than the living room is being enabled by an increasing number of screens at the consumers' disposal. According to Cisco (2010) the compounded average growth rate of installed screen surface area will be 10 percent over the period from 2009 to 2014 (Figure 11). In Norway consumers are often in possession of both a computer and a smartphone in addition to their TV-set. Recently many have also acquired a new type of device, the tablet. Statistics from Finn.no, one of the largest web-portals in Norway, showed over 75 000 unique iPad visits during the month of January (Finn 2011). This is a device that just started selling in Norway in late November 2010, thus the numbers are a strong indication that Norwegians are quickly adopting the technology. At the same time Apple's iPad is just one of many tablet devices for sale in the Norwegian market.

All of the devices mentioned in the previous paragraph can be used for accessing TV-content that is available on the Internet, given that an Internet-connection is available at the time and place of use. This development is unique in the sense that content that previously only was available on the TV-set now can be accessed on a series of new types of devices. The mobile nature of several of these devices enables consumption in places where this used to be infeasible.

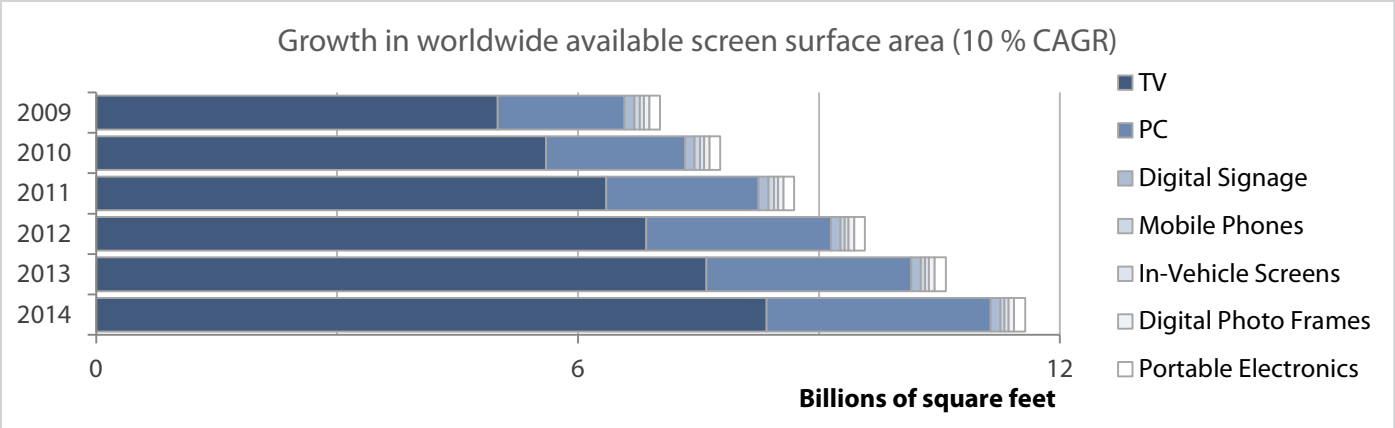

Figure 11: Growth in worldwide available screen surface area
Source: Cisco (2010)

Another development is the use of mobile devices simultaneously as TV is being watched. Consumers are using the devices as a means of being active in social media channels alongside their TV-consumption. TV has been described as an inherently social activity, and social media is now enabling consumers to actively engage with others in discussing the programs that they are watching. Hardware manufacturers are jumping at this opportunity by integrating social media applications in their TVs. Through Samsung's Smart TV functionality consumers are able to share their opinions on Twitter and Facebook while watching live broadcasted programming (Samsung 2011).

4.5. Current archetype business models

This sub-chapter will introduce the business model archetypes that are most common in the industry, so one can better understand the Norwegian television market. We will begin by introducing the dominant business model archetype in the industry, followed by two other archetypes that are present in the market today. Finally we will discuss the differences in revenue models that the different business models deploy and how they affect the business models.

The dominant business model archetype in the industry

There has only been one truly dominant business model in the television industry for years, and this is the traditional linear broadcasting business model archetype. The archetype has generally been deployed by firms who distribute over end-to-end controlled networks.

Linear broadcasting over end-to-end distribution networks

The defining characteristic of this business model archetype is the delivery of linear, time-scheduled TV-programming over end-to-end distribution channels. This archetype is the one we commonly find with traditional incumbent distributors, and it has been present since televisions were introduced to the market. Figure 12 shows a summary of this archetype.

The value proposition of this archetype is to give user access to linear, pre-programmed television. This

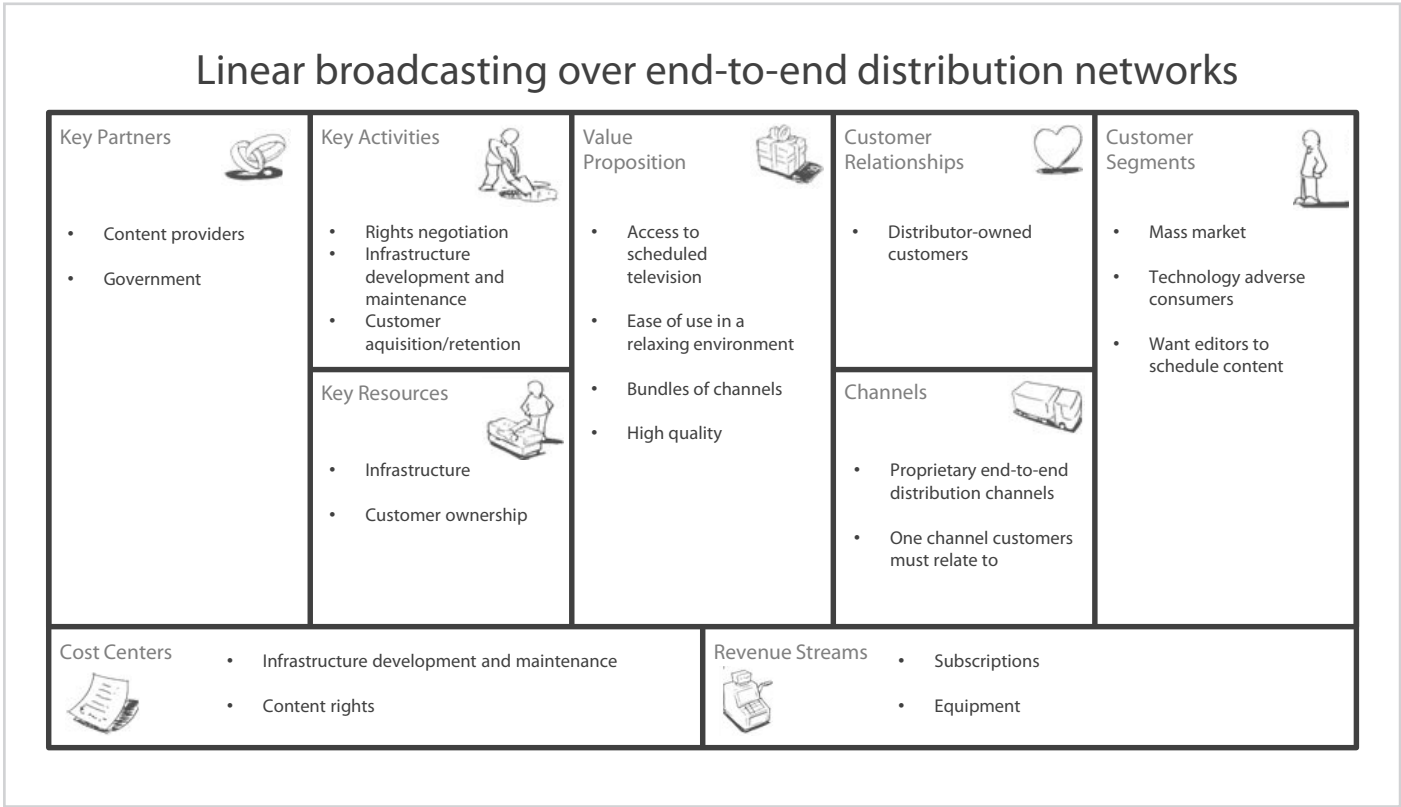

Figure 12: Linear broadcasting over end-to-end distribution networks business model archetype

enables the consumers to enjoy watching television in a relaxed environment. All they have to do is to tune into a channel, and they are ready to go. The channels are normally offered as bundles from the distributors, instead of giving users the choice of picking all the channels individually. RiksTV is an exception to this norm in the Norwegian market. The value offering is simple and easy to understand for consumers, something that makes it attractive to the mass market and to technically adverse users.

Broadcasted linear television is sent over proprietary end-to-end networks, which guarantees high quality-of-service. The distributors are the players in the market who owns the customer, and the customers only need to deal with distributors in order to get the complete television experience that can be delivered through this business model archetype.

The distributors are responsible for developing and maintaining the infrastructure which the television signals are transferred through, and they must also negotiate rights with content providers in order to be able to give their customers a satisfactory offer. These activities are also the ones that drive most of the costs incurred with this model. Another important activity for distributors utilizing this business model archetype is to attract new customers and to keep the customers' they have already got, because the number of customers is vital to drive value from this business model archetype. Revenues are normally captured through offering channel subscriptions and also by selling or renting out set-top boxes that are often required to decode the television signal.

Examples of distributors that utilize this business model archetype are Canal Digital and Get.

Other business model archetypes present today

Two other business model archetypes that are becoming prominent within the industry are push on-demand over end-to-end distribution and Interactive on-demand over best-effort distribution. These will be discussed next.

Push on-demand over end-to-end distribution networks

This business model archetype is an extension of the linear broadcasting over end-to-end distribution. The defining characteristic in addition to the archetype

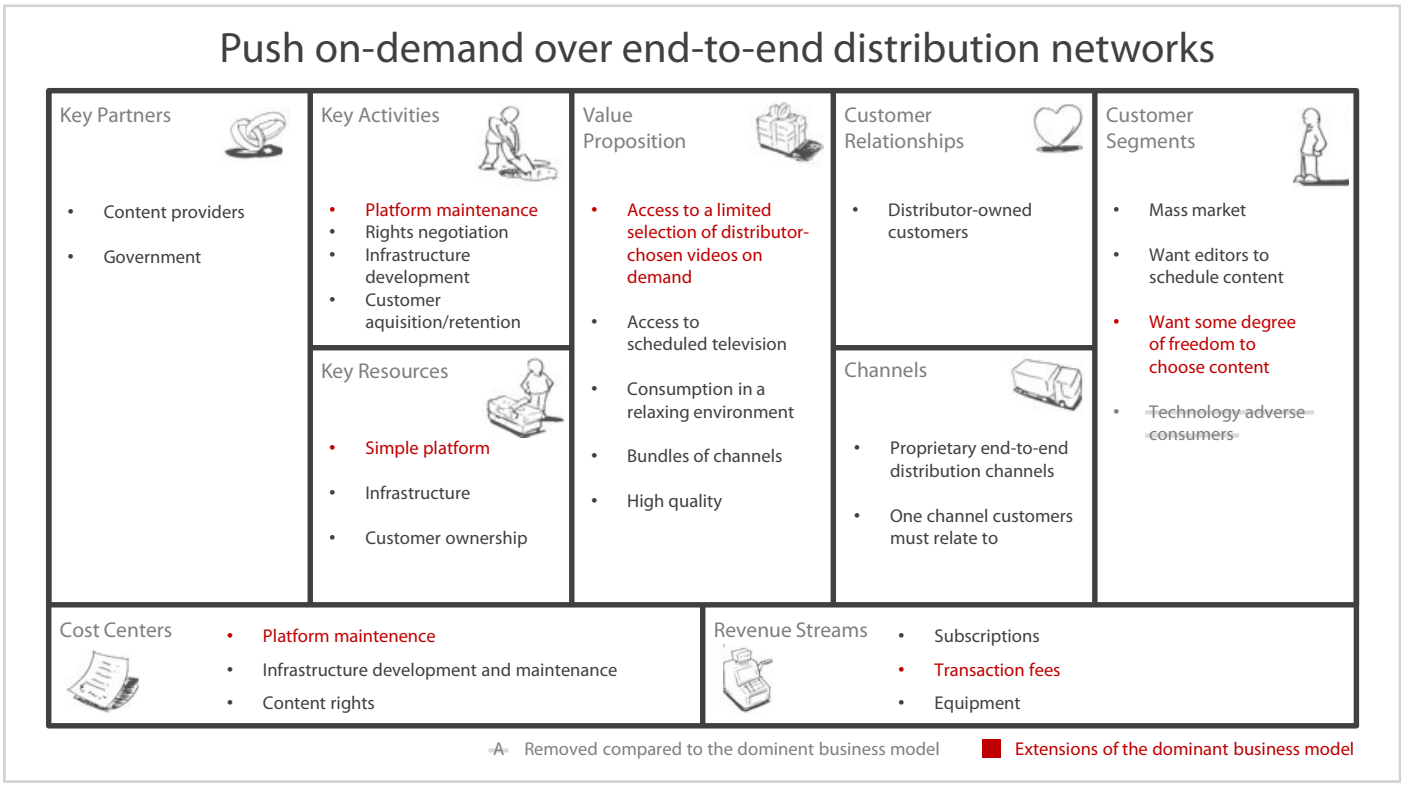

Figure 13: Push on-demand over end-to-end distribution networks business model archetype

model it extends is delivery of distributor-chosen pre-pushed content at demand over end-to-end distribution channels. This model is most commonly found among distributors operating over infrastructure that only support one-way communication such as DTT. A summary of this business model archetype can be found in Figure 13.

The most important addition this archetype has compared to the linear broadcasting archetype is the possibility for users to consume some content on-demand. A limited amount of pre-selected content is pushed to consumers' set-top boxes and stored there. This gives distributors that utilize this business model a value proposition that can compete on some dimensions with interactive on-demand services (which is detailed in the next sub-chapter). Even though consumers who disregard the introduction of on-demand services are just mildly affected by the changes, some users might meet a slightly deteriorated user experience. The consumers who use the new offer will on the contrary enjoy increased value with little added effort.

The most important effect the introduction of on-demand content has on the business model is that it requires the distributor to roll out an on-demand platform. This involves additional focus on rights negotiations as well as platform maintenance in the form of among other things keeping the video catalog up to date. On the other hand the platform will drive sales revenues, either through new subscription fees or through transactional fees where the user pays per video he watches. This means that this is most likely a good way of increasing the value delivered to the customer for distributors that cannot build a business model around true interactive on-demand content.

An example of a distributor that utilizes this business model archetype is RiksTV.

Interactive on-demand over best-effort distribution networks

The defining characteristic of this business model archetype is the delivery of on-demand content over best-effort distribution channels. This may include both time-shifted and real-time content. This model is currently most commonly found among disruptive services were content is delivered over the Internet independent of terminal, but it may also be used by distributors who deliver an IP-signal to a set-top box alongside their linear broadcasting. Figure 14 shows a

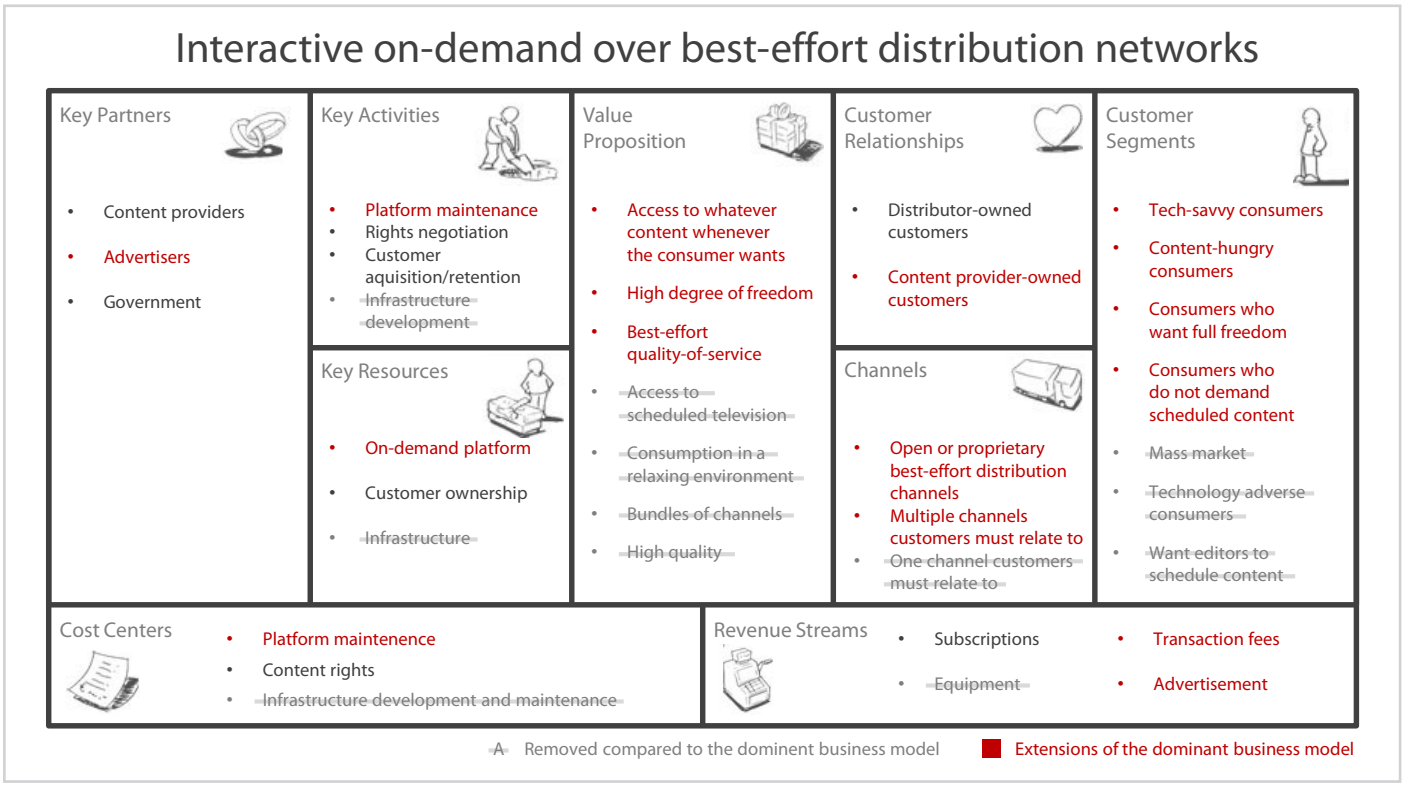

Figure 14: Interactive on-demand over best-effort distribution networks business model archetype

Altibox – broadcast-TV and the Internet combined

EXAMPLE 1

Altibox is the leading IPTV-platform deployed in Norway. Currently a consortium of more than 35 partners utilizes this platform in connection with their fiber optic networks for delivery of TV-services to more than 200 000 households.

In an attempt to start bridging the gap between broadcast-TV and the Internet directly on the TV-screen, Altibox recently rolled out «Fotballportalen» (Soccer portal). The aim of this portal is to let the user interact with the TV-service in a whole new way. One of the channels offered is a «live-center» that displays all the ongoing live matches simultaneously, and lets the user navigate to any single match by the push of a button. The experience is enhanced with interactive options like pushing a button to overlay current league standings, or jumping to view a goal scored in another match. The portal also includes relevant news and statistics, an archive containing entire matches – including highlights – and pre-edited summaries that allow the user to catch up on matches he was not able to watch live.

Altibox' solution combines the power of both broadcast-TV and the Internet to elevate TV to a new level.

summary of this business model archetype.

A business model focused around offering interactive on-demand content over best-effort distribution networks clearly puts the consumer in the center. This is the value-proposition that gives the consumers the highest degrees of freedom – where he can access whatever content he wants whenever he wants – but at the same time it can currently not guarantee the same quality-of-service because of the underlying best-effort networks. The user has to have a high speed Internet connection in order to access the content, but even that cannot guarantee the absence of congestions or bottlenecks other places in the network that may reduce the experienced video quality. A complete on-demand platform will also be more challenging and costly to handle, thus requiring more from the distributor that runs the platform.

An interactive on-demand platform is on the other hand a more complete offering compared to push on-demand solutions. The platform can support vast content libraries, since all the content is stored in the network and not on the users' equipment. This also means that the platform is more aligned with advertisement as a source of revenues, because up-to-date advertisements can be fetched from an ad-server and shown during the content playback. This gives the distributors more choice to select an optimal revenue model.

Examples of distributors that utilize this business model archetype are NetFlix and Hulu in the US.

The challenge with OTT revenue streams

The current implementations of the interactive on-demand over best-effort distribution archetype are utilizing several different revenue stream options. Some OTT-solutions offer all the content for free, some are supported by advertisement revenues, some deploy subscription services – both with and without advertisement – and some content is available on a transactional basis. All of these models are familiar from the world of traditional broadcast TV, but were they differ are on the amount of advertising displayed and

the price points. In most OTT-services the amount of advertising is significantly lower – if there even is any – and the prices for subscription are also lower. OTT-distributors can do this because they do not have to maintain costly infrastructure networks, but rely on the open Internet.

Figure 15 and Figure 16 are comparisons between broadcast-TV and online-video with respect to the amount of time consumers spend on watching advertising and the advertising value retained, respectively (comScore 2011, IBM 2009b). The numbers indicate that the advertising revenue per thousand viewers per episode is three times lower with current OTT-services. Additionally the time spent on watching advertisements is 3 to 15 times lower when the content is sourced via the Internet. For incumbents moving into the OTT-arena, these are figures that are much lower than what they are used to seeing in terms of advertisement revenues. This makes it infeasible to move their traditional business models to the web without adapting them. This may imply that incumbents who use performance measures designed for the traditional business models might have problems justifying the move to OTT.

4.6. Key trends affecting the TV-industry

The most prominent development in the TV-industry has been the emergence of the Internet as a viable source for TV-content. Statistics indicate that consumers are increasingly adopting this option, something that might challenge the existing industry players. Internet distribution is also seen as possibly strengthening the competition in TV-distribution, and this could affect consumer loyalty. Most of the referred statistics concern the US or world population and not the Norwegian market directly, which has not come as far in the development with respect to emerging TV-services. These issues will now be covered in more detail.

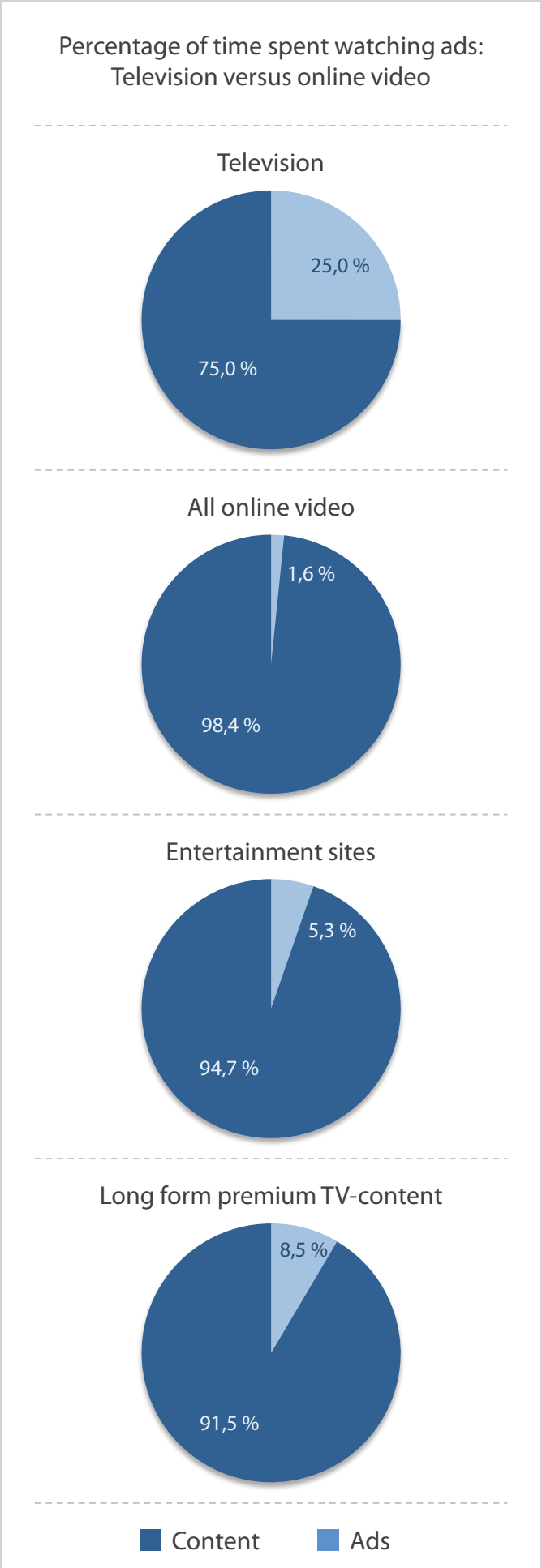

Figure 15: Percentage of time spent watching ads
Source: comScore (2011)

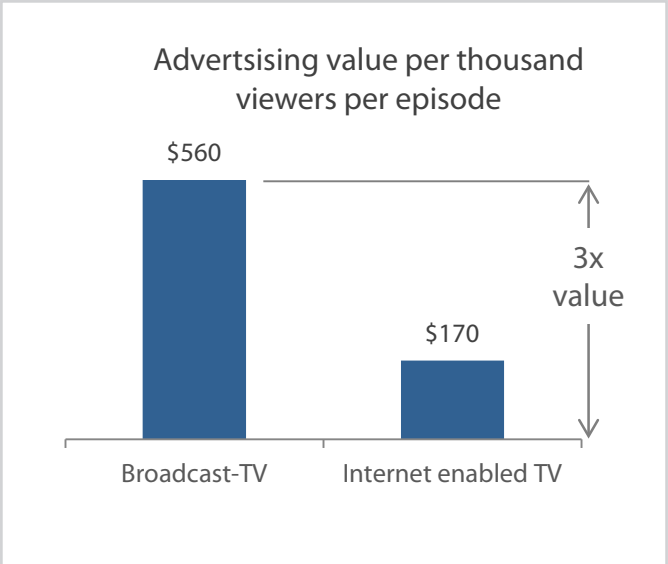

Figure 16: The value of broadcast versus online viewers
Source: IBM (2009b)

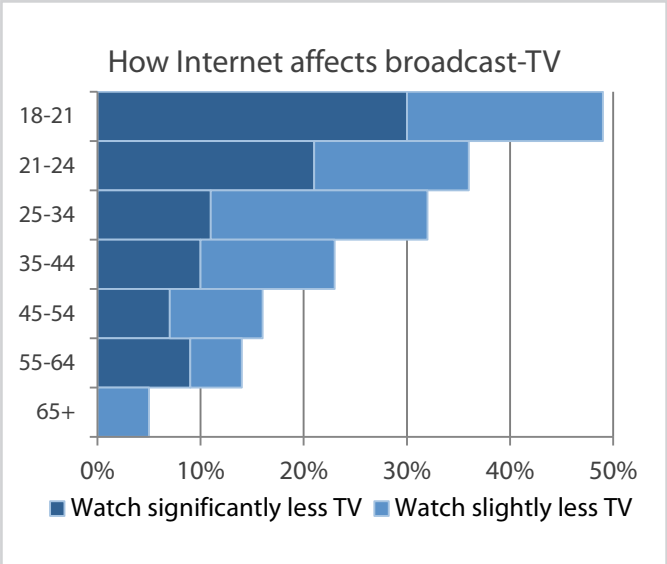

Figure 17: How internet video is affecting broadcast-TV
Source: IBM (2009a)

New entrants potentially strengthen the competitive environment

An important factor for distributors is consumer loyalty. Low switching costs between platforms and many platforms offering substitutable services can make it hard for distributors to retain their current customer base in the face of change (Econ Pöyry 2008). The Econ Pöyry report found that during 2007, the largest distributor in Norway – Canal Digital – experienced a turn-around of 23 percent in their customer base.

The same types of results were also found in a recent consumer survey by TNS Gallup (given in Sonneland et al. 2011). 58 percent of the respondents reported that they had been customers of their current distributor for less than five years. Additionally 35 percent of the respondents stated that they had switched service-provider within the last five years. Among the respondents who had switched to a different service-provider, most of them now get their service through the new DTT-network or from an IPTV-distributor. These numbers indicate that consumers are willing to turn to new and attractive services as they appear in the market place. The respondents who had switched mentioned the following characteristics as important when making their decision: Audio and sound quality, channel offering, customer service, price and consumer friendly user interface.

IPTV and DTT distribution are both relatively novel entrants into the TV-market. As several OTT-services also emerge – and over time are able to compete on quality and excelling on convenience – we might very well see a stronger competitive environment and less loyal customers.

Consumers are turning to the Internet for TV consumption

The TV industry is no longer protected by consumer lock-in to individual infrastructure networks. The Internet has clearly brought new firms to the playing field and increased the competition in the TV industry. According to the Digital Economy Factbook (2009) 71 percent of all US internet users now use the Internet as a source for video content. Further, 19 percent of all the Internet users watch full length TV episodes on the Internet and 10 percent watch full length movies. The ABI Research group predicts that «the number of viewers who access online video will nearly quadruple in the next few years, reaching at least one billion in 2013» (Media Metrics 2008).

A consumer survey conducted by IBM in 2009 indicates the impact the Internet has on consumers TV viewing habits (Figure 17). IBMs findings indicate that almost 50 percent of the youngest consumers say that they are watching less broadcast-TV as a direct result from watching TV through Internet-supported solutions. In addition, one-third of heavy Internet users

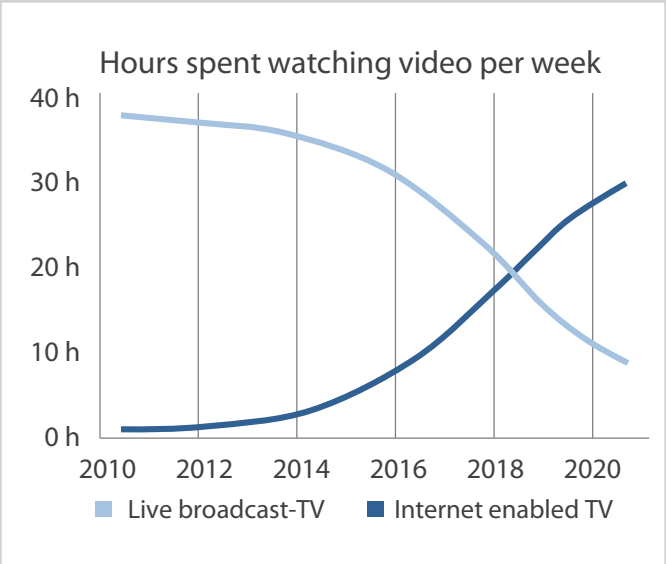

Figure 18: Evolution in Internet-based TV vs. broadcast-TV
Source: TDG (2010)

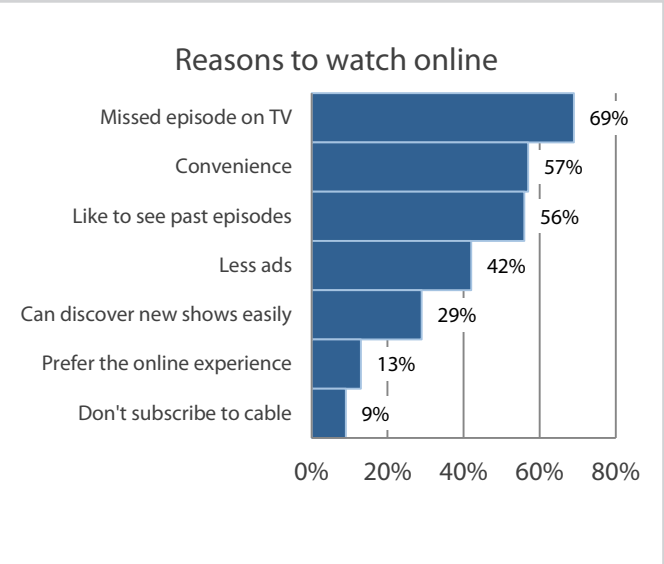

Figure 19: Why consumers turn to the Internet
Source: Adapted from comScore (2011)

admit to regularly pirating music and video content. A survey by Accenture (2008) revealed that 75 percent of consumers worldwide are interested in at least one of the features offered by new TV service models, such as web-TV and Internet-TV. The primary feature of interest is on-demand television viewing.

In their report *The Economics of Over-the-Top TV Delivery: How Television Networks Can Shift to Online Content Delivery* TDG (2010) predicts that by 2020 the world consumption of video through models such as web-TV or Internet enabled TV will eclipse broadcast-TV (Figure 18).

Convenience drives
Internet consumption of television

In a survey with American consumers', comScore investigated why some are opting for Internet-services when they consume TV-content. Their findings are replicated in Figure 19.

The top three reasons for watching TV online all reflect that consumers want to take control over when they watch specific content. The findings indicate that consumers are not always able to follow the pre-programmed schedules that dominate the market offerings available directly on the TV-screen. This leads them to pursue other options for satisfying their viewing behavior. The numbers also tell us that current Internet-solutions are not able to compete on the experience dimension, as only 13 percent of the respondents prefer the online experience. Ultimately consumers are looking for more convenient ways of consuming the content that is of relevance to them, and this is exactly what OTT-solutions offer.

4.7. Quick summary of the current industry situation

The distribution side of the Norwegian television industry is dominated by a few large players within each type of the end-to-end controlled distribution networks. Not all of these distributors support or have deployed services that caters to the emerging consumer expectations of on-demand services. Consumers want to watch content on-demand, and are also looking for ways to enjoy content on all of their screens (TVs, computers and tablets). So far there are not many distributors who are aligned with this consumer behavior.

Currently there is one dominant business model archetype in this industry – linear broadcasting over end-to-end distribution networks – but new models are evolving alongside and potentially challenging the incumbent model. New entrants have realized that the Internet provides them with the opportunity of competing for consumers based on convenience and price, while sacrificing some of the quality, and consumers are embracing these new services. This is forcing incumbents to rethink their activities.

5 Empirical data

In order to establish a solid understanding of the Norwegian TV-industry, the authors completed a series of six interviews with key personnel in several of the incumbent distributor and broadcasting firms. An interview was also completed with a representative from the Norwegian Post and Telecommunications Authority. Additionally the authors attended the industry conference Digitalforum, where top management from TV-industry constituents met to present their views on the future of TV in Norway. In this chapter summaries from each of the interviews are provided, grouped by the type of industry player. A comprehensive summary of all the presentations given at the industry conference is also included as empirical data. The authors also gained access to some third party data on consumer behavior from another student group, and an excerpt of this data is given at the end of this chapter.

5.1. Distributor interviews

Interview with NextGenTel

Date	15. March 2011
Interviewees	Jørn Hodne, CTO, NextGenTel Anders Solhaug, Manager Networks Design and Development, NextGenTel
Location	NextGenTel/Netcom shared premises, Trondheim

NextGenTel is one of the few players in the Norwegian market that offers IPTV over a controlled end-to-end xDSL network. In the light of them being a relatively new entrant into the television market, they were contacted for an interview.

Today's situation and current business models

NextGenTel started developing their own IPTV platform in 2005 when they bought LOS from Agder Energy and at the same time acquired the company's share in iVisjon. iVisjon was positioned to deliver video-on-demand over fiber optic networks. After NextGenTel in 2006 was bought by the Swedish company TeliaSonera, they have transitioned to TeliaSonera's IPTV platform which is common for all of their customers in the Scandinavian and Baltic countries. Most of the content is collected and coded at the Swedish located head-end and transported via fiber to Norway where some additional local content is collected and coded for transmission to consumers. This current solution is an IP-multicast platform with unicast possibilities when that is necessary.

Hodne describes the development in the TV-market as moving from broadcast towards unicast solutions, and he emphasizes that time-shifted content is gaining a more prominent position. Currently

PVRs are the dominating time-shift devices, mostly because of content rights and the maturity of the technology. The interviewees believe that both customers and distributors want to move towards more centralized content in the future. NextGenTel has recently introduced a NPVR solution called *Play*, where all content on certain niche channels are stored centrally and made available for time-shifted viewing for all of their customers regardless of what devices they have at home. There are several legal barriers that have to be overcome for this solution to gain the dominant position, but the interviewees agree that this will likely be one of the services that we will use in the future. They also mention that infrastructure which only supports one-way communication – e.g. satellite – will struggle with the competition from two-way communication technologies in the coming years.

Complications in the industry

When asked about future network infrastructure Hodne and Solhaug differ somewhat in their response. Both agree that fiber is the future, but Hodne has a stronger belief in an extended lifetime for copper based networks. This is due to economy, and also what he calls the main challenge for fiber optic networks in Norway; that is the lack of a common set of rules for digging ditches for laying out new network infrastructure. This makes rolling out fiber a juridical nightmare as the terms are decided on a local basis. The interviewees call the lack of political will to support fiber network construction coupled with the lack of rules for digging ditches the ultimate show-stopper for increased fiber accessibility for Norwegian consumers.

Another huge challenge for distributors is the rapid increase in bandwidth consumption. NextGenTel scales up their systems when they reach a utilization of 70 percent, but they indicate that this might not be a sustainable strategy over time. Hodne mentions that there are systems in place in the USA where consumers pay for quality of service, and the interviewees believe that this will be more common in Norway as well in the coming years. A possible scenario includes different bandwidth classes based on different service requirements. Another possible solution is to introduce monthly bandwidth limitations, where excessive use leads to reduced speeds. Hodne specifies that there are many discussions of this among distributors in Europe, and that the most plausible way to introduce capping is to start with a limit that is well above today's normal usage, to let consumers adapt and conform to this change over several years.

Future challenges also include changes in the licensing costs, where content providers want a large part of the total revenues. They are the deciding actors for the pricing of content and among the supply chain actors with highest leverage, and Solhaug agrees that content will continue to be important for the distributors in the future, not just the infrastructure. At the same time, the licensing costs are dependent on infrastructure and are higher for IPTV broadcasting than for traditional broadcasting. On a side note, today's customers do not care about which TV infrastructure they use, according to the interviewees. Hodne exemplifies this by saying: «Today the customer doesn't care whether they have TV over coax or over DSL. So what?»

The future situation and related business models

While talking about the future business models in the TV-market, Hodne mentions the necessity for all involved actors to realize that there exists a form of mutual dependability between content and networks, where neither can survive without the other. Thus different actors needs to come to terms with the fact that business models must be created that support overall value creation with money to be made for all those involved. These sustainable business models are not present today. Solhaug adds that if a content provider suddenly increases the quality of their video content, this will leave a big challenge with added costs to the distributors, and they want a fair share of the value creation they are part of. This also means that Akamai and other CDNs will become even more important in the coming years according to the interviewees. They

also raise their concern about every CDN wanting to place a rack in their facilities, and that joint CDNs where both content creators and distributors collaborate could be a better solution going forward.

The interviewees believe that locality will be of more significant importance in the future. When the location of the customer is known, many opportunities arise. One example is targeted local ads. This requires local adaption of the signal sent from content providers, and this involves both technical and licensing issues. The technical issues are according to Solhaug already solved by component developers, with systems that can swap out old commercials with new, but these systems are not in use in Norway today. The licensing issues are still present, but the interviewees see a development in this area as well. While content providers historically have refused any modification of their signal, NextGenTel has recently been allowed to do their own re-encoding, though with some limitations. By limiting the number of necessary encodings, content providers reduces their costs, and Hodne believes that we will see even more local adaption of the signal in the future, but emphasizes that this will take long time. Signal adaption can make room for new services that utilizes localization even more.

The development in the industry the next five years

When it comes to the future Hodne is reluctant to speculate. He says that NextGenTel's position as a participant in the Norwegian TV-market currently is too small, but that their platform has potential as TeliaSonera has rolled it out to 900 000 households in Scandinavia and Balticum. He continues with pointing out that the market will not look the same in 5-years' time, at least not with regards to the actors in the marketplace. Hodne also believes that we will start seeing shifts already in the coming year.

Interview with Telenor

Date	11. April 2011
Interviewee	Sven Størmer Thaulow, Director Telenor Internet Content and Services AS
Type	Phone interview

Telenor is one of the largest influencers on the Norwegian television market. They control the most exhaustive infrastructure both on broadband and mobile, and have large ownership interests in many parts of the supply chain. Based on a presentation by Sven Størmer Thaulow at Digitalforum 2011 about OTT, the interview was tailored to deeper explore some of the statements made during the presentation, and how Telenor will continue to contribute to the Norwegian TV-market in the future.

Today's situation and current business models

Thaulow said that bandwidth is an issue, and that new infrastructure investments are required all the time. Telenor has invested ten percent more in their core network this year than they estimated last year. This also means that they have to extend fiber further throughout their networks, so just a very small portion of copper is left. «We don't believe that fiber to the home is necessarily required, but that is difficult to say», Thaulow informed us. He pointed to a steady increase in bandwidth consumption over the last 10-15 years, and followed up with a rhetorical question about when it will stop. It is the huge growth in video content online that is driving volume and thus infrastructure investment costs. This is the main cause for recent discussions about payment from content providers. Thaulow said that Telenor has few problems with paying for regular Internet traffic. That is something the customer is already paying them for. But when someone begins with distribution of high quality video content in their network, then they should be charged for it.

Telenor is rolling out their own Nordic content delivery network, and Thaulow said that «Telenor

will be among the first customers of our own CDN-operations». Content providers need a CDN. It is necessary for delivering high quality OTT-solutions through the network. However, according to Thaulow, there is not much profit in running their own CDN, but what is worrying is to give other CDNs as deep access into the network as they get today. «We would like to have greater control of our own network, tweak parameters and costs in our own net regarding distribution of video, which will probably account for 80 percent of all traffic in five years». The main reason why CDNs have been granted access in ISPs networks up until now is that they have reduced the costs for the operators on their international Internet traffic. However, Thaulow said that it is both cheaper for ISPs to deploy their own CDN solutions today at the same time as the price for traffic out of their own network has decreased. According to Thaulow, «it is very little money to save on having a [third party] CDN in your network today».

Thaulow presented thoughts of Telenor's future OTT solutions at DigitalForum. He confirmed that there are technical challenges tied to these solutions, but that it first and foremost is a challenge with content and rights. You need to be positioned in the market for linear television in order to get to talk to the big content providers. However, it is relatively easy to get OTT-rights with all the exceptions of national broadcasters such as TV2. According to Thaulow, many content providers are willing to explore new ways of adding value to their product through new distribution channels. The usual challenge though, is «regarding unbundled rights, i.e. if we can go to a content provider and sell their content directly to the end customer online independent of whether they are a customer of our traditional TV services or not». Thaulow added that this varies from actor to actor. Some look at this as an exciting new opportunity, and are not very concerned about cannibalization, while others have large incomes from existing distributors, who will feel very exposed if another actor is granted similar rights on a different platform.

Complications in the industry

Both content producers and distributors are creating their own OTT services, but there are several important differences between them according to Thaulow: «Telenor does not look at [for instance] TV2 as a competitor, since they just offer their own content. You may say that because we only watch one thing at the time, we compete according to how large share of the users' time that is spent watching the different services, but we would like to primarily look at them as a collaborating partner». Thaulow added that all isolated content providers want to have their own play-out to the market, but Telenor does not believe that the customer will prefer to go from channel to channel to source content.

According to Thaulow the customer requirement is to get access to the content they want at the time with the least amount of effort. Some will probably say that search can solve this problem. Telenor on the other side strongly believes the best solution is combining aggregation and recommendation. This raises complicated questions: «NRK is definitively in an exceptional position. TV2 is probably the [Norwegian] broadcaster that least of all would like others to aggregate their online content. This is evidently a challenge, and they are the most ambitious». Thaulow emphasized that their negotiations with TV2 have not been extensive at this point in time, and that the biggest cause of potential conflicts in these types of deals is customer ownership. The customer ownership has traditionally been held by the distributors, while at the same time content providers would like to have direct dialog with their end customers, and thus own the customer.

Hardware manufacturers may also be interested in delivering OTT solutions, and Thaulow pointed out that it is a big battle for customers. Hardware producers are entering the market – just like they did in the cell phone industry – and everyone tries to get the customers to use their services. A lot of the distributors' motivation is to make sure that they don't end up with commodity infrastructure while other

players take the more important parts of the supply chain. Thaulow further founded on his presentation at DigitalForum and said that: «I believe that over time the battle will be regional or global, at least in a long time perspective». He extended this by saying that constellations among the large content providers, distributors and media houses are interesting. This could be a business consortium that could withstand the pressure from global actors. One of the ways Thaulow explained the threat was by saying that if for instance a TV manufacturer like Samsung – with a 40 percent market share of Norwegian television – manage to get high penetration of their connected TVs in the Nordic region, then they will be in a great position for starting to negotiate rights with content owners. At the same time he added that this is not a core part of their business model, and that some say that «we can't take it all, so we take some. And Telenor is definitively not going into the hardware-world».

Thaulow emphasized that the first main goal for Telenor is to create very good complementary services to their current offerings, but he also said that these services might be considered as substitutes in the long run. This is something that may create some internal disagreements between the involved parties. According to Thaulow, it is «consensus within Telenor to do this, but we may see a conflict of interest when we get down to an operational level». He exemplified this with a fictional case about a pricing decision where a television service is delivered over the top – instead of through a conventional set-top box – but with much lower prices than they currently sell on cable or satellite. «This would be a radical decision that not all would agree on, because we interfere with each other's targets».

The future situation and related business models

Thaulow said that Telenor's long-term target is to be positioned to be able to deliver good OTT services over the Internet that can substitute today's existing core offerings. He based this on «a firm hypothesis that much of the service offerings will be delivered over the Internet more or less independent of carrier», and that Telenor believes that over time end-to-end controlled services will be impaired by Internet based delivery. Thaulow said that «this will be complementary services for the end-customers in an intermediate phase, and it is also very important for us to have a position today to support our core product offerings». Telenor imagines a situation where the end-customer can consume the content he would like on whatever device he wants to use. This means that Telenor has to be well positioned to be able to deliver this in a good way. Thaulow emphasized that «this is quite demanding technology wise, and not least challenging when it comes to rights for TV-production».

While we discussed OTT, we asked how Telenor looks upon delivering their services across competing carriers' networks. Thaulow re-iterated that he believes future deliveries will be more or less independent of carrier, but he also confirmed that «if you are using our service and we see that you are currently on a competitive net, we can tell you that if you want full HD you can order broadband from us. This is exactly how we think». Thaulow said that this is a pleasant side effect, but he does not believe this will drive the big sales. This is mainly because the churn on broadband connections is quite low.

While talking about the different players in the industry, Thaulow said that he doesn't believe that some of the big players will disappear in the coming five years. There might however be new alliances, or changes in ownership structures. He also believes that production techniques have changed and adapted to a more modern world, where they are even better aligned with on-demand distribution. This is, as Thaulow emphasized, a trend we already see. There is no doubt that this is happening, he said, but they have to do this to survive. Another aspect he mentioned is that the smaller channels might begin to struggle because they have limited resources, and that for instance Telenor is serving Tippeligaen (the Norwegian professional football league) together with TV Norge. This is both because TV Norge would like to have a distribution

partner, but also because Telenor can do this through their big business units, which has both technology competence and capacity. «Being in the media industry is something that requires a lot of capital, and this is something I believe is a challenge at least for the smaller channels», Thaulow said.

Thaulow mentioned that he finds Wimp a much better music solution than Spotify, mainly because they have more focus on the editorial aspect. Content, and in particular content on TV, has a very local profile. This leads Thaulow to believe that the editorial model will be very important for television as well, and he mentioned that Telenor's online TV-service located at online.no has editors. These editors recommend films and give users their suggestions, and Thaulow said that «using editorial content to trigger sales is something we believe very strongly in».

The music industry has struggled with many of the same issues that the television industry is facing today. Thaulow said that the most important thing we can learn from the music industry is to «establish legal alternatives right away». Immense amounts of hours have according to him been used to counteract the needs of the customers, which has been to get access to digital music wherever they are. This is also what we see for television today. «People are downloading like crazy, and why are they doing that? Well, there are no legal alternatives at an affordable price». Thaulow clarified his reasoning by stating that «this is my most important message to this [television] industry: Don't do the same mistakes once more».

The development in the industry the next five years

Thaulow believes that the number of customers with managed TV solutions will be as many in five years as it is today. He said that «this is behavioral adaption that takes very, very long time to change». But at the same time, he believes that the number of users that watch TV through OTT-solutions – mostly time-shifted, on-demand services – will have increased significantly. «It may as well be possible that we begin to see trends indicating that on-demand consumption have begun to cannibalize viewing time on managed TV», he said. «This is not something we see today».

Interview with Get

Date	13. April 2011
Interviewee	Marius Haugen, Head of Web and Development, Get
Type	Phone interview

Get is currently one of the two largest cable-TV players in the Norwegian market. Additionally they are among the leading Internet service providers. We contacted Marius Haugen – Head of Web and Development – for an interview in order to gain some insight into the view of a cable distributor.

Today's situation and current business models

Get as a company is very aware of the changes in the industry with regards to what will be the competitive factors going forward. Haugen explained that «it's not among our goals to be a supplier of infrastructure – cables are just a means to an end – it is the content and the way in which it is presented which will become points of differentiation». Further he claimed that «cables will become a commodity, nobody will care if it is Get that provides the connection, but people will care if it is Get that provides the user experience».

Complications in the industry

As several industry players are developing their own OTT solutions, regardless of their position in the existing supply chain for TV-programming, Get sees that they are about to face a changing competitive environment where their current suppliers are directly targeting the end consumer. Get is currently positioned to offer an end-to-end connection for their customers, enabling them to guarantee QoS. Haugen

admitted that this is a defensive position, where they utilize their strong power in transmitting services to the end consumer as long as they own and control the underlying infrastructure. This is something that Get will continue to do as long as it's possible, but he recognizes that this is a fight that cannot be fought for long. As a distributor Get must win on equal terms «competing on broadband connectivity on a price vs. speed basis, and competing on entertainment by superior content and experience».

On-demand offerings require distributors to renegotiate existing licensing contracts with content providers. Get declined to comment on their current standing with respect to obtaining distribution rights for an OTT-platform. But Haugen sees that diverging interests among content providers is a complicating factor for being able to offer a complete OTT-service. As some players such as NRK are pursuing their own platforms they might not be as willing to let others redistribute that offering. This is an issue that is governed on a case-by-case basis and foreign players such as Discovery are much more willing to facilitate new distribution solutions.

While many infrastructure owners in the market are crying out in media about how the infrastructure will become a limiting factor for services provided, Haugen believes that «our current infrastructure will be adequate for some time, particularly given our recent upgrade to the EuroDOCSIS 3.0 technology. I foresee that other players in our market, particularly those whom offers are based on less promising standards – such as ADSL – will be more severely impacted than we will», but emphasizes that this is not his area of expertise.

A suggested solution to the infrastructure and network capacity issues, according to some players, is for the content provider to start paying part of the distribution cost for having their content delivered to consumer. Get shares the view that this would be beneficial and that it is a natural development in light of increasing network traffic, but Haugen is not sure that this is entirely feasible. Other distributors have also suggested that a model where capping consumers' Internet traffic at a certain limit of used capacity is the way to go. Haugen does not agree: «I don't believe that this is necessary, we have enough capacity today. Given that the demand does not explode I do not see the need to do this». Haugen continued by arguing that this would ruin the broadband offering, and that Get views broadband as a commodity and not a service differentiation point. «If you start messing about with [the broadband offering] too much, you will only spoil things for yourself», he said.

The future situation and related business models

With the introduction of OTT in the TV-market – which leads to less focus on owning the infrastructure that connects the customer to a network – Haugen believes that competition will be on differentiation with regards to presentation of content. «I believe that the way in which a distributor can differentiate oneself is in the way the services are offered. The content itself will more or less become un-differentiated across the different players, while the way in which it is presented and the user experience of how the service is delivered will be an important factor in how the competitive environment will evolve» Haugen said.

Get aims to deliver a complete and integrated service across all content types and all delivery platforms. The goal is to present the content in a good and easy way wherever the consumer is. They will communicate with the consumer on an emotional level, and Haugen said that one factor Get wants to compete on is to «make your everyday easier». When it comes to expanding their footprint outside their own infrastructure Haugen see a trade-off between opening their own network to all service providers and keeping it closed. «The defensive bonus by not doing so is the option to deny other players access» Haugen commented. If all the networks are to be agnostic of service provider it will be a national matter. Haugen believes that this is what we are moving towards, but short-term Get will stay within their footprint, while continuing to work on liberating their services from

infrastructure as much as possible as time passes.

Catch-up TV is according to Haugen one of the services that we definitely will see more of in the future, and is something Get also is working on. Currently there is still a lot of work that needs to be done around rights management to roll this out full-scale; technologically all the parts are in place. «Given that all the big players [content providers] are onboard this is a very relevant service». Haugen believes that in the future the customer will not differentiate between the current PVR solution and an Internet-centered service for achieving catch-up TV.

The increase in on-demand services available to the consumer opens up the opportunity for new revenue models for distributors. Haugen believes micro-payments are the way to go. «With micro-payments one can scale infrastructure based on revenue, making it much easier». The drawback of subscription solutions is that the distributor won't get paid for providing access to additional content. While Haugen agreed that the Spotify model that we are seeing in the music industry is beneficial to the consumer, he doesn't believe that one can make it cheap enough if the consumers are to gain access to a large content library. «And by large I mean everything you see on TV!» he said.

The development in the industry the next five years

When it comes to the development in the industry Haugen said that «I believe that all the services will converge, and that we will not be differentiating between TV, Internet and the accompanying services in a couple of years. I believe there will be one platform, allowing you access to all the services on your TV. The need for having a platform like the iPad for one objective and a laptop for another objective will become obsolete». The belief is that the services available on one platform today will soon be available on all platforms.

While some content providers are developing their own OTT-solutions and universes, Haugen's point of view is that the consumer wishes to access all the different services from a centralized entry point; «I don't believe the consumer wants to go to NRK to access their content and then to TV 2 to find their content». He believes that it's a convenience aspect for the consumer to be able to go to one place to find everything and to find it in a way that is appealing to that person. Haugen also agrees with others in the industry on that the border between linear TV and on-demand services will be totally erased.

On the topic of important strategic decisions for distributors in the coming years, Haugen said that «what is central is the break-down of how we approach our product, that we stop thinking of content as something that is streamed». Content should be viewed as something that is available on-demand. Haugen also believes that the terms distributor and channel will somewhat disappear, and that «this is something that must be reflected in the business model». He continued by saying that more and more this industry will be centered on the consumer, and that this will be a healthy development. His view is that the channels, or content providers, will to some degree consolidate to become a procurement function that negotiates with content producers and makes the content available for distribution through other agents who are the last link to the consumer.

On the development of infrastructure and the possibility of neutral networks Haugen commented that he believes that the existing model will prevail for some time still, basically because the networks are protected. Neutral STBs and connected devices will not be prevalent «until we have fully neutral networks, but will most certainly become contenders in such a scenario. I believe we are going to get there [quite possibly fueled by legislative changes], and we need to position ourselves for this already now».

Interview with RiksTV

Date	19. April 2011
Interviewee	Morten Lynum, Chief Commercial Officer, RiksTV (Lynum has since the interview obtained a position with another industry incumbent)
Type	Phone interview

RiksTV is the sole distributor of TV-content over a DTT network in Norway today. Due to the different technological aspects of wireless distribution as compared to cable or fiber-networks, RiksTV was contacted in order to perform an interview with the goal of uncovering the viewpoints of a DTT distributor.

Today's situation and current business models

As a distributor of TV-signals RiksTV view the TV-market as divided into two parts; the wireless and the wired market. Because of the difference in technology the markets are considered to be somewhat separate according to Lynum, who said «we don't notice the competition from cable-TV as much because that [market] is more stable, and the customer movement is much larger within the wireless market. We experience satellite to be our biggest competitor». The entire TV-market is also split almost in half with respect to the two different markets: «I believe there is about one million wireless customers and there are 2.2 million households. I believe the split is about 50/50 today». Additionally the two markets compete in different geographical areas; wireless distribution is most prominent in rural areas – where most of RiksTV customers are located – while cable-TV and fiber are the most common forms for distribution in the big cities.

In order to compete in the wireless market, RiksTV has found a new dimension of competition for positioning themselves. «We figured out that we could launch a multi-room concept were we included four subscriptions to every household. We realized that this was a latent need in the market», Lynum said. The area of coverage of the DTT network and the ease of installation results in a value proposition that it is hard for satellite distributors to copy. Through this move and some changes to the bundling of channels RiksTV has obtained a pretty good position with respect to the customers that are in movement on the wireless market, Lynum commented.

According to Lynum the current situation in which there is not too much competition between the wireless and wired distributors is likely to persist and «there exists a marginal cost for how profitable it is to expand infrastructure as the most central areas have been covered. It will not be worthwhile to build fiber if there are not enough households in close proximity». This will ensure that a market exists for both wireless and wired distribution technologies. «I definitely believe that there will exist a market for wireless distribution, of that I'm totally convinced» Lynum said.

Complications in the industry

The most challenging aspect for a DTT, or satellite, distributor is the use of technology that only facilitates 1-way communication. This type of technology limits the array of services that can be offered to the end consumer, and can thus affect the ability to compete with a wireless distribution network. «If you look at the numbers for our competitors, especially satellite actors struggle with diminishing customer growth» Lynum said. RiksTV are experiencing growth overall, but the growth numbers are varying with time.

Lynum pointed out that internal to the wireless competitive market «the challenge for RiksTV is our high cost base, and at the same time having limited capacity. This means that it is difficult for us to compete on price and the number of channels only, compared to satellite». When it comes to the wired part of the distribution market cable-TV and fiber actors enter new areas, roll-out infrastructure and connects new customers. «Fiber has been in development, and this has probably cost us some customers», Lynum

admitted, but he restated that «this is not where we are experiencing the most competition». Lynum also see that «overall you can say that cable and fiber takes a share of the market through the attractiveness of those platforms».

Another point of difficulty with respect to TV-distribution is the relationship broadcaster-distributor-consumer as both broadcasters and distributors are introducing OTT-solutions regardless of supply chain position. On this development Lynum noted that «it is exciting to see how the broadcasters are going to manage their services. Their idea is to skip the distributor and provide content and services to the end users themselves». He also commented that «TV 2s Sumo product has so far not been a distributor friendly one». Sumo is an OTT-solution for distribution that is only available for consumers who go directly to TV 2s portal, and is thus not made available for distributors who wishes to include that content among their services. This is part of the emerging battle for end-consumer ownership between different supply chain actors.

One service that is increasing in consumer popularity is on-demand. RiksTV currently has a somewhat limited catalog of on-demand content due to the fact that they can only offer passive on-demand, where the content must be stored locally at the consumer's premises. While we discussed the current implementation of on-demand from RiksTV, Lynum said that «the service is as it is today partly because of immature technological platforms. More emphasis will be put on that issue when we have the technology in place».

According to Lynum another «challenge tied to that [on-demand] service is the rights windows», referring to when rights to attractive content can be obtained with respect to when it was first aired or showed in movie theatres. RiksTV currently offers a subscription based model for access to on-demand movies, and «the rights window internationally does not warrant that the content availability will much better than what it is now», Lynum said. When it comes to for example Hollywood there are other distribution solutions than subscription based models, such as transactional VoD, which are more attractive and are thus given better rights windows. It is challenging to have a subscription model when Hollywood governs the rights based on were the most profit can be made. Lynum also said that locally there are no ways of influencing how this should look. Big actors like Walmart – who have enormous sales of DVDs – are forcing Hollywood to hold back on distributing their content electronically. Hollywood is continuously tweaking rights management in the way that will maximize profits; therefore Norwegian distributors operate at «the mercy of the surrounding environment».

Lynum agreed that subscription based models are preferable from both a consumer and distributor viewpoint, but as long as «other rights windows generate more profit we will not be given access to these models». The consumer upside – being unlimited consumption – is clear but also for distributors the predictability of revenue that follows subscription models is important for actors in a small country like Norway.

The challenge of guaranteeing quality-of-service, as it is with many of the new OTT-platforms, leads Lynum to believe that «with respect to live events and HD material, I think that most of the consumption primarily will be done using the original platforms». Further he believes that «movies, series and catch-up can be consumed over-the-top», and he stated that consumers probably have a different expectation of the quality provided when consuming content on OTT-platforms.

The future situation and related business models

Even though on-demand services are likely to be a big part of the TV-future the market is changing slowly. Lynum referred to a survey by TNS Gallup which show that for 2010 only 2,7 percent of all TV-viewing in Norway was time-shifted, and said that «there will be some inertia in the market place before the numbers get there, but the path is becoming evident». Lynum defers to comment further on RiksTV's work in this area, but tells us that a new generation of set-top-boxes is under development.

One competitive element that might resurface going forward is content exclusivity, according to Lynum. «Sports rights can be a driving force when it comes to moving customers between platforms», he said, making this an interesting area to follow and to engage in. «The Champions League rights are out now, or coming soon. Those will cause a big fight, and also the rights to Tippeligaen are coming this fall. These are two important events in relation to what will happen» Lynum commented referring to customer movement, platforms and distributors. He agreed that exclusivity is not in the customer's best interest, but believes that this can again become important if we have fewer competing players in the future.

Many industry actors are looking at multi-screen distribution as a central part of the TV-future. This is a development that RiksTV is keeping an eye on, but for the time being their focus will be on the living room TV-screen and not the mobile devices Lynum said. This is also the position that most distributors have today, mainly because «the most important thing for consumers, with regards to TV, is consumption of linear TV-channels». But Lynum also see a strategic challenge in positioning for distribution to several platforms going forward: «Why should the customer watch the content on an iPad from you when broadcasters have their own position on these platforms?» Lynum answered his own question in this way: «It must be because we [distributors] are able to be an aggregator, were the customer doesn't need to deal with many actors and can get everything on the same invoice».

Lynum mentioned that the industry talks of consolidation of the broadcasting market in the Nordic region. Actors like Viasat are already integrated in that they are both a content provider and a distributor on the satellite platform. «If such a consolidation takes place, it might lead to a strengthening of the integration between distributors and broadcasters». This might in turn re-spark old battles for exclusivity according to Lynum. «But as long as there are as many actors both among broadcasters and distributors as we have today, I believe that most will have access to the same content. This is because the rights are too expensive to obtain exclusivity», he added.

The development in the industry the next five years

Lynum believes that the trend is towards linear-TV as the way of consuming live content, while other content is more likely to be consumed on-demand. However, he said that «I don't believe that it will be 100 percent the one or the other», and thus that both modes of consumption will coexist.

On the question about whether the development in the market will be towards less or more distributors in the future as a result of new distribution technologies such as OTT, Lynum said: «I think that a couple of years will pass before OTT gains a real foothold. I also believe that with respect to quality and capacity, and least of all with respect to the really big live events, we are talking at least five years before we see what will happen. But I believe that both DTT and satellite [distributors] have challenges ahead with regards to the limitations of the technology. There will still be a market for wireless services, but in what scale remains to be seen».

Towards the end of the next five year period Lynum thinks that «the capacity improvements and the prevalence of the Internet will provide the distribution market with a new perspective». How it all will turn out is unknown he said, continuing «it is a question of net neutrality and the broadcaster versus distributor issue. Still distributors have significant position as they own the end-customer, but it remains to be seen if this will continue». As for RiksTV's position Lynum is hopeful that they will continue to be smart and challenge the market in the best possible way, but also state that they will have to look at how they can be part of the emerging market.

5.2. Content provider interviews

Interview with NRK

Date	11. April 2011
Interviewee	Bjarne Andre Myklebust, Head of IP Distribution, NRK
Type	Phone interview

NRK is Norway's largest broadcaster, counting both commercial and non-commercial ones. Based on a presentation by Bjarne Andre Myklebust, Head of IP Distribution, at Digitalforum 2011, the interview was tailored to deeper explore some of the statements made during the presentation.

Today's situation and current business models

Currently NRK is working to release a holistic OTT TV-universe that will be available on all types of devices, offering both linear and on-demand content to the consumer free of charge. According to Myklebust this initiative is an attempt from NRK to communicate their brand more clearly to the consumer in a market which currently is highly fragmented with respect to the experience available on different platforms for TV-consumption.

NRK is not the only actor working on their own OTT-solution; this is also done by other broadcasters as well as distributors. When it comes to licensing NRKs OTT offering to third party distributors Myklebust said that «today there are no rights management mechanisms that allows this». This is also part of why NRK is working on developing their own OTT-universe, since practically it's the best way of reaching the consumer with a holistic experience. The rights issues in the marketplace today mainly concerns rights to on-demand content, making it hard for distributors to license this content for use within their solutions. NRK has looked at the possibilities for making this work, but the diverging rights interests in the industry currently makes this infeasible, Myklebust commented.

As a broadcaster NRK also licenses content from other producers to fill their own linear broadcast schedule. Thus, when building an OTT-universe they are also dependent on being granted on-demand rights for that content to be able to provide the consumer a complete offering. Today some of these rights are offered by content producers as part of the package when NRK licenses content from them, while still others negotiate more money for these types of rights. Typically a rights window of 7 to 30 days is offered for making the content available on-demand following the linear broadcast of that content. Myklebust emphasized that «we are very reluctant to pay extra for on-demand rights, because we view this as a part of the total package». At the same time he sees that more and more studios are realizing that broadcasters are not interested in buying content without also being granted on-demand rights.

Complications in the industry

With several supply chain actors working on their own OTT-solutions Myklebust raised the concern that if distributors are to be the aggregators of all content then they are likely to operate out of self-interest. Since NRK is a non-commercial public broadcaster he is concerned that they might drown in that type of regime because the distributors cannot capitalize on offering NRKs content. «We are afraid that distributors will manage the experience based on cash flow opportunities and not necessarily what the public wants to consume», Myklebust said.

Myklebust was confronted with the opportunity the distributor has to make the experience equal regardless of which broadcaster has provided content to the distributor. In his response he stated that he doubts that one will be able to solve the problem of wanting everything to look the same. He also believes that this route is not in the best interest of neither the

consumer nor the industry. Myklebust argued that what will be important is seamlessness between linear and on-demand consumption. This is to relieve the consumer of having to leave one universe and enter another to switch between the two consumption modes, like with the current connected-TV solutions in marketplace.

Telenor have issued a public statement saying that they want the content provider to also pay part of the bill when it comes to financing high quality video services such as OTT-solutions. Myklebust commented «we will never pay for the access from our customers to our CDN; this must be handled by the ISPs [offering Internet-connectivity], and our opinion is that this is a cost that the consumer already has covered when he buys [Internet] capacity». In his point of view NRK is already helping out by utilizing CDNs for distribution of content, thus reducing the network capacity necessary in the Internet backbone. This is a part of the cost they gladly take on, and this is the content provider's part in bettering the access to OTT-content for the consumer.

Some ISPs – that also act as distributors – have started rolling out their own CDN-solutions for content providers to use. Myklebust said the most important thing for NRK in choosing a CDN-provider is that it is able to offer the same quality of service to all Internet-users, not only those in the ISPs own network. He does not believe that national ISPs will be able to offer the same balanced offering in all networks as large, global actors such as Akamai can do.

The future situation and related business models

Going forward with creating their own OTT-universe, NRK is willing to offer this solution to all distributors that operate on standardized platforms and are not trying to create their own walled gardens around the content that they aggregate. The most interesting development is according to Myklebust the new hybrid-TV systems where the consumer does not necessarily have to go through a distributor portal to reach the content, but which allows access to NRKs universe directly. Myklebust also believes that the content provider is best positioned to create a connection between linear and on-demand content in a way that is intuitive and simple for the consumer to relate to.

It will be important for the content producers to retain their position and be able to maintain their brand in this market. Myklebust said that «if all the content is experienced as it is delivered from Viasat or CanalDigital for the consumer, then eventually none of the broadcasters will be left with any value». He fears that if consumers do not experience that the content necessarily comes from a particular broadcaster, this will cause the broadcaster to struggle with regards to business models – and to justify their existence in the market – and thus becoming marginalized.

When it comes to industry positioning Myklebust agreed that those distributors that are able to provide two-way communication, and thus IPTV, has a competitive edge compared to satellite and DTT actors. This is because of their ability to provide services such as on-demand instantly, using the two-way capabilities of the connection that is used for receiving the TV-signals, allowing them to quicker reach a higher penetration for these services.

With regards to what services proper hybrid-TV solutions will bring to market in the future, Myklebust visualizes that there will be options for alerting the user to new or previous content available in connection to what he is currently consuming. He also believes suggestion of similar content directly on the TV-screen with access only a button push away will be attractive. Additionally the TV-experience can possibly be enhanced with localized information during elections or augmenting information that can be accessed alongside sports events through overlays of what is being watched. He believes that we will see an «interactive TV-experience that is rendered possible in a whole other way than what we have had previously».

The development in the industry the next five years

About the future Myklebust said «we will to a larger degree have a better user experience and better

seamlessness with regards to being able to switch between linear and on-demand viewing much more simply than today». He also believes that there will be a large increase in on-demand services available on the TV-screen itself: «In the future we will have much larger content-catalogs available on the TV through the remote. I believe this might be the biggest development and this might do something about the attractivity of linear TV-programming in time».

Another aspect of future TV-viewing that Myklebust believes in is seamless transitions with regards to moving content between devices as the consumer is on the move. He commented «TV will not only be TV on the TV-screen, but TV on several types of devices».

Interview with TV 2

Date	18. April 2011
Interviewee	Hege Kosberg, Director Multimedia, TV 2
Type	Phone interview

TV 2 has been a progressive broadcaster in the TV-industry for many years. They were among the first to launch their own OTT-service, back in 2001. In order to learn more about how TV 2 views the Internet as a distribution channel, newly appointed director of multimedia, Hege Kosberg was contacted for an interview.

Today's situation and current business models

The television industry is in constant motion, with major developments in technology and the market, according to Kosberg. She told us that TV 2 currently views web distribution as a complementary offering to their traditional linear broadcasting. «We believe that TV viewing will occur online, that it will gradually be moved towards Internet distribution rather than through the closed networks». She adds that industry professionals argue about when this shift will happen, and not if the shift will happen.

Complications in the industry

TV 2 anticipates that the changes with respect to Internet distributed television will lead to the emergence of several competing solutions, according to Kosberg. Alongside this we will see an increase in conflicting interests among distributors and content providers. Kosberg said that «several distributors want to take the role as an aggregator, where they own the customer or the access to the market in one way or another. This is something we see as both a treat and an opportunity for Sumo». She agreed to the assertion that the customers would probably like to find their content in one place, but quickly added that it will never be the case that the consumer can find everything in one location. This is according to Kosberg because distributors – who could hold the role as an aggregator – will aim to optimize their cost. She emphasized that «what we are afraid of is that Norwegian content providers will struggle, because [the distributors] would always like to have the cheapest content available». This is an issue because Norwegian content is very expensive compared to foreign content as a result of low population. Kosberg said that «high quality content would cost the same to produce for the five million people in Norway as it would cost to produce for the 300 million in the USA». This may result in cost centric distributors with too much bargaining power she said, and added that TV 2 fears that this quite simply will lead to less domestically produced content.

We asked Kosberg of her standpoint regarding whether content providers should pay distributors for the increased traffic they generate with high quality video streaming. Her answer was that she does not think that is realistic. She argues by saying that this would mean that the same bill is paid twice, because consumers are already paying for network access, and that they pay quite a lot. Kosberg added that their content is one important reason for consumers to pay for Internet connections in the first place and that TV 2

spends vast amounts on content production. TV 2 also invests in infrastructure on their side to make their content accessible for users, e.g. content delivery networks. According to Kosberg this boils down to the initial argument: «You [as a consumer] have already paid for the delivery from us to you through your Internet subscription. Why should this be paid for twice?»

One very difficult aspect when it comes to the television industry is license agreements and the accompanying negotiations. Kosberg told us that there are major points of distinction between different rights owners when it comes to what licensees are allowed to do with the content. TV 2 has for instance obtained full rights to broadcast Premiere League in Norway. In this case it was important to the licensor that TV 2 prevents consumers from storing or making pirate copies of the content, therefore TV 2 has to adopt solutions that makes this very difficult. However, within those limits «the licensors does not care whether the consumer watches the content on their cell phone or if they watch it on their TV. That is not as important, as long as we stay within the boundaries of Norway», Kosberg added. On the opposite side we find the movie industry in Hollywood. Kosberg said that Hollywood-lawyers are most interested in maximizing their client's revenues per platform. For instance, this means that TV 2 has to pay extra if they are broadcasting the content to a tablet in addition to a PC. Kosberg told us that «multiple lawsuits are reported in the USA, because with services such as AirPlay you suddenly get distribution across several platforms», and that platform centric thinking «will be very difficult when we get laptops where you can remove the screen and turn it into a tablet». Kosberg believes that one possible solution is to stop thinking about platforms and negotiate licenses primarily based on geographical boundaries in the future.

Another complication with licenses is that it is difficult to keep them up to date with the rapid developments in technology. We asked about how catch-up TV is handled within licenses, and Kosberg told us that the industry is split in this question as well. Some say that if you manage rights within a three-year period that has one price, but within this time-period you can really do whatever you would like as long as the content do not go astray. Others have chosen to handle catch-up as an addition to the live streaming rights, where they have chosen to divide the catch-up service into a myriad of different platforms, something that leads to quite complex agreements. Kosberg added that this is something that it is very difficult for the licensor to check up on: «It is exactly one year since the first [Premiere League] agreements came, but the changes happen faster than they manage to update their agreements».

The future situation and related business models

Kosberg said that they want Sumo to be platform independent, and that Sumo should be a service that is distributed across open networks and cellular networks. She added «we believe it will be the content that motivates you to buy a subscription. If you are currently situated in one place or another is not significant to you as a consumer». We asked about whether this relates to TV 2 Sport as well, where a linear subscription is currently separated from an online subscription. Kosberg answered: «we think exactly the way you think as a customer», and said that they want to provide one experience, not separate offerings. She further explained the reason for the separation of products as they exist today; which is that the distributors own the customers who subscribe to a linear offering. This means that «if you are a customer of CanalDigital or Get, then they have all the customer data. We do not know who out there subscribes to TV 2 Sport on television, so we cannot give you access on all networks», Kosberg told us. The same applies to access through Apple and iTunes among others, where the content providers lack access to information about who the customer is. If the customer has access directly through the content provider – which is the case with Sumo – TV 2 can give him or her access everywhere, Kosberg emphasized. She continued by saying that «our strategy is

to become platform independent, because we believe that this is the most logical approach for the user». This is not necessarily possible if the content provider use aggregators, according to Kosberg, because the aggregators will chose which platforms to support. She also accented that most of the aggregators want to have direct access to the customer themselves. This will according to Kosberg mean that «if for instance Telenor takes the role as an aggregator, they will force you to choose Telenor as a supplier of TV, mobile and other services, and then you get the package they have chosen».

While we talked about global players such as Apple and Google, it was clear that they act both as threats and provide opportunities for content providers. «It is obvious that for instance Apple, Google and others that develop new devices create new operating areas», Kosberg said, «but at the same time we lose access to all the customer data and the customers, because of their business models». She emphasized that it is very important for TV 2 to have direct access to the customer, but added that «in some situations it will be more important for TV 2 to be present on new user surfaces – for instance in the example with Apple – than having direct access to the customer».

Kosberg believes that linear television will survive, even though many believed the opposite a few years ago. Her reasoning is based on the trends we see today. She said that «viewers want the social aspect that encircles a linear broadcast, and in particular live events. Such telecasts have got more viewers than ever before. We see the same trends with 'Norske Talenter' [Norwegians got talent] and weekend television in general, where you would like to be social». A prerequisite for linear broadcasts to be social is that they are centered on live events, broadcasted simultaneously all over Norway, or at least in a specific geographic area. This is something Kosberg said TV 2 wants to keep, both because of their strong position and also because of commercial aspects such as advertisement. She continued stating that «this will require programmed broadcasting schedules in linear channels, and this is also something that makes us partly afraid of others taking the role as an aggregator».

Deciding on a future revenue model is a difficult subject according to Kosberg, in particular because Norway is such a small country. She said that «Sumo is a subscription service, so we at least have some predictability regarding our revenues the next month. This gives us the opportunity to invest in content». Kosberg added that the uncertainty is vastly increased without subscription payment, mainly because of the difficulty with foreseeing what content will succeed on television. Further she said «if we don't get subscription solutions with predictable revenue streams – at least short term – users will experience less available content because of the uncertainty of whether it will sell or not». This is why Kosberg believes a majority of providers will try to establish a subscription based business model, but she emphasized that we will still experience transaction-based pricing as well. She also mentioned that it has become more common for consumers to buy content online, and that the number of users that do this increases every month. However, there are greater risks regarding quality-of-service with distribution over-the-top than with distribution across end-to-end networks. This increases the difficulty of charging high prices for over-the-top deliveries, according to Kosberg.

TV 2 recently spun off their internally developed Sumo technology in a company called Vimond Media Solutions. Kosberg told us that «this was unique when it was developed nearly 10 years ago within TV 2, and it was something very few did world-wide. Today we experience that similar technology is more or less sold off-the-shelf, but we believe we have a good solution for that shelf». She said that instead of using a lot of money to develop something alone, TV 2 will try to utilize their advantage and see if it is possible to sell this product also outside of Norway. This is closely connected to TV 2s belief that it is the content that is important, and as long as they deliver good enough quality the user will not care whether they use one technology or another. Spin-offs like this are also

something TV 2 has previous experience with through for instance Vizrt and StormGeo.

The development in the industry the next five years

Kosberg imagines that the big difference between TV today and in five years is that the television experience will be more ubiquitous and social in the future. She says that there will be «events tied to the TV experience that you perceive as social; that this is something you share with others». At the same time, consumers will watch TV in multiple locations, more than they are used to today. Watching television will not just be something consumers do in their living room or in the bedroom at home, but they will explore TV on their cell phones at the train or on whatever device they carry around. She emphasizes that «you will at least expect that you can bring the experience with you». Kosberg also believes that the amount of television distributed over the Internet will be massive, but that we have to wait at least ten years before the consumption of Internet distributed television exceeds linear television.

5.3. Governmental agency interview

Interview with Norwegian Post and Telecommunications Authority

Date	05. May 2011
Interviewee	Knut Sinkerud, Chief Engineer, Norwegian Post and Telecommunications Authority
Type	Phone interview

The Post and telecommunication authority (NPT) is tasked by the government to investigate the potential need for regulating both the telecommunications and television market in Norway. NPT was contacted for an interview with the aim of learning if there were talks of any form of regulatory intervention in the TV-industry, and also to obtain their view on the current industry development.

Today's situation and current business models

NPT as a governmental authority plays a big role when it comes to the regulating of the aforementioned markets. When NPT is evaluating these industries they do not distinguish between TV-services and traditional telecommunications services with respect to regulations, Sinkerud told us. The point was made with an eye towards convergence, as convergence is something that we have seen in the telecom industry for a long time, and which recently is becoming a reality also within television.

One important aspect that has emerged as a result of an increasing amount of services that utilize the Internet as a distribution channel is the principle of net neutrality. According to Sinkerud «[NPT] have been a pioneer player in Norway with respect to net neutrality». He explained the importance of this principle with and example from the telecom industry: «Challenges can arise with respect to how incumbents react when competitors like Skype knocks down the back door of those who deliver traditional telecom services». The point being that those who own and operate the Internet-infrastructure, which is used for many of the emerging services, potentially will utilize their position for effectively locking new entrants out of the market. Such actions would challenge net neutrality and is one of the results of convergence, Sinkerud said.

Complications in the industry

One recurring discussion in the industry is open networks. This is an issue NPT has looked more closely at and recently they released a report on the topic, Sinkerud said. The supporters of open networks claim that they would stimulate the competitive environment and increase the options available to consumers. «In relation to the initiative from [the political party] Høyre on open networks, we concluded in our report

that the competition in over-the-top services would be so tough that forcing an opening of the traditional networks such as IPTV and cable would not accomplish anything», according to Sinkerud. The competition traditional players will meet, will be tough enough anyways, he commented. Therefore NPT will not pursue this issue any further as the situation is today.

Voices have also been raised with respect to the strong position traditional players experience in the market today through being vertically integrated silos owning the network, being the Internet-provider, and also the TV-service provider. Even though Sinkerud believes that the competition going forward will be strong enough, he comments that NPT has concluded that there are some competitive challenges in the market today. NPT has worked for many years on increasing the competition for delivery of services to housing communities, but because of the bundling of telecom, TV, and Internet-services that we have in the market today, switching service provider becomes very difficult and this hampers the competition.

One of the issues with the current development in the industry is establishing business models that benefit all those involved. Being a distributor is often synonymous with being a network owner. And all of the distributors in the wired market also offer Internet-connectivity as a service in addition to TV. They are now becoming afraid that content providers will circumvent them as aggregators and deliver content directly to the consumer over the open Internet. As a solution to this they have suggested that content providers pay part of the cost of distributing capacity intensive video content over the Internet to ensure that they still have sufficient revenues to extend the infrastructure. NPTs standpoint on the issue is that this is not something they will involve themselves in, but Sinkerud mentions that he believes that «the different industry players will have to solve this issue together, because I at least think that the situation is somewhat unstable». In essence this is something that the players in the industry have to work out themselves, and not something that can be solved with regulations.

Capping the amount of data a consumer can receive through his Internet-connection each month is a development we are seeing both in Canada and the U.S. In this scenario users are charged extra if they consume more than the limit imposed by their Internet connection. This will effectively limit the amount of video he can consume over the Internet. In Canada the post and telecommunications authority CRTC is attempting to regulate the Internet in this direction, with the aim of easing the pressure on Internet capacity. When discussing the topic of whether this would challenge the net neutrality principle Sinkerud's response was that «what we are discussing now is whether the market forces will regulate this. If it is well known in the market that AT&T or others say that you only get transferred a certain amount of megabytes, then there might be others who say: We have fiber and can give you exactly what you want». On the direct question of whether this was something that NPT potentially would regulated also in Norway, Sinkerud did not want to speculate, but said that it sounded somewhat unlikely.

The introduction of over-the-top services for television have raised some fear with incumbents who are not sure how to approach this new market development, and who are afraid that they will only be the provider of a dumb pipe for transmitting data. Sinkerud exemplified his view on the issue: «Let's look at Canal Digital and Get who are the biggest players in the market. If they are not able to ensure their market position they could experience a decrease in subscribers, just like the cord-cutting we are seeing with cable companies in the U.S. If they cannot stop this, then the development will be towards them actually becoming dumb pipes». The uncertainty of it all, he said, is what kind of development we will see and how the incumbents will face it.

The future situation and related business models

With regards to the current development in the industry Sinkerud said that «one should not forget that the development we now are seeing with tablets will highly

influence the development of TV-services».

On the note that distribution incumbents currently are displaying fear of OT-services, Sinkerud's comment was that «generally, in my opinion Get and Telenor have to develop an over-top-top offering. Telenor has this more or less in place, or are about to get there. But Get does not, and the same thing applies to Altibox for that matter. If they feel that the risk of losing customers due to over-the-top services is realistic, then they have to enter that arena themselves».

One of the recent trends with respect to Internet-distribution of video content is developing and utilizing CDN-networks. A CDN-solution that NPT discussed in their report *Internett i endring* (Internet in transition) is the one being worked on by BT in Great Britain, called BT Content Connect. About CDNs in general Sinkerud's comment was that «this is a perfectly reasonable and proper development – very exciting in a way». The fact that Norwegian players are doing the same thing is something he expects, and to his understanding this is something that has relatively high priority among the large Norwegian players. According to Sinkerud PTs view on the subject is that CDNs have emerged as a sort of disruptor, because they are entering into the incumbents own networks with their servers. «This is a major challenge when it comes to the network owners who could be left in a position as a dumb pipe».

The problem with CDNs, Sinkerud told us, is that the biggest player Akamai who have about 60 percent of the market world-wide is in possession of close to 100 patents. Whenever somebody enters the market with a solution that is similar to their patents, Akamai takes them to court. «I believe that Norwegian players either have to enter into cooperation, or build their own [CDN]. In that case they are dependent on top-notch technology to be able to compete with Akamai. It may well be that some distributors continue a partnership with Akamai, but my impression is that Akamai not necessarily will let the ISPs have a piece of the pie». Therefore, when Norwegian players are pursuing their own CDN networks, it is exactly a measure to recuperate the revenues they are chasing as they are claiming that content providers should pay part of the bill for OTT-distribution, Sinkerud said.

What will happen to competition if open networks actually do become a reality? In the report *Internett i endring* the following statement by NPT could be found: «For a service provider less lock-in could lead to fewer customers and lower revenues. But the service provider will then also have the opportunity of offering his services to new end customers. Moreover, an increased amount of service providers and increased freedom of choice will increase the loyalty of end customers. This could ensure the network owners long-term planning and also greater revenues». How this conclusion could be reached puzzled us, and thus we asked Sinkerud to elaborate. He told us that this should be seen in connection with large service providers' [distribution incumbents'] position to offer one-stop shopping. If the consumer is connected to a network where he can get all the content and services that he would like from one provider, which is often the case with incumbents who also carry some of the products from their competitors. For example Viasat programming is carried by cable and IPTV distributors even though Viasat themselves are a vertically integrated content provider and distributor. When this is the case it is less likely that the DTT-network or smaller OTT-entrants will be of interest to the consumer. «What I'm saying is that if you have an open network and a service provider is able to offer you all what you want, then you are less likely to switch provider. I simply think that the consumer churn will decrease», he said.

The development in the industry the next five years

«There are probably some big changes coming», Sinkerud started. Take RiksTV as an example, they have just started to turn a profit, but several people have voiced their skepticism as to how they will do going forward, Sinkerud told us and continued: «I believe they are a headache for politicians [who initiated the project] as a result of their uncertain future». Another example is

Canal Digital. Telenor recently released their quarterly report on their businesses. It does not look like that Canal Digital are making as much money as before, Sinkerud said. There have also been several news bulletins speculating that Telenor is considering selling off parts of their broadcast business. Telenor just started a new company with the goal of offering their own OTT-service. Sinkerud takes this as a sign that Telenor is doing what they always have done, namely positioning for the shift in this industry through supporting several business models in parallel while they evaluate the market development before they ultimately get rid of the ones that have no future.

Sinkerud also emphasized that «we should not forget the development in mobile services and the seamless integration between platforms. I believe that mobile services and seamless integration will be prominent subjects in the next couple of years».

With regards to potential regulatory change that might appear in the TV-industry in the coming years, Sinkerud responded «as you know we are looking into CDN-services and players during this year. The problem is the dynamic nature [of the industry]. We do not really know yet how this will develop». One example of the development is Ericsson's work with CDNs in combination with mobile technology. «Placing CDNs even in base stations is something I believe might happen, precisely to ensure quality of service when delivering content to all the tablets that people are carrying around», Sinkerud said. He also believes that mobile will be a driver with respect to what services we will eventually see on the living-room TV-set.

On a final note Sinkerud mentioned the development in 3D-services for the TV: «I believe that this is moving quicker than for example NRK is willing to admit», and that «[3D] might be common in only three years' time. Maybe not as common as HD, but it is coming quickly. The development in production equipment has come a long way during the course of one year». He finished with «what I am saying is that we have just about been able to shut down the analogue terrestrial network before 3D is storming in».

Telstra Australia

EXAMPLE 2

In mid-2009 Telstra revealed a new ambitious TV-service that was to be rolled out across Australia. Instead of going the traditional telco-route of offering a managed IPTV solution over their current infrastructure, Telstra decided that over-the-top was the way to go.

The decision to go over-the-top was based on cost considerations. Managed multicast IPTV would be a very expensive solution given the Australian topography, while an OTT-solution would not entail the costs of expanding existing infrastructure to handle IPTV. Since OTT-solutions scale much faster than building fiber infrastructure, it allows for much quicker market adoption. Telstra's strategy was also to make their TV-services available on all devices and to anyone with an Internet-connection. This could only be done through an OTT-service combined with building a CDN-network, and not through a single managed network.

Another consideration Telstra had to make was whether this new service would cannibalize the content provider Foxtel, of whom they have a 50 percent ownership interest in. Their conclusions were that as long as the OTT-service had a different set of target customers it would allow them to increase their total customer base.

In Australia capping is normally enforced on Internet-connections, but Telstra does not charge their own broadband customers for data-usage related to use of the OTT-service. The strategy was to get people to consume more broadband, and thus switch to Telstra to avoid the cap.

«The business model was all about using video to sell data – and it's done that» (Ben Kinnealy, Telstra, IP&TVworldforum)


INPUT
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5.4. Digitalforum – Conference

The following sub-chapter is a summary based on the opinions and thoughts as provided by the participants of the conference Digitalforum (2011) in Oslo titled *TV in Norway in 20xx*. In generating a coherent summary of the event four general themes emerged:

- Creating a ubiquitous television experience
- Handling on-demand alongside linear television
- Rapidly changing technology
- Finding a viable business model

Quotes and information given throughout the conference has been assigned into each theme category, and this has been bridged together to illustrate the complete picture of industry thoughts on these themes.

Presenters

- Brian David Johnsen,
  Futurist and Director, Intel Corporation
- Helge Sønneland,
  Special advisor, Ministry of Culture
- Bjarne Andre Myklebust,
  Head of IP Distribution, NRK
- Trond Johansen,
  Chief Editor On-demand Services, NRK
- Sven Størmer Thaulow,
  Director, Telenor Internet Content and Services
- Paal Jansen,
  Sales Manager, Samsung
- Jostein Skaar, Department Director,
  Norwegian Competition Authority
- Audun Skeidsvoll, Director of Consumer Policy,
  Consumer Council
- Leif Ims,
  CEO, Altibox

Participants in the panel debate

- Roger Solheim,
  State secretary, Ministry of Culture
- Hans-Tore Bjerkaas,
  Director general, NRK
- Torry Pedersen,
  CEO, VG
- Hein Hattestad,
  CEO, MTG

Creating a ubiquitous television experience

The entire industry is talking about ubiquitous TV. Consumers are no longer watching TV only in their living room, they want to bring it with them wherever they are, to watch whenever they want on the device that they have available at that time. TV is moving towards multiple screens. When this happens there is an increased need for distributors and content providers alike to give the consumer a uniform experience, regardless of time, place, and device the TV-content is being consumed on.

Total TV-consumption in Norway has been steadily rising over the last decade and industry experts talk about TV as part of our culture. According to Brian David Johnsen «television, in 2015, will still be the center of people's lives». The only thing that is changing is the definition of television. During his research for Intel Johnsen has found that from a consumer viewpoint TV is not just the TV-screen anymore. People are starting to and will continue to consume television on different devices. Johnsen stated that «television will start to become, and entertainment becomes, ubiquitous. With things like the iPad, the iPhone and the Internet people are able to take their entertainment with them throughout their day. And what happens is that these devices begin to tailor themselves to our interests». Jansen agreed and stated that we most likely will watch more TV in the future the only question is «in which way will we watch TV».

In near term the possibility of switching between screens can be done inside one's home, where all the screens are connected to the same Internet-network. «With the help of DLNA one can watch content on several devices […] the fact that one wirelessly and simply can transfer the content from the main unit in the living room, often the TV, makes this very flexible and simple», Jansen said. The point being that if one for instance has rented a movie one can watch it on all devices in the same home through wireless streaming between devices.

Ims from Altibox presented their vision as «what we want in Altibox is to provide our customers the best offering from our content providers, presented multi-surface, multi-screen and adapted to the new media world». He also pointed to research they had performed which showed that 30 percent of all media consumption by teenagers is a combination of consumption on several screens simultaneously. But as Solheim commented; «[Norwegians] are conservative when it comes to media consumption. We are adapting, but we are adapting slowly».

An important aspect of the future of television is the experience. As more and more of the TVs being sold comes with an option to connect to the Internet it is believed that TV-services can be significantly enhanced for the consumer. NRKs Bjarne Andre Myklebust pointed out that recent numbers show that 30 percent of TVs sold in Norway in 2010 were equipped with an Internet-connection interface and that this number will increase to about 50 percent in 2011. At the same time he asked: «Connected-TVs will sell, but will they be used with the regime that we have now? That is the question». Today Internet connected-TVs offer two separate experiences; either the consumer is watching regular TV or he is using Internet services. The industry believes that creating a seamless integration of TV and Internet-services is the key to a new and better TV-experience. Commenting on the use of connected-TVs today Myklebust said that «this is not good enough, and therefore hybrid solutions are better».

Hybrid-TV is a concept being worked on by several industry constellations. Their aim is to seamlessly integrate Internet information with linear TV-programming in order to provide the consumer with a larger array of choices and information that is relevant to the content that he is currently consuming. Myklebust said that this is the direction in which broadcasters wants the development of the TV-experience to move.

One important aspect that was mentioned by several of the presenters at Digitalforum was that while it is fine for experts to be talking about all the technological aspects of the TV-future, it is important not to confuse the consumer. As TV is moving towards a ubiquitous service the consumer should be presented with a holistic user experience independent of technology and device. This is exactly what was communicated by Ims: «We don't believe consumers care at all as to [with what technology] the content is being delivered». A complication with this future is all the talk about platforms and differentiation between them. Bjerkaas from NRK summarized this with the statement: «To me it's nostalgic to believe that the border is between technology platforms – what we really are talking about is the content».

Tomorrow's TV-experience will not be bound to the living room. It will be ubiquitous and not defined by the device it's delivered to, something Johnsen exemplified by stating that «it's not so much about the TV, the PC or the smart phone. It's just a screen».

On-demand will emerge alongside linear television

With the advent of the Internet as a distribution channel for TV-signals it is becoming clear that current distributors utilizing other technologies (i.e. cable, satellite, DTT) are facing a potential challenge from both new entrants and altered consumer behavior. This is especially since consumers on a much larger scale are moving towards wanting to watch content on-demand.

Regardless of increased on-demand consumption, no one believes that it will be the end of linear TV.

«Linear day to day content will never go away, and the reason why, is that people like it», said Johnsen who also stated that «consumers want choice, so they'll always want both». He is supported by Myklebust who said «our opinion is that broadcasting technology still has a lot going for it, and watching content live will be prominent going forward. It will never go away, even though much viewing will be on-demand». Also Thaulow of Telenor stated that «we have a strong belief in that the traditional ways of distributing TV will last for a very long time».

Even though several options for on-demand consumption are already visible in the market, Ims said that «the growth in time-shifted TV-consumption has been larger than the growth in linear consumption […] this has still not fundamentally altered the TV-consumption habits [of the users]».

There is also another line of reasoning that supports the continued existence of live broadcasted TV, regardless of technology used for distribution. Altibox has found that «the most popular on-demand content is drama, while the least popular is news». Some content has the highest value when it is consumed live, such as news and sports events.

Norway's largest non-commercial broadcaster, NRK, is in the process of launching their own OTT-platform for distribution of television content. Their reasoning for doing it themselves was illustrated by Johansen: «It's really about rights, what we can legally do. We are not allowed to let other third party players distribute our content in closed networks».

One of the biggest advantages of Internet-distribution is its support for on-demand consumption modes, but it currently also experiences some drawbacks with regards to distribution of live content. When NRK broadcasted live over the Internet from the FIS Nordic World Ski Championships they had «135 000 simultaneous uses who had a good experience, but if there are 1 million users – which there easily could be – then I'm a little more uncertain as to how it would have worked over the open Internet», Myklebust said.

Changes in both consumption modes and distribution technology are causing industry players to face tougher consumer demands. Thaulow said that «we are an agnostic aggregator, meaning that we have to be able to deliver services over all networks. And that does not necessarily mean our own network […]. Some customers have broadband from NextGenTel, and then they have mobile services from Telenor. We have to deliver for example a TV-service to the end customer regardless of which network he is on. There are a lot of challenges concerning that. There are contracts with other networks, quality requirements that need to fit together and so on, but the customers are forcing us in that direction. We strongly believe in an agnostic aggregator». Altibox is also being pushed in that direction by their customers: «Generally they tell us that everything needs to work, always. This is something the distributor just has to make work», Ims said, continuing «we have to make it so that the content embraces the whole family and follows the consumer where he is, on the different devices».

Rapidly changing technology enables future television

Infrastructure and technology was another recurring topic at Digitalforum. Currently there is a large market fragmentation with regards to both infrastructure and the technology utilized for consuming TV-content.

As more and more content is being distributed using the Internet one of the biggest challenges is the quality of the service. This important point is recognized by both content providers and owners of Internet infrastructure. «The challenge with the open Internet is that NRK cannot guarantee quality from end-to-end», Johansen said contrasting Internet-distribution with traditional distribution. He is supported by Thaulow who stated that «delivering OTT-services with high quality to several devices on different networks is very challenging». Johansen called this a technological Gordian knot. «It is impossible to handle the whole thing holistically», he said referring to different video formats, quality encoding and devices. The reason as

to why we need the Internet to become a realistic alternative for TV-distribution is according to Johnsen that TV is moving from being digital to becoming data.

A special characteristic in the Norwegian market with regards to infrastructure is the lack of comprehensive regulations for building out cable infrastructure on public land, according to Sønneland. As long as this is regulated on a local basis it is hard to guarantee that the entire population will be offered adequate Internet-connections that support the new TV-services. This drives costs for infrastructure providers. They feel that as content services move online they lose their opportunity to provide the consumers who they connect value added services, and thus the distributors will lose revenue streams long term.

The industry is in agreement about that standardization is one of the most important aspects to be handled going forward. This is both to reduce the total costs for all supply chain actors and also to provide the consumer with the most flexibility and freedom of choice. In order to ensure interoperability and competition on equal terms, Sønneland and his committee concluded in their recent report that «considerations must be made on developing a standard for distribution of TV-signals over all networks». This conclusion is supported by Skeidsvoll in the consumer council who stated that it «assumes a start and hopefully continued development of the Internet as a more future-oriented infrastructure for TV-services, either as web or OTT-services».

Currently standardization work is being carried out by several consortiums, such as HbbTV who is working on a hybrid-TV solution. «The good thing about this is that I believe the industry has seen the need for cooperation», Myklebust said. He continued by stating that the current generation of hybrid-TV-solutions needs a lot more development when it comes to standardization. Samsung is one of the equipment producers that are embracing the fact that consumers does not want to adhere to a myriad of different standards depending on who they buy their equipment from or who provides their TV-service. «No one want's to buy a box», Jansen said quoting Steve Jobs, and continued: «This is something we are focusing on a lot. In most of our TV-models we are now including three tuners, for cable, satellite and DTT networks. And I can promise you that this will continue to become more and more important for every year that passes». NRK also believes in hybrid solutions. Bjerkaas commented on their recent success in broadcasting over the Internet during the FIS Nordic World Ski Championships: «Compared to the 135 000 who watched the men's relay at the same time, there is a long way to go to 1.7 million. This is why we believe that the favorable future, the superior utilization lies in combining broadcast technology with Internet technology seamlessly».

Ims summarizes how several industry experts view the future with his statement that «some have predicted the death of IPTV distribution in the same way as they have for traditional forms of TV-distribution, but we don't think the consumer cares at all as to how the content is being delivered. To us it's not important that IPTV is the future. We are relatively non-religious when it comes to that. We are concerned with one thing and this having sufficient capacity. At the same time we believe that technologically, IP will dominate in the future».

The industry struggles with finding a viable business model

When talking about the future of the industry one can see some glimmer of hope amongst all the concern around the challenges players are facing. Johnsen's outlook was that we will have «more content than is humanly knowable, more devices than there are people on the planet that can get that content. Now that's very interesting, there is a lot of opportunity there». Simultaneously current players are realizing that «the customer needs plus the existing business models within the supply chain for TV-distribution over the internet do not add up», according to Thaulow.

Players need to consider cross-industry cooperation

In order to increase the total value of the market and make sure everybody get a decent piece, content creators, content providers and distributors must find a way to work together. Myklebust emphasized this point by saying that «I don't believe that the solution to the Internet-infrastructure problem is broader and broader pipes. We have to be more intelligent. We need to cooperate better, and we need to think of smarter ways of distributing the content closer to the consumer. When it comes to this I believe the industry is getting on track with looking at such solutions instead of just arguing about capacity. I don't necessarily believe that [capacity] is what it's all about». He gains support from Thaulow in Telenor who proclaimed that «in Norway – but also in the Nordic region – we have to gather our strength across a set of industries to position us against big global actors. At some point they will break into the existing supply chain and they will take away the margins from our business. This is true across the telco, content and media industry».

Jansen from Samsung was also in agreement with the importance of industry players talking together. They do not only have to talk about standards, but also about how one in the most economical way can offer the consumer a high quality service that works across the board. Cooperation on standards is of importance to everyone who part-takes in this supply chain according to Bjerkaas at NRK, who claimed that «the biggest danger of not speeding up the standardization work results in different technological standards from different equipment suppliers. This will be impossible for content providers to handle». Hattestad added to this and pointed out that standards are also a lot about the opportunities to capture revenue. He said that «this is really what it's all about. We end up with the essential questions: Where is the money?»

While the industry players are talking about the necessity of cooperation, the Norwegian consumer council weighs in with another point of view. This is not one that is necessarily in opposition with cooperation around standards, but one that emphasizes the need for distinguishing between the players role in this industry. Skeidsvoll said that «in the Consumer Council's opinion there should be airtight barriers between the infrastructure supplier and those who deliver content, services and equipment». This is to protect what many feels is one of the most important principles of Internet as we know it today, and that is net neutrality. The Consumer Council also reacted to a statement given by the CEO of a prominent distributor in the industry who owns infrastructure and claims that they need to find business models that protects them from only becoming an infrastructure supplier. Skeidsvoll said that «we feel that this is a grave underestimation of their role as a responsible supplier of the most important infrastructure we have ever had; an infrastructure that supports democracy, development and innovation». He continued by arguing that the principle of net neutrality is an important foundation for the development of Internet-based TV-services that are able to compete with other forms of TV-distribution.

The industry is struggling to agree on technology

When the industry is talking about standards as a cooperative measure for bringing the entire industry forward there is a good reason for it. The technological aspect of the development has been rapid, and everybody wants a piece. This is creating a fragmentation in the market that is not sustainable long term. According to Myklebust «another thing that is challenging is […] that there are a lot of different types of content and different technology that is used by the distributors with regards to making this Internet-distribution work. There are also a lot of different business models being used; making it hard for content providers who want to enter with their content because they have to relate to many different types of contracts just to be present in the market».

Currently content providers have to make a lot of adjustments to get their content out to the different types of equipment and platforms. This is something

that drives costs for content providers in a way that makes it hard to deal with, according to Myklebust.

The development in technology does not only bring challenges to the industry, but also some new opportunities to be embraced. Ims – who is the CEO of a company who distributes only via IP-technology – believes that they have «a very good opportunity to provide access to content to be consumed other places than just from the sofa», and that they can develop their existing TV-offering and «provide the consumers with increased value», he said, referring to the value proposition of a business model, which is of great importance to retain and acquire customers.

Some have speculated that Internet will kill television as we know it, but Johnsen invalidated this notion and said «what we learned is none of that is true. What we learned is that it's not about one device to rule them all, it's about whatever device people have at hand at the time». With this he indicated that in spite of technological advancement the existing TV business model will continue to thrive, but in competition with new ones. Thaulow also mentioned that «[Telenor] have a strong belief in that the traditional ways of distributing TV will retain their position for a very long time».

Positioning for future substitution is key

The fact that the competitive environment is changing was emphasized by Thaulow who said that «the game is about to become regional, if not global, in industries that have been highly national». This kind of change forces players to alter their tactics and strategy. Telenor's plans are primarily to strengthen their existing investments in broadband and TV-distribution. They will be building Internet-based services that are provided alongside their current offerings. One thing that often becomes evident in an industry driven by technological development is substitution. Substitution becomes a business model matter that must be planned alongside all other activities. Thaulow commented on Internet-TV and on-demand consumption and said «we are positioning to substitute our own services in those consumer segments where that behavior is prominent».

Ims pointed out that «established large players, like the former telco incumbents in the national market are now embracing OTT-technology and utilizing disruptive technology to a greater extent than before». The challenge is that this change is accompanied by a lot of uncertainty. Hattestad's view was that «we are moving towards a new way of thinking that short term may be a little dangerous, because we don't know if we can recuperate the investments and we don't know if we long term will be able to generate the same revenue streams. […] We are getting into some new business opportunities which are untested waters. That is why it's dangerous to predict the outlook three years from now».

Some are afraid that the TV-industry will make the same mistakes as the music industry did: «Ten years ago the music industry was being told what was going to happen, but they didn't believe in it, and then it happened. And that is where we are with TV right now. When you first start moving towards atomization [of content] that the Internet facilitates, the business models are in danger of being pulverized», Pedersen said. Thaulow also commented on the fact that working with content providers of video and television brings forth many of the same challenges as the music industry faced; namely «protecting existing revenue streams, and at the same time start with new ones, thus maximizing the profit within different forms of distribution».

It is challenging to balance separate business model archetypes within a company simultaneously. «For distributors and content providers both, the biggest challenge is to know when one overtakes the other», Hattestad said with an eye towards substitution between existing business models and the new ones that are a result of industry change. Pedersen stated the exact same thing: «One of the big challenges is whether it's possible to maintain the business models in the TV-universe like they are now».

Licensing rights are lagging behind in a digital world

Rights management is a large part of what is difficult with respect to business models and the emerging trends with OTT-distribution in the TV-industry. The difficulties was illustrated by NRKs Johansen when he talked about their own efforts to develop an OTT-platform, saying that they were doing it as a result of rights management issues and what they actually legally can do. NRK is not allowed to let others distribute much of the content they themselves have sourced externally in closed third party networks, he said. When a content provider is held back by rights management it indicates an even more challenging task for distributors to overcome. Rights management is an immensely difficult activity related to the television industry. This was exemplified by Pedersen who said that «when we started with TV, I was given one advice: Get more lawyers!»

State secretary Solheim at the Norwegian ministry of culture – who are ultimately responsible for the regulation of this industry – weighed in with the following statement: «The ownership laws for the media industry are based on the old analogue system. We will commission a committee soon to review the media ownership issue to see how one can adapt it to a digital life».

It is all about creating a consumer centric business model

Another observable shift with regards to business models in the TV-industry is customers are viewed. Ims from Altibox commented that «the question is: what does it take to succeed with a TV-offering in the future? At the very least we, as a distributor, have to facilitate the content from our suppliers to the consumer, and the consumer must experience a form of interaction between the platforms». Ims also commented on the consumer want as a solution that always works, and that this is the distributor's responsibility to ensure.

The Consumer Council also pleaded the case for the consumer. Skeidsvoll stated that «freedom of choice is a fundamental consumer right», referring to the consumers' right to choose his content and also from whom he receives it. Skeidsvoll also mentioned sufficient network capacity and net neutrality as two factors that are crucial for achieving larger freedom of choice in the TV-market.

How will it all turn out?

In general the industry is uncertain as to how things will turn out. In an attempt to shed light on this theme Hattestad said: «I believe the biggest challenge for all of the commercial TV-industry is moving away from relatively well known revenue streams to untested waters where there also are a lot other players». He continued with: «I don't think it's easy to say – neither with content providing nor distribution – which will be left with the biggest piece of the pie».

Thaulow's statement summarized the general trend: «The industry is about to change from [vertical] silos to lasagna [horizontal integration]. It is the eco-systems across devices that now are starting to dominate and not the supplier of either the TV-solution or the communications solution. The large global eco-systems that are represented by both Google and Apple – and in which Samsung wants to position themselves – those are a challenge to us. Especially if they become very, very strong».

5.5. Data from a consumer survey and a focus group study

The authors were given access to a data set collected by another group of students working on a project focused on Apple TV, which is a connected-device for TV. Results from both their consumer survey and a focus-group study are given in this section as they depict some of the behavioral aspects of Norwegian TV-consumption. The reader should note that the demographics of the survey respondents and focus group participants are skewed somewhat towards the young and highly educated parts of the Norwegian population.

Findings from the consumer survey

Most of the survey respondents were familiar with streaming technology and 80 percent had also used online streaming as a way of accessing video or TV-content (Figure 20 and Figure 21). This shows that both the market awareness and the market penetration of streaming technologies with respect to Norwegian consumers are high. While the TV-set still is an important device for watching movies and TV-content, the survey results indicate that the computer has become a just as important device for this type of content. Actually 32.9 percent of the respondents stated that a computer was used extensively for watching video, while this number was 31 percent for the TV itself (Figure 22). The consumer survey also tells the story of an audience that is not to critical about piracy. 61.6 percent of the respondents indicated that their feelings towards piracy lies between neutral and being a big fan (Figure 23).

These results paint the picture of a population that is willing to utilize online services for satisfying their viewing needs, and that they are open to piracy when this is the most convenient option available. This form of consumer behavior should create some reaction with industry incumbents.

Findings from a focus group study

The following is an excerpt of the most important findings from the focus group study that was performed with participants in the age group 20 – 25 years old. The focus group consisted of seven participants.

All of the participants, but one, download media content from the Internet on a regular basis. And for most of them this did not result in any form of a bad conscience. The participants indicated that watching linear broadcast-TV was a pass time activity, and that if there was a TV-series that they actively followed, they would rather download it:

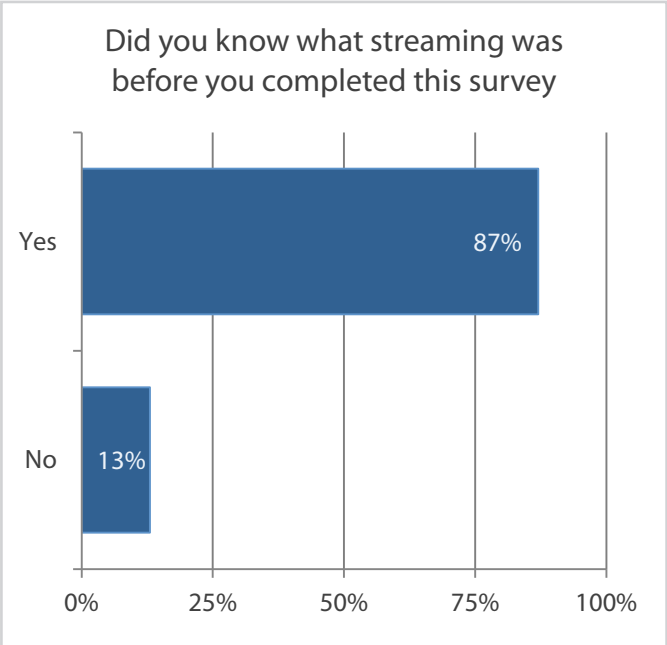

Figure 20: Consumer knowledge about streaming
Source: Apple TV consumer survey (2011)

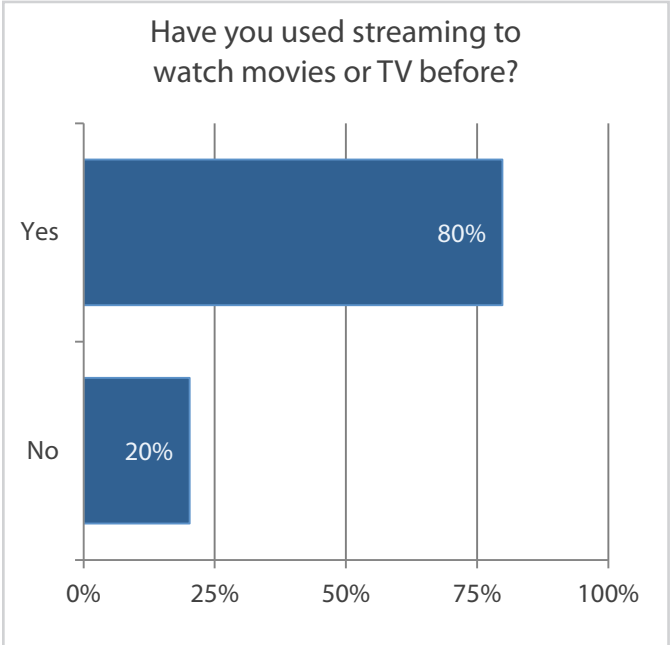

Figure 21: Consumer steaming experience
Source: Apple TV consumer survey (2011)

«The things I want to see on TV, do not run when I have got time to see them»

One of the reasons for not watching – movies in particular – on broadcast-TV was due to commercials. One participant had stopped watching TV altogether as a result of too much advertisement. She would rather watch exactly what she wants when she has the time.

Before the era of Spotify the participants noted that their download behavior with respect to music was more frequent. However, the need to download content was not the same anymore, as the new services allows for immediate access to a large amount of content. When it came to movies only one participant had paid for online streaming access.

«I wanted to gain access to it quickly, and did not want to spend the time necessary for finding a pirated version»

The participants also illustrated one drawback with the current services for online streaming. They are most commonly available from a computer, but consumers would prefer to watch the content on their TV. Connecting the computer to a TV-screen is an option, but this requires technical knowledge and is thus a barrier that one must overcome in order to experience online content on the TV. They still opted for the computer as a device for consuming TV-content: A computer allows access to everything, regardless of time and place. The participants believed that this type of convenience also would be the future of TV.

5.6. Empirical data research as a foundation for further work

The process of interviewing industry professionals and attending an industry conference has for the authors been a fundamental activity with respect to understanding the drivers and tensions within the Norwegian television industry. Prominent issues uncovered include future infrastructure development, platform creation, changing consumer behavior, rights management, fragmentation with respect to technological standards, and competition for end-consumer ownership. Through providing extensive summaries from our learning activities, the reader should be able to quickly get up to speed on the current industry development. Based on the knowledge garnered throughout this process, the following section will highlight the respective issues and discuss how they affect industry business models.

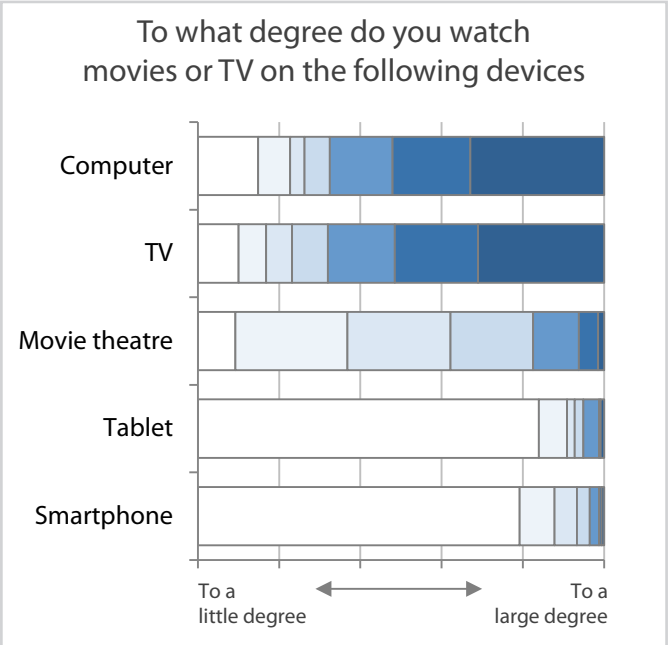

Figure 22: Consumption on different devices
Source: Apple TV consumer survey (2011)

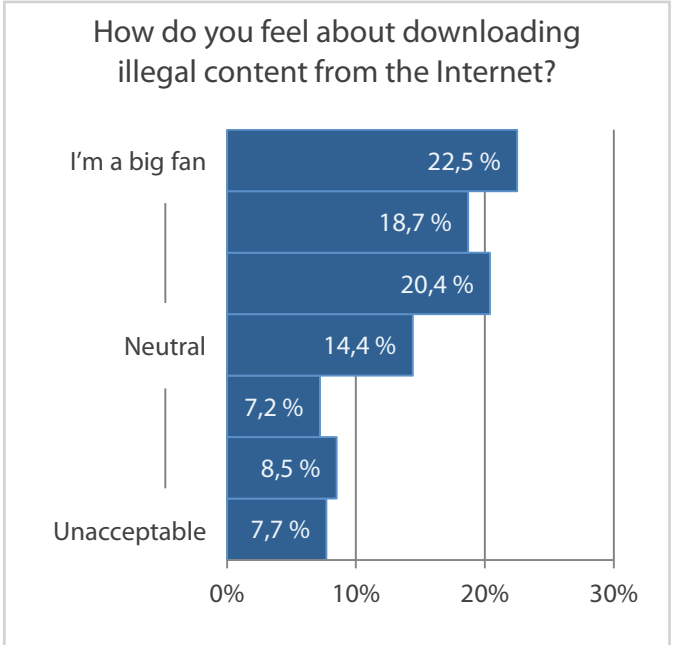

Figure 23: Consumers' attitue towards piracy
Source: Apple TV consumer survey (2011)

Complication

6

Key Challenges for TV-distributors

All the empirical evidence collected through interviews, the conference and market research indicate that the actors in the TV-industry are facing several challenges going forward. In this section these challenges are presented and mapped according to how they will have an effect on business models for TV-distribution. This synthesis of findings will be the foundation for suggesting business model innovations in the following section.

6.1. Infrastructure developments are essential for enabling future services

Limitations in one-way communication networks

Almost 50 percent of all Norwegian households are connected to a wireless TV-service, either a DTT or a satellite network. These distribution networks are built for one-way communication only, thus distributors who utilize these networks for offering TV-services face limitations. Also the current one-way communication networks are inherently more costly to maintain, according to Lynum at RiksTV.

The DTT and satellite networks were built to support large scale broadcasting of television programming, but are not dimensioned to handle IP-traffic. Supporting two-way traffic is an essential pre-requisite for offering truly interactive TV-services. Currently push video-on-demand is the closest the distributors on one-way communication networks can get to other competitive offerings. According to Lynum this can put RiksTV as a DTT distributor at a disadvantage – especially with respect to the wired networks – in areas where both options are available.

As content providers are launching their own OTT-platforms for offering their content directly to the consumer, those players who experience the limitations in one-way communication may also start to experience increased competition for end-consumer ownership. Lynum stated that the industry is already seeing diminishing consumer growth for satellite distributors. This development is driving these distributors to look for new competitive dimensions that will ensure the relevance of their TV-services to the consumer.

Growth in increased bandwidth consumption must be handled

We have seen a steady increase in broadband consumption during the last decade. While 1 Mbit/s was the average Internet connection speed in Norway in 2004, by 2009 the average connection speed had increased to 5.9 Mbit/s (SSB 2010). Wider broadband drives consumption and made it possible to enhance the Internet with richer content, in particular new forms of video content. While many users identify YouTube – founded in 2005 – as a frontrunner in this development, several commercial actors were testing video distribution over the Internet much earlier. According to Vimond, TV 2 was «amongst the first to establish their online TV-distribution solution [in 2000]» (Vimond

2011). Since the start, Sumo's content and technology has together with other video services on the Internet evolved in line with a rapidly growing customer base.

The growth in supply and demand for online video comes at a price. More fiber is present in the distributors' networks than ever before and new standards such as DOCSIS 3.0 has enabled higher connection speeds on copper networks, but the networks still cannot handle the traffic as well as the distributors would like. One example of this is Telenor who already have invested 10 percent more in their core network than they projected last year. Hodne said that NextGenTel scale up their network when they reach a utilization of 70 percent, but at the same time he indicates that this might not be a sustainable strategy over time. The rapid increase in consumption caused by distribution of video content is pointed out as the source of this development.

One suggested solution to the infrastructure and network capacity issues, according to some players, is for the content provider to start paying part of the distribution cost for having their content delivered to consumers. Telenor was one of the distributors that debated this issue in the media in early 2011 (Teknofil 2011, VG 2011). The distributors argue for this kind of payment in several ways. They acknowledge that the end user is already paying for their Internet connection, and that this covers the costs for traditional content. It does not, however, cover the increased costs tied to distribution of high quality online video, where infrastructure requirements are many times higher. The distributors are also concerned about the current situation, where content providers alone have control over which qualities and bit-rates they send over the network. If a content provider believes time is due to support a higher video quality, they are free to make this decision on their own, while the distributors are left with the cost associated with the suddenly increased bandwidth consumption. This uncertainty forces distributors to potentially excessive investments in their network.

The Norwegian content providers are puzzled by the suggestion that they should pay extra for traffic they generate. Myklebust stated that NRK will never pay for the access from their customers to their CDN. This is according to NRK something that the distributors have to cover, and their understanding is that this is something that the end consumers are already paying for. Forcing content providers to pay as well would lead to the same service being paid for twice. This is a view shared by TV2, and Kosberg emphasized that they are spending a lot on the necessary infrastructure at their side, which among other things include CDNs. This leads to a situation where the network traffic has to be handled by the distributors. The content providers also place emphasis on their large investments in content production, and that their content is one of the reasons for the end consumers to buy an Internet connection in the first place. This view has also been shared by Jan Grønbech, CEO of Google Norway: «YouTube and other services from Google are one of the most significant reasons for Norwegian consumers and companies to buy an Internet connection, which means the situation is turned the wrong way when Telenor demands this payment» (VG 2011, translated from Norwegian).

Another suggested solution for handling bandwidth constraints is to introduce an upper cap on consumers' monthly bandwidth consumption. This has been tested in small scale in Norway on ADSL subscriptions earlier, only to later be withdrawn. Other markets around the world are on the other hand currently utilizing this form of payment, e.g. in Australia (see Example 2 about Telstra) and Canada where usage caps of 25–40 GB per month are common. The independent public authority that regulates and supervises broadcasting and telecommunications in Canada, CRTC, announced a new regulation on usage based billing (UBB) in February 2011 (Digi 2011). This regulation would allow the dominant Internet Service Providers to charge broadband subscribers and smaller competitive ISPs by the quantity of data they use. The regulation was highly debated by the public, and was quickly redrawn after a spokesman for the Prime

Minister in Canada said that «a decision like this is clearly not in the best interest of consumers» and that CRTC «should be under no illusion—the Prime Minister and Minister of Industry will reverse this decision unless the CRTC does it itself» (Ars Technica 2011a). The debate in Canada has not ended as of this writing. After the announcement that the CRTC would suspend the decision for 60 days, giving room for a public hearing, head of CRTC said that even if it changes the billing requirements, CRTC still wants to «find economic ways to discipline the use of the Internet» (Ars Technica 2011b). One of the aspects that are discussed is whether a reasonable analogy for Internet networks is other utility grids, such as water and electricity. Opponents of UBB argue that this is not the case. They mention that these utilities are both limited resources, and that «the transfer of electricity and water are limited both by supply of the good and size of the pipe. Data over the Internet however, is unlimited. While the size of the pipe may be constrained, the amount of data is not» (Ars Technica 2011a).

Hodne told us that NextGenTel are currently watching discussions in Europe on the area of bandwidth capping, and that they may consider introducing this if the bandwidth usage explosion continues. Get on the other side, disagree, and Haugen does not believe that this will be necessary. He said that Get views broadband as a commodity, and not a differentiation point, and that distributors will only spoil things for themselves if they mess around with it too much. When asked about whether a regulation will be considered in Norway in the future, Sinkerud at NPT did not want to speculate on the issue, but commented that he thought it to be unlikely.

Complications with over-the-top services

One of the large pit-falls with OTT-distribution is that it relies on unreliable Internet connections. Contrary to traditional television distribution methods, where the distributor can control the quality of the signal from end-to-end, the nature of IP makes Internet distributed content more exposed to poor quality of service. This infrastructure is not built to support dedicated tunnels from the content provider to the end user, and the complication is even more prominent when the content is traveling across different networks.

Consumers on the other side do not care about technical difficulties, and the normal user would rather be shielded from the technical aspects altogether. Consumers want their content regardless of what network they are on, the same way Hodne from NextGenTel said that consumers today do not care whether they have TV over coax or over DSL. Surveys by Altibox also showed that consumers are demanding that the service always works, regardless of time, place, and network, according to Ims. These demands from the consumers are difficult to handle, especially across an unreliable Internet connection. TV 2 also acknowledges that the risk is bigger with Internet distribution, but as of now consumers expects less from an Internet solution according to Kosberg.

Current infrastructure is not ready to use OTT-solutions to broadcast events to millions of people. While congestion in the networks can create problems for individual video streams today, the challenge is vastly magnified when users try to watch popular live events over-the-top. Technological support for multicast will improve with new standards such as IPv6, but live streaming is mainly done through unicast today, where each viewer gets their own stream from the CDN. This deeply impacts scalability. NRK successfully served 135 000 simultaneous viewers during the FIS Nordic World Ski Championships in Oslo in February (Myklebust at DigitalForum 2011), which is an estimated three times higher than the previous national record (Garfors 2011b). But even this successful accomplishment evinces signs of network issues associated with high scale OTT distribution. NRK would have had trouble serving particularly more users according to Myklebust: «The infrastructure clearly told us that it was filling up. The Internet in Norway was suffering and the world championship showed us that there are limitations to what the web can deliver» (Garfors 2011b). Contrary to OTT, this is where traditional

broadcasting technology excels. Content can easily and successfully be broadcasted to millions of simultaneous users, but at the expense of being limited to the same content for everyone. This is evidently an issue that currently lacks a proper solution.

Myklebust also expressed that using the web to transport such data consuming services as popular live events may even block other users from completing more important and sensible tasks (Garfors 2011b). This had practical consequences during the championships when some city councils blocked all Internet traffic coming from NRK because the high quality video streams fatally impaired their networks (NRK 2011). This was effectively an emergence of new Internet gatekeepers in Norway. Hodne briefly mentioned a similar case in our interview with NextGenTel as well, where NextGenTel during the 2010 Olympics had to cap certain video streams because it severely reduced the quality of the rest of their network. This must not, however, be mistaken as conflicting with net neutrality according to NextGenTel and other distributors. The distributors are responsible for maintaining a balanced network, and they are in position to regulate the traffic when one or several nodes impede the rest of their users. The net neutrality principle proposes distributors to deliver best effort to all involved parts, without discriminating one or more actors. Eric Schmidt, Google's CEO from 2001 to 2011, has explained the difference by saying that «you don't discriminate against one person's video in favor of another, but it's okay to discriminate across different types, so you could prioritize voice over video» (CNN 2011).

Vertical integration between infrastructure owners and content owners may induce net neutrality problems according to the Norwegian Consumer Council (DigitalForum 2011). They fear that lack of clear borders between infrastructure and service providers may challenge the principle of net neutrality. Their argument is that clear borders make it easier to ensure that no content providers are preferred in front of others. The Norwegian competition authority most often monitor markets by looking at horizontal integration, because this is most tightly linked to market power shifts. The importance of vertical integration in this industry has nevertheless led the authority to consider vertical integration as well (DigitalForum 2011). This may be conflicting with the many distributors looking into OTT solutions, which clearly gives them more influence over the content they provide. Some industry experts believe that infrastructure may become a commodity, and the distributors have to position themselves in such a way that they are not reduced to a dumb pipe. Haugen from Get told us that infrastructure providers are afraid of becoming infrastructure companies only; they want to ensure their position in the content part of the industry in order to stay relevant.

Other infrastructure related challenges

One of the main challenges for extensions of networks in Norway is the lack of a common set of rules for digging ditches for laying out new network infrastructure. This is according to Hodne in NextGenTel one of the most important cost drivers and it makes rolling out fiber a juridical nightmare as the terms are decided on a local basis. Sønneland et al. (2011) acknowledges the same problem, and has suggested introducing a general set of rules for cabling on public ground.

The Norwegian post and telecommunications authority (NPT) are advocates for intercommunication and open networks (NPT 2011a). The Internet is an example of such an open platform for all types of communication and content distribution. It is founded on intercommunication, and the distributors act out of self-interest when they adjust to these principles according to NPT. Existing cable TV and IPTV networks are on the contrary not supporting intercommunication, mainly because of proprietary application layer solutions. The distributors we talked to who are owners of proprietary networks naturally wants to protect their assets by keeping them closed, retaining end-consumer ownership and milking the assets. The advent of content delivery networks is also challenging the openness of Internet communication. Multiple proprietary CDN-platforms operate

side-by-side without any form of intercommunication. Several distributors indicate that they are skeptic to accommodate third-party CDN-providers with access deep into their networks, and some distributors, such as Telenor, have also confirmed that they are rolling out their own CDN-solutions within their own networks. This complicates the situation even further, as it is reasonable to believe that this development will lead to more closed – rather than more open – networks in the future.

Business model implications

Distribution over one-way communication networks complicates effective competitive positioning for the distributors utilizing them. Especially the customer value proposition needs rethinking in order for the wireless distributors to remain viable options for consumers who easily can chose a wired TV-option. As long as the consumption of broadband is increasing, distributors who own proprietary networks have to undertake new investments in infrastructure, potentially affecting their cost structures. The lack of regulations with regards to expanding physical infrastructure is also a potential cost driver. This further leads to tension with key partners who disagree when distributors argue that they should cover some of these costs, as OTT-consumption of video is the main driver for the increased broadband consumption. A challenge with OTT-distribution is that it does not efficiently support quality-of-service guarantees, forcing developers who deploy this option alongside their traditional offering to further develop their platforms, which is among their key assets.

6.2. Who should be the aggregator of content?

Aggregation is an age old model for distribution of TV-signals, but with the advent of the Internet this model is being challenged by content providers who also find value in owning the end-consumer. Historically content providers have been at the mercy of distributors who own and maintain the networks for distribution of content. This is still true for DTT, satellite, cable and fiber distribution, but the Internet can function as a new and un-managed network, which with the advancements made over the last decade now also supports large scale distribution of video content. Consumers pay for their own Internet connections, and are free to utilize that connection for consumption of whatever content he or she wants, at the same time anyone else who pays for Internet connectivity can provide that content. This development has sparked industry wide discussions around the role of aggregators.

Current aggregators on traditional distribution networks, such as Get and RiksTV, believe that aggregation is the most consumer friendly service also when it comes to Internet-distribution of TV. The belief is that consumers would like to find all their content at the same location and in a unified environment, regardless of who is the provider of that content. Content providers, like NRK and TV 2, on the other hand are convinced that they themselves are best positioned to offer a holistic consumer experience with respect to their own content. This is evident in that both companies already are offering proprietary solutions for OTT-distribution of content. Myklebust at NRK said that the editorial effect on content should not be neglected in an on-demand Internet environment, and that NRK themselves are the only ones who can do this properly. Additionally Kosberg problematize the fact that aggregators decide which platforms to support, possibly leading to the exclusion of consumers on certain platforms. These different industry viewpoints on who should be the one offering the content to the consumer is a foundation for increased industry competition and accompanying complications.

Content providers face potential marginalization in an aggregated world

One of the main concerns of content providers such as NRK is according to Myklebust the potential marginalization effect aggregation could have on Norwegian content. He claimed that aggregators are likely

to operate out of self-interest and follow the cash flow when planning their services. Kosberg at TV 2 explained that this is due to distributors wish to optimize their internal cost structure, and thus will seek out the cheapest possible content. This is a major challenge for Norwegian content providers who produce for a population of only 5 million while American content has a footprint of almost 300 million, making Norwegian content inherently more expensive. The effect could be that local content is squeezed out for the benefit of saving distributor costs. NRK and TV 2 are afraid that they are fighting a battle they are doomed to lose at the current price points; the end effect is a degraded service offering to customers if aggregators are to dominate the market. The content provider skepticism is a challenge for aggregators to overcome in order to negotiate deals for distribution of their content, according to Thaulow. Difficulty with rights management complicates this even further, and will be elaborated on.

Content providers and distributors battle for end-consumers

There is significant value in owning the end-consumer. Such ownership provides the opportunity of bundling and creating add-on services that generate additional revenues. Possibly even more important is the fact that the player who controls the end-consumer often also controls advertising, the largest revenue stream next to consumer payments. The battle for ownership, especially for Internet-distribution, is not fought only between traditional distributors and content providers but also new entrants focusing only on OTT-distribution and also hardware manufacturers are joining in. One of the best properties of the Internet is the widely applied net neutrality principle allowing anyone who wants access and effectively stopping ISPs from favoring some traffic over other. This is what has created the opening for new players to enter the market for TV-distribution.

Business model implications

The differing interests of content providers and distributors potentially impact the distributor business model going forward. As content providers seek direct end-consumer contact, licensing rights to content become more difficult, and is challenging from the strategic partner aspect of the business model. Additionally lack of access to key Norwegian content for distributors who launch OTT-platforms might lead to difficulties in generating revenues as local content enjoys the largest market shares in Norway. The battle for end-consumers might also affect the customer relationship strategies of distributors.

6.3. What effects does changing consumer behavior have on the industry?

TV has long been a linear service in which the content providers and distributors have been deciding what content is available, when it's available and what bundles the consumer has to buy in order to gain access to that content. The Internet has sparked a change in consumer behavior, which is now also reflected in the service offerings being rolled out by traditional actors. The consumer is to an increasing degree able to consume content at a time convenient to him, but most services of this sort are still under development and very immature at this point in time.

A market place opportunity has arisen as a result of the consumer want; accessing content on-demand. Consumers have been underserved by the available TV-offerings and have opted to source content outside the traditional TV-ecosystem. The Digital Economy Factbook (2009) stated that 71 percent of all US Internet users utilize it as a source for video content. This opportunity has been seized by new entrants who offer OTT-solutions to satisfy the consumer need, in turn this leads to increased industry competition and the need for incumbents to reevaluate their current positioning.

The view of the Consumer Council is that it is the entire industry's responsibility to ensure freedom

of choice for the consumer. This entails an opportunity for the consumer to choose content outside of predefined bundles. In the recent report *TV, mangfold og valgfrihet* (2011) a workgroup commissioned by the government evaluated the necessity of regulating the TV-industry in order to ensure freedom of choice. Their conclusion were that given continued market development in the current direction such regulations would be obsolete before they could even be put in place, but emphasized that this conclusion was dependent on upholding the net neutrality principle and infrastructure investments in capacity. Thus the responsibility is put on industry actors to alter their business models in a fashion such that they fundamentally support freedom of choice.

Another challenge in the emerging OTT TV-industry is the abundance of content that is available online. According to Johnsen and Intel almost 500 billion hours of video will be available online by 2015. In this long tail environment, presenting the consumer with relevant content can be difficult from both a technological and a user-experience point of view. Traditionally all content was pushed to the consumer, while on-demand behavior is equivalent with consumer pull. The difficulty now will lie in pushing content to be pulled, meaning that distributors of content must find ways to better suggest content that is of consumer relevance.

Consumers are fundamentally non-technical users and are easily overwhelmed by all the different devices, platforms and standards they must relate to in order to watch TV in more places than the living room. And their viewing behavior indicates that this is exactly what they want to do (Focus group study, chapter 5). Ims at Altibox views this as a challenge for industry actors, who must shield the consumer from all the technical jibber-jabber and provide a holistic and ubiquitous service.

Business model implications

Changes in consumer behavior and expectations with regards to how, where, when and on what devices they consume content forces industry actors to adjust accordingly. To allow consumers to follow their desire for on-demand consumption, key resources such as the distribution platforms needs to be revised. Alongside platform alterations the accompanying distribution channels will be affected. Finally new platforms and distribution channels potentially impact the revenue streams that are generated.

6.4. Fragmentation: Are industry players ignoring the big picture?

Content providers, distributors and electronics manufacturers all want a piece of the pie, and thus they are all launching competing OTT-services to satisfy the new consumer behavior. In an environment dominated by competition instead of cooperation, fragmentation is a natural outcome. Fragmentation can manifest itself in terms of an array of different forms in this market such as different devices, experience offered, service bundles, lack of technological integration and substitutability.

As consumers are acquiring more and more TV-related devices that are connected to the Internet, the challenge persists to integrate TV and Internet services in order to make them relevant to the consumers according to NRK. Consortiums such as HbbTV, consisting of many of the large global actors, are working on standardizations that will benefit both the industry and consumers with regards to this type of integration. But simultaneously other groups are carrying out similar work, which could be the foundation for new areas of market fragmentation.

Standardization of the technological solutions for providing access to TV-content is one way of coping with fragmentation, but the current lack and slow pace of developing industry wide standards could strengthen the global competition. This leaves international incumbents such as Apple, Google and Amazon an opening to enter the TV-market, which have not previously been among their core activities, but it is a position they can take because of their existing ecosystems. They are also in a position to create walled gardens, or other business models where they are the

gate keeper, owning the customer instead of current distributors.

Fragmentation with respect to technological standards also has another adverse effect. Content providers like NRK are concerned that the fragmentation will drive costs because of the necessity of supporting a myriad of different platforms, in addition to making it hard to manage them. This can make content providers unwilling to talk to distributors who do not adhere to the standards that are being developed, in turn intensifying the battle for providing access to specific content among distributors. The fragmentation in standards additionally impede the work with licensing contracts for distribution as long as platform is a part of the contracting terms in addition to geography. With technological fragmentation, negotiations become both more time consuming and costly.

Currently there is also a large fragmentation in terms of consumer experience. As all the actors, especially for OTT-platforms, are developing their own universes for presentation and consumption of content, consumers are not offered holistic solutions that they can familiarize themselves with. Additionally Internet-connected devices often entail a separate TV and Internet experiences without necessarily combining the two. Only integration of them will enhance the user experience according to NRK, who also argues that switching between them should be seamless to a much larger degree than today.

Business model implications

Industry fragmentation is a fact that must be taken into account when designing the distributor business model of tomorrow. Technological standardization work can influence platform development and thus key resources or distribution channels. Work is also necessary in creating holistic user experiences which are an important part of the value proposition offered, from a business model perspective.

6.5. Current revenue models in the industry does not add up

With the development in the TV-industry, deciding on a revenue model entails several complicating factors such as the subscription vs. transactional issue, cannibalization and substitution, and licensing costs and accompanying revenue splits. As in all industries revenue generation is vital, but the fact that working in the media industry is very capital intensive, as Thaulow at Telenor pointed out, makes it a necessity to generate revenues that scale according to investments.

The introduction of disruptive technology in an existing market can provoke both cannibalization and eventually substitution of existing products and services. In the TV-market OTT-services are emerging as a potentially disruptive element in an environment dominated by incumbents. A significant challenge in handling disruptions is timing. Knowing when to turn away from the milking of current business models and substituting in new activities is not easy, as pointed out by Hattestad at MTG. Another issue that arises with potential cannibalization regards internal decision making. The part of a firm that concentrates its efforts towards the dying business model might inflict delays in transitioning to a new model. When many of the actors in the Norwegian TV-industry today are moving to position for a future where OTT is a central distribution technology, they are likely to experience such timing and decisioning issues.

With regards to OTT-solutions in particular there are two main revenue models that can be applied – subscription and transactional (micro-payments) – but there are also a number of other alternative hybrid models that can be explored. Each of the main models has their pros and cons. A subscription based model offers distributors a certain degree of predictability of income, and is also consumer friendly. But this model does not allow distributors to cover costs for up-scaling the infrastructure that is necessary as consumption increases, it also makes it hard to contract revenue splits between distributors and content providers as every consumer will use his subscription

for different types of content. Transactional models on the other hand does not offer the same income predictability, but it makes content licensing much easier. Most interviewed industry actors believe that subscription models are the way to go as they are the most consumer friendly and similar to the offerings the consumer knows, Haugen at Get on the other hand believes that a transactional model is best suited for on-demand consumption. From a content provider perspective the subscription model is a necessity for planning further investments in content, according to Kosberg.

End-consumer targeting is also a revenue issue. It is both about controlling advertisement revenue and revenue splits. Distributors are at the mercy of content providers with regards to licensing content for distribution. Content providers want a bigger share of revenues, even when they don't own the end-consumer, and this is reflected in the cost of licensing. This has an effect on the revenue that must be captured, both through subscription and transactional models, and ultimately on the revenue that must be created from consumers and advertisers to cover these costs. ComScore (2011) found that the ARPU for advertising is lower in current web-TV and other OTT-solution than for traditional TV-broadcasting. This is a challenge that must be tackled alongside the timing of substitution to a new overall business model.

Business model implications

The question of revenue model in the case of the TV-industry closely follows the decision of whether and potentially when to pursue new OTT opportunities for distribution of TV-content. Since OTT-solutions potentially will cannibalize and long term, substitute the existing solutions, it turns to an issue of switching between the traditional distribution business model archetype and a hybrid or pure OTT model. Since the choice of transactional versus subscription models also involves other actors with regards to licensing, revenue model alterations will affect key partnerships, both with content providers and advertisers.

6.6. Rights management creates severe industry tension

Managing rights through licensing contracts has always been a fundamental part of operating in the media industry. It is the content itself that carries the value, and to ensure that the producers and owners of that content get their share when it is consumed, complicated licensing contracts are often put in place. And as the TV-industry is moving towards a future where content can be consumed on an increasing amount of devices connected to several different networks based on differing technologies, it complicates the task of rights management even further.

The regulatory authority, the Ministry of Culture, pointed out that many of the current rights contracts are based on the old analogue eco-system and has still not been revised to fit with a digital world and digital distribution. Much of the development with regards to distribution in the TV-industry is ongoing and fragmented. This is a complicating factor because it makes it difficult to envision all the scenarios that need to be covered in future licensing contracts.

Complications in rights management are mainly driven by the myriad of different technological implementations of TV-distribution and the on-demand consumption behavior that is emerging. NRK has stated that one of their reasons for pursuing their own OTT-platform is to avoid the rights issues that go alongside licensing the same content to 3rd party distributors. Distributors such as Get experience this move as a manifestation of the diverging interests between them and the content providers. Some of difficulties that are a result of OTT-distribution are avoided by cutting out the middle man.

In particular on-demand rights are responsible for much of the distributor headache, even though on-demand services have been around on the web for the last decade it has proven difficult to agree on licensing contracts when this service is moving to all types of devices including the TV. Some of the difficulty lies in the fact that on-demand content is stored at a distributor for consumption an unknown number

of times, instead of being broadcasted once. This complicates contracting as the license fee is not paid only for one or a couple of broadcast slots. Many content providers also license some of the content that they broadcast through third party distributors, from other producers, making it difficult to allow the distributor to store this content for later on-demand or catch-up TV distribution.

When licensing content some actors experience that the producer wants extra payments for also selling the rights to on-demand distribution. This indicates a mismatch between those who source content and those who produce it. NRK has stated that they are reluctant to pay anything extra for on-demand distribution rights, as they consider these rights to be part of the package in the digital eco-system that has emerged. In the cases of licensing on-demand rights the window of opportunity for providing the content to the consumer is often 7 to 30 days after the initial linear broadcast transmission, which is a relatively short period for catch-up TV. TV 2 experiences that some producers allow as much as a 3-year period where they have all rights to the content and can distribute it in whatever fashion they would like, while others are extremely strict and divide the catch-up rights based on a large array of platforms in order to maximize profits.

As long as much of the licensed content has to be managed based on which forms for distribution it is intended for, instead of only the geographical area a distributor covers, it is hard for Norwegian actors to ensure ubiquitous availability of content. TV 2s point of view is that rights obtained should be on a purely geographic basis and not platform dependent.

Going forward there is the possibility that rights become a point of differentiation in that we will again see more of the exclusivity contracts for content that was common in the TV-industry earlier, according to both TV 2 and RiksTV. Such exclusivity will increase the competitiveness of this eco-system, something that can be a disadvantage for the consumer who might experience lock-out from certain content dependent on his or hers TV-service provider.

Business model implications

Managing rights is an activity that is not only internal to a distributor, as one is dependent on content providers and producers to be willing to license away those rights. Therefore key partnerships are an important business model aspect in order to ensure that attractive content is available to distribute for consumption. And as distribution modes are changing and contracting is becoming more intricate the current cost structures can be affected, as well as which distribution channels specific content is available for. Also if a distributor is unable to obtain rights to some content it will challenge their current customer value proposition.

6.7. Consumers demand access to content on multiple screens

Consumer behavior and technology development is pushing distribution of TV-content to new surfaces for consumption. Consumer wants TV-content on all the screens that they have available, including the TV, computers, tablets and mobile phones. Today this is problematic because, as NRK states, it's currently difficult for the consumer to move his content between the different screens.

A multiple-screen eco-system is complicated to handle for a distributor as a result of all the different technological implementations that follow the different devices that are capable of showing TV-content. The challenge is to establish a service that is personal to the consumer and which he or she can use on all of his screens. This brings forth a lot of issues regarding contracting for content rights and network capacity in networks not owned by the actor who provides the service to the consumer. These problems causes' actors such as Get to currently focus on services that they can offer within the footprint of their own network, while Telenor on the other hand has ambitions of providing services that are network agnostic.

The concept of user experience is also a challenge that must be overcome with regards to making TV-content available on all types of screens. Consumers are not technical in nature and do not distinguish

between the different screen types, according to Intel. This challenges industry actors to create platforms that are independent of the device that is used for consumption.

Large global players also provide distributors with both challenges and opportunities in this market. Apple provides actors who want to distribute content, regardless of whether they are a content provider or a distributor, with access to new types of screens, like the iPad. Simultaneously Apple retains all the consumer information within their own eco-system, this hinders the service provider from uniquely identifying the consumer and provide him with the same service he is paying for on the iPad on other devices. Both TV 2 and NRK find it difficult to handle these types of walled gardens, which on one hand provides at great opportunity while the restrictions are far from few.

Business model implications

From a business model perspective, making content available for multiple screens is an issue of rights management, platforms, and distribution technology. These issues have an effect on key partnerships with those who provide the content, developing own key resources in the form of a platform that enables distribution to all devices, and offering attractive customer value propositions.

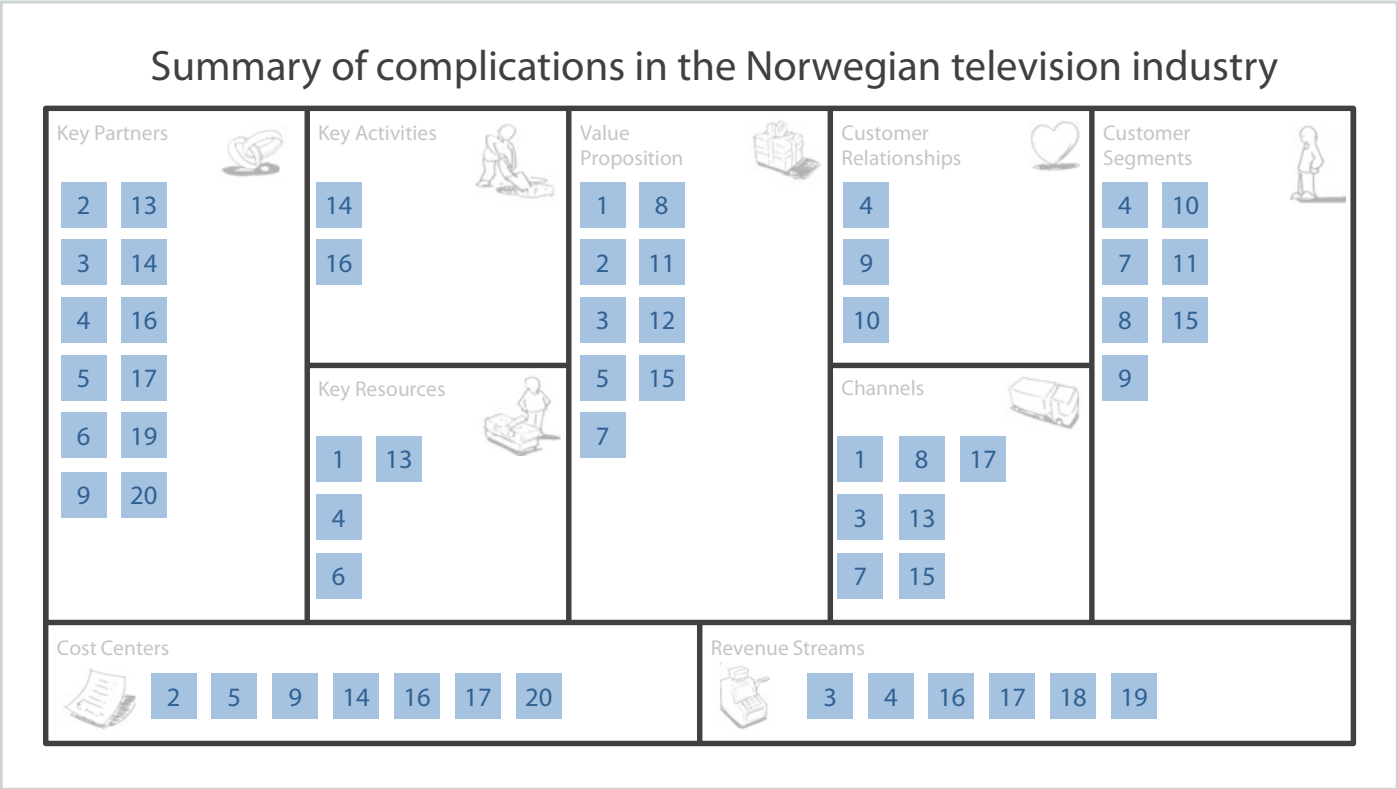

Figure 24: Mapping of the industry complications to the business model canvas

6.8. Summary: Mapping the complications to the business model framework

The previous discussion of complications is here summarized in a list containing the 20 most fundamental challenges faced by TV-service distributors. Figure 24 is a mapping of how the accompanying business model implications relate to the different blocks of the business model canvas. The list is not exhaustive, and not explained in depth, but should provide an overview of the findings. The numbering of complications is not an attempt to infer importance, but purely for the purpose of mapping them to the canvas.

1. Distribution networks that only support one-way communication will struggle in competition with future television services.
2. Rapidly increasing broadband consumption challenges today's business models.
3. The competition among multiple providers of OTT-services will be intense.
4. A serious battle for end-consumer ownership continues between content providers and distributors.
5. Content providers fear they will be marginalized by cost centric distributors with too much bargaining power.
6. High degree of vertical integration may shift power and restrain competition.
7. Over-the-top television is best effort and cannot guarantee quality-of-service.
8. Over-the-top television can currently not support millions of simultaneous users and thus not replace broadcasting.
9. Proprietary solutions and lack of standardization challenges customer experience and drives costs.
10. Consumers are fundamentally non-technical users and are easily overwhelmed by all they must relate to with future television services.
11. The Internet has sparked a change in consumer behavior where they want nothing less than hyper convenience.
12. Serving on-demand content from vast content libraries requires clever ways of introducing the consumer to relevant content.
13. Separate, proprietary networks may threaten intercommunication and net neutrality.
14. Fast moving technology makes it exigent to stay in front of the development.
15. Future television platforms must seamlessly support multiple screens.
16. Negotiating rights is immensely difficult for players in low populated countries like Norway.
17. Global actors may enter an immature Norwegian market with proprietary platforms and walled gardens.
18. Current online revenue models are not efficient enough and have a high degree of uncertainty.
19. Revenue splits are not agreed upon between different parts of the supply chain, and opposing interests exists.
20. Lack of common rules for digging ditches on public ground slows down infrastructure developments.

Resolution

7

Aligning the Business Model

Throughout the previous sections we have established the fact that the TV-industry is moving towards more and more distribution over the Internet, and thus incumbents are entering a phase of business model innovation. In this section we start by identifying the root cause of current innovation efforts based on business model innovation theory. Thereafter we suggest a new value proposition for distributors to pursue, and a set of activities to be carried out when aligning the business model accordingly. We also address how these activities could solve several of the complications identified in the summary of the previous section. These elements combined together serves as a foundation for presenting a holistic business model. Lastly we include a set of managerial implications that go alongside the process of business model reinvention.

7.1. Epicenter of business model innovation

During our research we have found that industry incumbents have a converging view on which direction the market is moving, but that there also exist a lack of understanding of the implications this has for doing business. Consensus is that existing business models needs to be altered, but how they could be aligned with this technological and consumer behavior driven development is unknown. We believe that the first step to approaching this issue is through identifying the source or epicenter that is driving business model innovation. Both Osterwalder (2010) and Johnson (2008) have suggested a set of conditions that often spark such innovation, these were listed in chapter 2.

According to Osterwalder, ideas for business model innovation can spring out of any one of the nine building blocks of the business model. Through a process of evaluating the current situation of the TV-industry, by looking at each of the building blocks, the authors have attempted to identify this epicenter. Figure 25 summarizes the identification process carried out by the authors, and the justification can be found in this section.

We have identified three areas of the business model canvas that could be the epicenter of the changes we see in the Norwegian market today; namely the «value proposition», «customer segments» and «channels». We will first go briefly through the other six elements of the canvas that we do not believe to be the basis of the developments, and subsequently go through these three areas in more detail. We will lastly describe the «value proposition» which the authors believe to be the epicenter of business model innovation in the Norwegian television industry.

The six least likely areas to be the epicenter for business model innovation

Key partners

No evidence exist suggesting that the partnering structure within the TV-industry in any way has brought forth new opportunities that can be exploited by distributors. The most important partners for distributors are the content providers and licensors. Norwegian

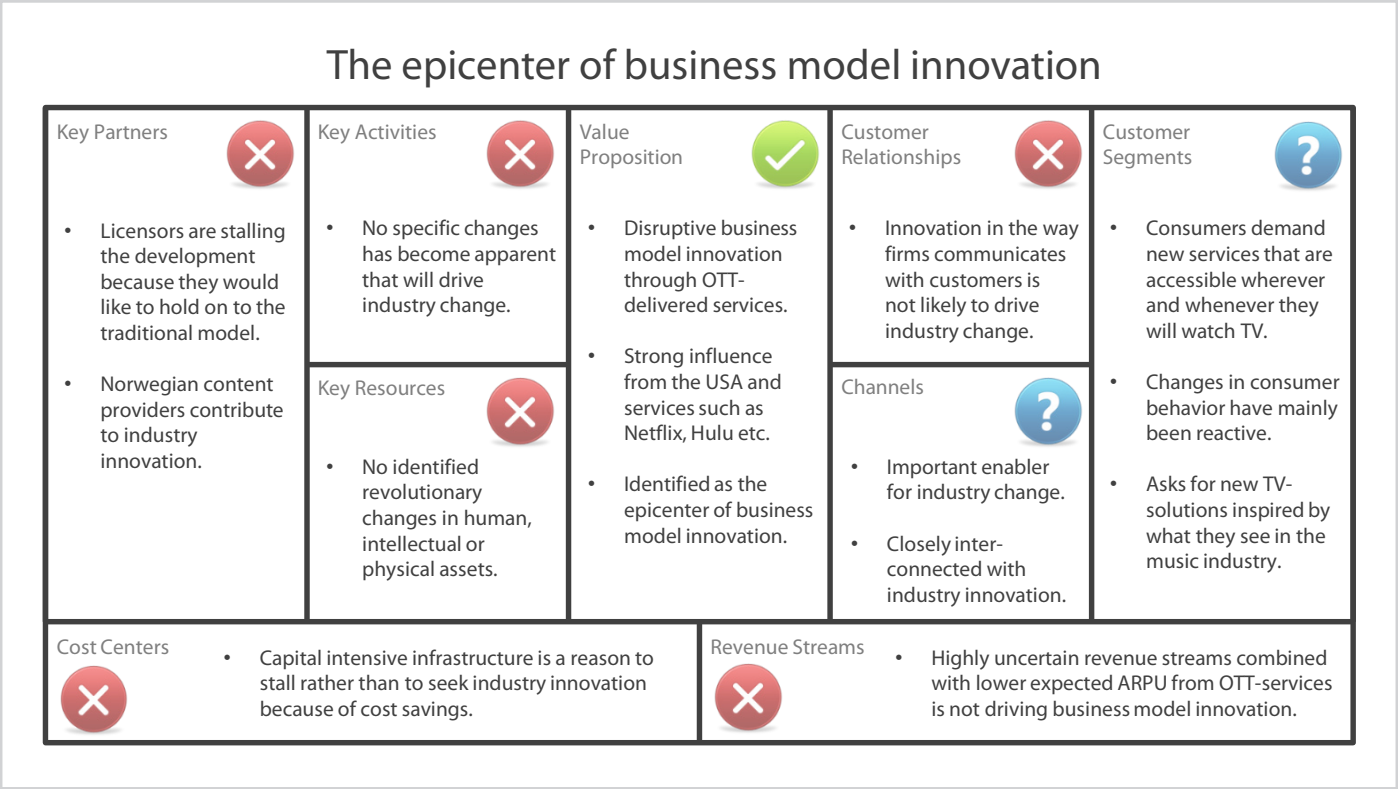

Figure 25: The epicenter of business model innovation in the Norwegian television industry

content providers are contributing to over-the-top developments in Norway, while the international licensors on the contrary are showing signs of stalling the development. They control the most important value driver within the industry – content – through licensing contracts. By offering fragmented licenses based on different distribution channels they are not facilitating the shift to a digital eco-system, much because they believe that it is in their own interest to continue with the status quo.

Key activities

Examples of key activities are production, rights negotiations and management, supply chain management and problem solving. With regards to the TV-industry, these types of activities are not seen as having changed significantly recently, and the authors do not believe they are the origin of the major shifts in the industry.

Key resources

Existing assets cannot be identified as the source of innovation within this industry. There have been no apparent revolutionary changes in human, intellectual or physical assets that could have sparked the opportunity for altering the existing business models. The changes that have been noticed are mostly evolutionary.

Cost structure

The TV-industry has for a long time been dominated by incumbents, who own significant amounts of vital infrastructure to support their business model. This infrastructure is of high value to them, given the current situation in the industry, where vertically integrated companies offer the consumers a complete solution. Expansion of the infrastructure capacity is additionally very cost intensive. Thus we see the high capital expenditures invested in infrastructure as a reason for distributors to stall developments that may decrease the payback period on existing infrastructure rather than something that drives innovation towards new investments.

Revenue stream

In new business models the accompanying revenue stream is often highly uncertain, as it is very hard to evaluate the potential of the new model. There are also analyses showing that advertisement revenues on

average are lower for services other than traditional linear broadcasting. Coupled with lower subscription revenues online, this makes it hard to justify that the current direction of business model innovation in the television industry is a result of expecting it to drive more revenues than the existing model.

Customer relationships

There is little evidence that the way in which distributors communicate with their customers have changed recently. TV-distributors continue to sell subscriptions to a service, and minimal assistance is needed by the customer once he has been acquired and connected to the network providing the service. Neither have there been tremendous developments in the way distributors seek to acquire or retain customers other than enhancing their value proposition, which is a separate business model element. Therefor we cannot argue that changing customer relationship strategies have led to business model innovation.

Three potential candidates as epicenters for business model innovation

Customer segments

Obtaining a better understanding of how customers are segmented in the market place could have been a source of innovation that has triggered the current market development (Voelpel et al. 2004). A small, but growing, amount of customers are seen to be changing their viewing behavior. They are watching more content on-demand and from the Internet on their computers. Some customers in other countries are terminating their TV-subscriptions as a result of online services, and this cord-cutting is taken very seriously by distributors in the USA. Customers are also looking to the music industry, where they through services such as Wimp and Spotify can gain access to all the content that they want, whenever they want and on all devices for a low monthly subscription fee. This leads them to expect the same thing from the TV-industry. Solutions for on-demand TV such as TV 2 Sumo have existed for quite some time without getting the same attention as today; therefore we do not believe it to be consumer demand that ultimately has fueled the need for innovation, even though it has played an important part in the industry development.

Channels

Channels encompass all the ways a firm interacts with its customers, including distribution, sales and marketing channels. The Internet as a new distribution channel could easily – but according to the authors mistakenly – have been regarded as the epicenter of business model innovation within the TV-industry. The developments in Internet infrastructure have truly been immense in the last decade. Nevertheless, we believe it has been a result of competition on connection-speed between Internet service providers and not primarily on its ability to function as a distribution channel for TV-services.

Infrastructure developments in Norway are closely interlinked with global developments, which mean that global trends that yet have to reach Norway could cause infrastructure build-up in Norway as a precaution. An example of this is over-the-top services in the USA that have led to developments in CDN-solutions for television distribution. Even though similar OTT-solutions have just recently been introduced to the Norwegian market, the required technology has already been available. This is according to the authors not indicating that innovation in distribution methods is the main driving force behind the industry revolution, but rather that one trend may travel faster across borders than another due to for instance legal circumstances. This example is a case of geographical boundaries limiting American OTT-solutions from being used in Norway, and it takes longer time to build similarly good local services and negotiate the necessary rights than it takes to prepare the infrastructure for the changes that are coming.

There is no doubt that the increased potential in the distribution channels functions as an enabler for creating a new business model in the industry, but the

authors believe it is mainly a necessary effect of the industry development rather than the cause.

Value proposition

The major developments we see in the television industry contribute to a completely new value proposition compared to that of traditional linear broadcasting. Consumers are no longer offered programmed television content where they have to adapt to a pre-planned schedule; new distribution methods and video-on-demand offerings enables customers to decide what they will watch, where they will watch it and at what time. This new era of television greatly improves customer convenience, and price points are also low compared to the traditional revenue models. Quality has on the contrary been reduced to adapt to the limitations of the Internet as a distribution channel: Both bit rate and quality-of-experience has had to be reduced as a consequence of congestions and bottlenecks across the Internet. Improvements in content delivery networks and streaming technology are however driving the quality of over-the-top services closer to par with traditional broadcasting.

OTT video services have grown hugely popular in the USA over the last couple of years. Since Netflix launched their instant video streaming in 2007, and Hulu launched for the public in early 2008, their usage has been steadily increasing. These services are not available from Norway because of licensing limitations, but NRK, TV 2 and others have had success with OTT-services in Norway as well. While OTT-services from Norwegian content providers are mainly seen as a complement to traditional linear broadcasting today, the American services have begun to act as substitutes. Cord-cutting is a big issue for distributors in the USA, causing their traditional business model to lose customers to the new disruptive business models. Distributors in the US are in a rush to develop their own platforms to be able to compete on convenience with the OTT-services, and even though they are well positioned to compete with today's OTT market leaders, distributors suffer from their slow reaction time.

The players in the Norwegian television industry are well aware of the problems their American counterparts face. This has caused everyone to rush developments of their own OTT-solutions in the Norwegian market. In contrast to the situation in the USA, no particular player in Norway has got a comparable head start, but at the same time all the players fear that they will lose too much ground if they are left behind. Development cost for OTT-platforms are high, revenues are uncertain and it may cannibalize existing value offerings. One would think some of the players would try to stall the developments and milk their current market, but they are afraid of the long-term consequences if they do not keep on par with the development. The current situation in the US serves as a warning, and it is too expensive to buy back lost market shares. The authors see the immense developments in the industry as defensive operations against an uncertain future.

Ultimately we view the epicenter of business model innovation in this industry as being offer-driven. It is a textbook example of low end disruption as described by Christensen and Raynor (2003). Distribution incumbent's efforts to innovate their business models can be seen as a defensive move against low-end disruptors, which was identified as one potential strategic circumstance for innovation by Johnson. This is a response to the new entrant strategy of addressing groups of over-served customers with a low price disruptive innovation (Johnson 2008).

7.2. A holistic business model centered around the value proposition

The customer value proposition was just identified as the epicenter for engaging in business model innovation. Based on this we now propose a new value proposition, outline the activities necessary for aligning the business model accordingly and present the resulting business model.

A value proposition that will ensure sustained competitiveness

> *«We offer a highly personalized TV-service that is available on all types of screens, can be accessed at your convenience, does not discriminate on content, and which is focused on providing a superior consumer experience».*

The suggested value proposition should be considered a long term goal that incumbent distributors should work towards achieving. Since it illustrates a long term goal, it is natural that it seems idealistic given the current industry constraints. On the road to getting there, there are several complications outlined in the previous section that must be handled accordingly and therefore we elaborate on the activities necessary for achieving this next. First we will discuss the reasoning behind the suggested value proposition.

Industry suggestions

During the interviews, at the conference, and from reviewing several other sources we have uncovered a series of different propositions as to what will be the competitive factors going forward.

Kosberg at TV 2 said that «I belive that the big difference between TV today and five years in the future is that you will be watching TV in more places and that TV is more personal». RiksTV is one of the actors that have discovered the latent need of consumers to access TV in more than one location and has started to provide a multi-room subscription as a first step in this direction, according to Lynum.

Solheim, at the Ministry of culture, pointed out that there is no doubt that digitalization is erasing borders and that this is making it more interesting to talk about content than about platforms. The same thing was stated by Hodne at NGT who said that «it is important to us to also have the content, not only the platform». Haugen at Get is of the belief that the different services are bound to melt together, and that the need for different devices for different purposes will seize to exist. Also Thaulow at Telenor believes that «we have to be able to deliver a TV-service to the consumer regardless of what type of network he is on». It is clear that being able to provide the right content trumps the technology used to deliver it.

As the importance of content grows so will the way in which it is presented. According to Haugen at Get «the way in which content is presented and the consumer experience with respect to how the service is delivered will be an important factor with respect to how the competitive environment will evolve». This view is also supported by the content provider NRK. «A connection between the [Internet driven] on-demand and the [traditional] linear regime is something that is in the consumers interest. It provides them with user friendliness and a connection between the two worlds that is intuitive and simple to relate to», Myklebust said.

Why would consumers chose a distributor when content providers are utilizing the power of the Internet themselves to let them access all the content that they want? Lynum at RiksTV believes the answer to be: «Because we manage to be a form for aggregator where the consumer does not have to relate to several service providers at the same time». This is a question of convenience, and Haugen at Get said that «I believe that this is about convenience for the consumer, to be able to go to one place and find everything [content], and to discover it in a way which is appealing to that individual».

All of the previous statements have been made by people who follow the TV-industry and its development closely, and through triangulating much of our empirical data we believe that the statements provide an indication of what elements should comprise a future value proposition.

Changing consumer behavior

In carrying out their research Intel has concluded that by 2015 there will be more than 500 billion hours of video content available on the Internet, and that we will have close to 15 billion devices that can connect

to the Internet (Johnsen at DigitalForum 2011). When we in addition know that 30 percent of the TVs sold in Norway in 2010 are able to connect to the Internet, and that this number will reach 50 percent in 2011 (Jansen at DigitalForum 2011), one cannot continue to ignore the content that is available online.

Altibox have found that «30 percent of teenager's media consumption is simultaneous multi-screen consumption». And according to the Digital Economy Factbook (2009) 71 percent of all US internet users now use the Internet as a source for video content. Further, 19 percent of all the Internet users watch full length TV episodes on the Internet and 10 percent watch full length movies. Research by IBM show that 10 to 30 percent of the population aged 18 to 34 watches significantly less TV as a result of Internet-services (2009). This signifies that online content potentially is a serious threat to traditional TV-distribution. Thaulow at Telenor commented that in a five year perspective «it is possible that the amount of consumers that have started using OTT-based solutions for watching TV, both time-shifted and on-demand consumption, has had an extreme increase. It may as well be possible that we begin to see trends indicating that on-demand consumption have begun to cannibalize viewing time on managed TV».

In the focus group study presented in chapter 5 the participants also noted that their download behavior with regards to music had changed as a result of Spotify. It is likely that this behavior could be transferable to TV as similar solutions for OTT-consumptions are rolled out. This could be an important factor in fighting the piracy of content, which currently is an industry headache.

These findings indicate that consumers want more than they are getting from traditional TV-services, and that they are in need of a new value proposition that caters to their needs.

What does the new value proposition entail

The suggested value proposition is based on four specific elements. First of all focus must be shifted from proprietary networks to network agnostic distribution platforms. This means that distributors must realize that infrastructure basically will become a commodity. No competitive advantage in the future is likely to be based on the significance of the network as a key asset in itself. Only through reaching this conclusion, and aligning accordingly, distributors will be able to deliver their content to all types of screens available to the consumer. The second point reflects the need to adapt to changing consumer behavior. The time-crunch, which is experienced by many consumers in their everyday life, is driving them to optimize the time they spend on certain activities. When the traditional scheduled linear television programming does not fit into their plans, options for on-demand or time-shifted consumption must be in place. Without such functionality consumers are more likely to opt for other services that provide this functionality. At the same time convenience entails that the customer segments who prefer pre-scheduled programming still has this option. It all boils down to a platform that supports both modes of consumption.

To not discriminate on content implies that one should not differentiate between the content that is delivered through the broadcast network and that which is delivered over the Internet. The platform should support a seamless integration between the two types of content, not forcing the consumer to choose one or the other. He does not care about the origin of content, only that it is available at the push of a button. This is what ultimately will culminate in interactive TV. It is only through combining the two that the consumer experience can be enhanced. Utilizing broadcast distribution and layering it with Internet-connectivity is the best way of providing the consumer with value adding services such as enhanced programming information, localized information, or on-demand consumption. Additionally the aforementioned necessity of supporting delivery to all of the consumers' screens should be coupled with a coherent experience across the devices, not differentiating on the services available at different points of consumption.

Lastly the consumer experience regards how he experiences the process of getting the service up and running. Consumers are non-technical in nature and should be shielded from as many technical aspects of the TV distribution process as possible.

Activities to pursue when aligning the business model to the long term value proposition

To effectively provide the suggested value proposition the rest of a distributor's business model must be aligned to support it (Osterwalder 2010). Therefore we suggest a series of activities to be initiated that can ensure this alignment.

Must-do activities for Norwegian distributors

Develop a platform for TV-services that supports video-on-demand. This is absolutely vital, as video-on-demand is the foundation for the rest of the changes to the business model. Consumers have accustomed to this flexibility in the music industry, and now they want the same thing from the television industry. The industry-wide introduction of digital PVRs have prepared the users for this shift, and shown them that better alternatives to linear television exist. Future platforms that do not support content on-demand will not survive in competition with those who do.

Make sure the platform can be used with all distribution channels. This includes fixed-line or wireless broadcasting, distribution across the Internet and mobile transmission. Consumers are expecting ubiquitous access to the traditional services and the enhanced services of the future business model. The users are located at multiple locations with access to different networks, but still expect the platform to be available when they want to use it.

Adapt the platform to support a ubiquitous experience across multiple screens and devices. Consumption of television will take place in more places than just in the living room. Users have access to a different set of devices as they move around and they demand the platform to support them all. The user experience must be aligned as well, and if the user watches television on the train, he should be able to continue where he left off when he comes home to his main TV. New devices are launched continuously, and the platform has to be able to evolve to support today's screens as well as the devices of tomorrow.

Create a vast library of content by aggregating different sources and negotiating rights. Ultimately the users want to consume content, and this means that a good technical platform is not sufficient. A wide variety of content available at any time is a prerequisite for future success. Distributors must come to agreement with content providers so they can act as holistic aggregators and at the same time support content providers' demands of being in charge of creating a seamless transition between linear and on-demand television. Distributors must also be able to give access to a vast library of content from foreign licensors, which requires a continued focus on rights negotiations.

Create a seamless integration and user experience across the platform. Consumers are fundamentally non-technical users and are easily overwhelmed by all they must relate to with future television services. This makes it vital to create consistent interfaces and user experiences across different distribution networks and devices. It is for instance not enough to offer separate Internet and broadcast universes on the Television set; integration is key. Additionally users may not understand why OTT-services delivered directly to the TV do not offer the same quality-of-experience as traditional broadcasted content and this issue has to be addressed.

Maintain a focus on traditional linear broadcasting to support live events and the social TV-experience. The television service every consumer is familiar with continues to live side by side with the advancements

in OTT-television and Internet distribution, and it is very important not to lose traditional linear broadcasting out of sight. Linear TV will not disappear, and it will play an important part of the future of television. It is an enabler for the social part of watching television, and it may be used as a promotion channel for on-demand content. The player that best manages to integrate traditional linear broadcasting with ubiquitous on-demand services will be very well positioned in the future Norwegian television market.

Should-do activities for Norwegian distributors

Create a national content delivery network in a joint effort between national content providers and national distributors with negotiated cost and revenue splits. Distributors are unanimously concerned with giving third party CDN-players access as deep into their networks as they get today, but at the same time CDNs are obviously necessary in order to effectively transfer high quality video content over the Internet. Content providers need a CDN-provider that can guarantee them equal performance in a majority of the networks in Norway, and are therefore not willing to use a CDN from a single distributor. When coupled with relatively low implementation costs, this points in the direction of a joint Norwegian content delivery network where distributors and content providers both contribute. For content providers this may mainly cause a redistribution of costs, while it will reduce uncertainty for distributors.

Utilize user profiles and location information to drive revenues. Personal user profiles are prerequisites for a ubiquitous television experience, and will also open up for data gathering of the consumer's habits and preferences. This can be used to drive on-demand sales by enhancing recommendation hit rates. It can also be used to display targeted advertisements to individual consumers, if agreements are negotiated with content providers so that they permit signal adaption. Combined with information about the user's location this may give advertisers incentives to pay more and thus increase the average revenue per user. This may finally make the future business model more viable.

Find a good way to recommend content. Vast content libraries have small positive effects if the users are unable to find new content. Several different approaches have been discussed in order to solve this issue, such as editors, search, automatic recommendation and social recommendation. The need for seamless integration between broadcasted and on-demand content further contributes to this challenge. Integration with social networks and the user's personal television profiles may be one step in the right direction, but the task will still be difficult. Future television business models will struggle without proper methods for driving sales of niche content in the long tail.

Rig the business for a future where network and infrastructure will become a commodity. In the event that open networks become a reality – even in networks that currently are owned and operated by a single industry player – the deployed business model cannot revolve around infrastructure as a proprietary key resource. Differentiation is likely to be on the offered value proposition in the future, and competition will be between services, not networks. Those who hold back for too long – and thus are not rigged to compete solely on services – will struggle when the networks eventually become neutral. In order to stay relevant in the TV-industry, incumbent distributors should have their main focus on content and user experience, not on protecting current assets.

Adapt industry standards to attract content providers and lock global players out of the Norwegian market. The increased fragmentation with respect to technological standards used for distributing TV-content to different devices is something that is infeasible for content providers to handle long-term. Unless standards are developed that allow for effortless integrations of broadcasters' content in a distributor's

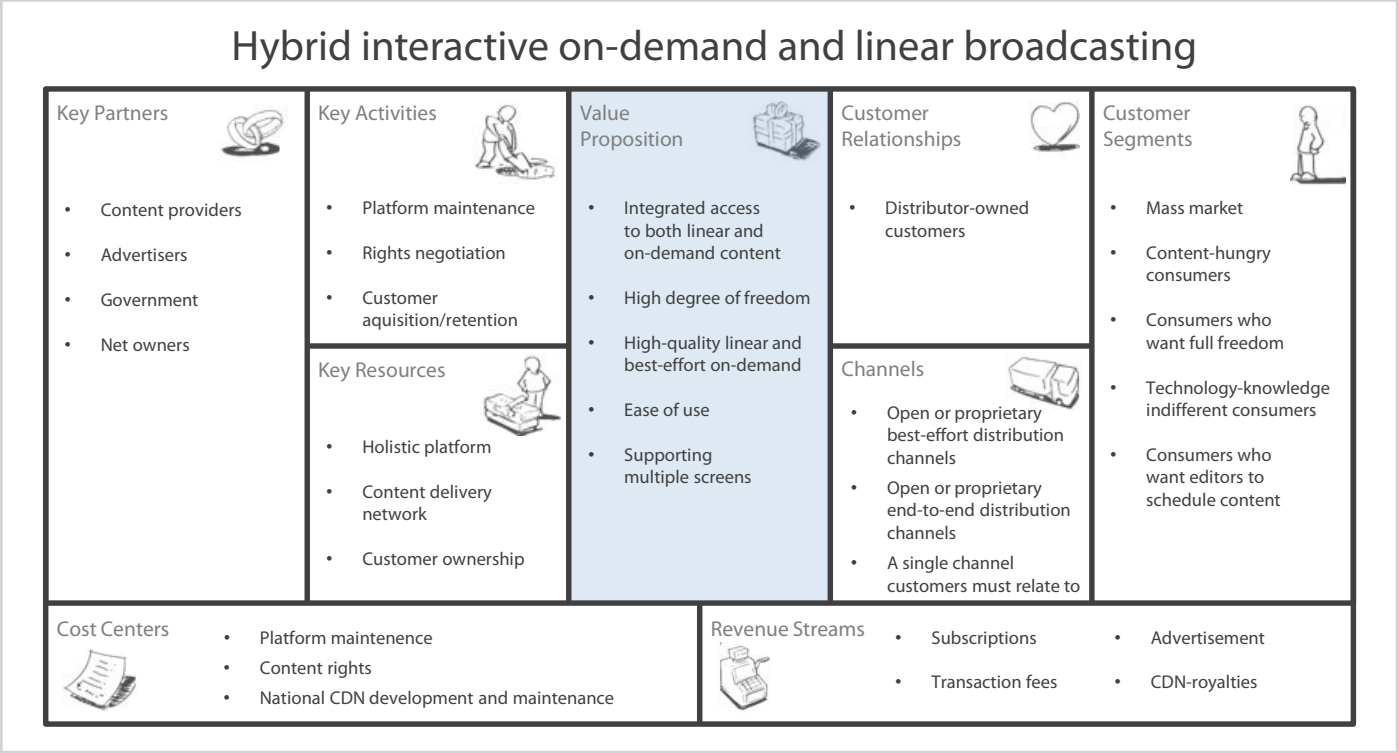

Figure 26: Hybrid interactive on-demand and linear broadcasting business model archetype

service, content providers' cost base can drive them out of business. If content providers struggle, less money will go to enhancing the value driver in this industry – content. If fragmentation carries forth, global players may also be given a window of opportunity in that they can come in and offer holistic solutions that attract customers and content providers.

Push for rights tied to content and geography rather than devices. A ubiquitous future with a television platform supporting multiple screens makes it vital to have content licenses that are unbundled from particular devices or terminals. It is difficult for players in a sparsely populated country such as Norway to influence large global licensors, but if it the efforts are successful it will reduce platform costs and significantly reduce overhead in rights management.

The resulting business model

The authors believe that the future distributor business model that is most likely to evolve will be a hybrid model which integrates the best aspects from the traditional linear business model and the interactive on-demand business model. This model is spun out from the value proposition offered to the consumer, which is a highly personalized TV-service that is available on all types of screens, can be accessed at his convenience, does not discriminate on content, and which is focused on providing a superior consumer experience. This lets consumers take control over their television viewing habits, while the distributor are able to continue to be an influential player in the industry. It will be vital not to compromise on the value proposition, since this has been identified as the epicenter of the business model innovation.

The hybrid interactive on-demand and linear broadcasting business model enhances linear broadcasting with on-demand and other value-adding services. *Hybrid* refers to the seamless user experience that the services should provide. This should not be implemented as two different services as current solutions are. When the user watches a linear stream, broadcast technology will be used to best utilize the underlying infrastructure and avoid congestion. If the user on the other hand at the end of a broadcasted episode chooses to accept the platform's suggestion of streaming the next episode from the central content depository, the streaming should instantly be initiated over the

best-effort IP-network. This should be transparent to the user, since ease-of-use is imperative.

Altibox is one of the distributors who is moving in this direction. Their interactive soccer portal is combining IPTV multicast technology with Internet sourced content to enhance the consumer experience (see Example 1 on page 42). While this is one step in the right direction, platforms should in the future allow all third party players to easily integrate whatever content they would like with the linear broadcast stream.

Integrated solutions enables hyper convenience, and the platform makes the user able to do as he wants without being hindered by technology or his current location. He will always be connected to the distributor's platform, and a high degree of freedom coupled with a superior user experience across all devices locks the customer to the distributor. Convenience drives consumption, and consumption drives value. Personal user profiles coupled with information about the users' locations will drive advertising revenues. At the same time the linear broadcasted material will be a promotion channel for on-demand consumption and together with social integration and recommendation that will drive on-demand sales. Altogether we believe this business model will be a way to conquer the future television market and generate profits in the process.

7.3. Managerial implications

The first step towards transformation is realizing the need for change (Voelpel et al. 2004). Most management teams within TV-distribution should now be aware of the environmental factors that are affecting the industry; namely the Internet as a distribution channel and the issues that accompany this development. What managers now need to address is the root driver for the transformation process, more explicitly which business model element should be the defining outset for reinventing or realigning the current business model.

We have argued that in TV-distribution, the value proposition should be the defining element. The industry discussion has long been on what opportunities technological advancement are making possible, but this is a reactive approach. Focusing on the consumer and the type of service that can be tailored to fit with his needs and wants is what should drive a firm to change its current activities, while technology should come second.

Handling two archetypes simultaneously

For many of the existing industry incumbents the immediate future will entail a new business model. This could potentially be difficult as they are forced to rethink their currently successful way of doing business as a response to new low-end disruptors who are threatening their position (Christensen & Raynor 2003). In a period of transition between the familiar and the unknown, management must relate to both the existing business model and the one that is emerging (Bjøndal & Gedde et al. 2010).

When an incumbent is venturing into the same types of business models that are deployed by the new entrants who are disrupting the current industry configuration, it entails an inherent risk of cannibalization. Supporting two business models archetypes concurrently might mean that one is supporting models that will be in direct competition with each other over time. It takes strong management conviction to pursue this line of action. Willingness to do so can be severely hampered by management teams who look at the short-term potential of the new model (IBM 2009b). At the same time, ignoring market development for extensive periods of time can produce the result of an organization that eventually is severely lagging behind.

Even though the OTT business model is relatively immature and has the potential of cannibalizing the existing model, it is one that should be supported by incumbents as a means of positioning oneself for the future. The telco industry has shown us that concurrently supporting disruptive models and milking the existing model is a viable strategy while market development is ongoing. Rigging the organization to support concurrent business models is the strategy that is most likely to ensure success when markets are about to experience significant shifts.

Willingness to experiment

Predicting which business models will work in the future is difficult. Effectively, experimentation becomes the only viable route for achieving business model innovation (Chesbrough 2010). Firms, who decide not to experiment with OTT-services and the Internet as a distribution channel for TV-content, are less likely to get it right when the market development finally forces them into this part of the industry. Further customers that are within the target segment of a service are the only ones who can validate the business model you are trying to create, thus it must be tested on them during the process of reinvention.

Initiating a change process

Any efforts that go towards altering the activities within an existing organization must be firmly rooted with top-management (Kotter 1995, Chesbrough 2010). If management of an incumbent firm needs to be incentivized to make the decision to venture into the OTT eco-system, creating a crisis scenario is one way of doing this (Kotter 1995). Looking to overseas market might be just what Norwegian distributors need to do. In the US new entrant OTT-solutions are increasing in popularity and are causing some consumers to cancel their TV-subscriptions in favor of the new business model. Some of these solutions are even backed by large industry players. Urgency is of the essence here, and establishing a vision for the future of TV-services is the first step. This is in line with our suggestion of putting the value proposition first, and utilizing this as point of innovation. The real danger lies in not starting this process early enough.

A final note for managers

The key takeaways here are that managers should think value proposition first and then find or develop the technology that supports that value proposition. Also managers need to allocate the resources necessary to pursue new business models alongside their existing model, by not doing this they run the risk of becoming irrelevant in the market place. Additionally successful business model innovation can only spring out of effective experimentation; waiting for others to perfect the model will leave an incumbent year's behind when they decide to also make the shift. And maybe most importantly, management must clearly communicate their vision to the constituents when venturing into something that is unknown. If this is not done, the risk is run of alienating them from the process and that they subsequently hamper the initiative.

Problem Statement Revisited and Concluding Remarks

8

In this chapter we revisit the problem statement and evaluate to what degree it has been answered and provide some concluding remarks. The outset of the paper was to answer the following main problem statement:

> *What challenges are brought forth in this industry by the possibility of Internet distribution of TV and how should these issues be addressed from the business model perspective of incumbent distributors in the Norwegian television market?*

An extensive evaluation of the industry has been carried out through market research and gathering empirical evidence in the form of interviewing industry professionals and attending an industry conference. Based on analyzing this data an entire section was devoted to mapping out challenges faced by TV-distributors and subsequently these challenges were mapped to the business model canvas according to how they impact the activity systems of incumbents. Among the challenges we identified were issues related to infrastructure and networks, battles for end-consumer ownership, rights management and changing consumer behavior. Further we identified the value proposition as the business model element that should serve as the foundation for business model innovation going forward. Based on this finding we provided a set of suggested activities that industry players should carry out in order to realign their business model activities with the current market development, and we have also presented a new business model that is congruent with the suggested activities. We argue that the problem statement has been addressed and answered in this paper.

Through gathering statistics on consumer behavior and researching the development of the TV-industry in other countries, we have been able to indicate the path development is likely to take also in Norway. Additionally all interviewees were asked to provide a statement on their thoughts on the coming five year period. These data are provided in the empirical data section, and was used extensively when suggesting a holistic new business model. Thus an industry outlook has also been provided, answering our secondary research questions.

We realize that our scope is not fully exhaustive, but within our self-selected limitations we argue that we have answered the research questions in a satisfactory manner.

8.1. Concluding remarks

The Internet is essentially emerging as a yet another distribution channel for TV-content. But the difference between the Internet and traditional broadcast networks is the opportunity it provides for offering consumers new value adding services, such as time-shifted TV viewing. We believe that much of the future lies in embracing this new channel and use it to enhance presentation of content, make it easier to discover new content, and to engage the consumer. As broadband capacity continues to increase consumers will benefit from competition on these new points of differentiation. Ultimately the Internet is providing distributors the opportunity to personalize TV-services on whole new level.

9

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List of Abbreviations

01	**ARPU**	Average Revenue Per User	11	**NPVR**	Network PVR (see PVR)
02	**CDN**	Content Delivery Network	12	**OTT**	Over The Top
03	**DBS**	Direct Broadcast Satellite	13	**PVR**	Personal Video Recorder
04	**DTT**	Digital Terrestrial Television	14	**QoE**	Quality of Experience
05	**DTH**	Direct To Home	15	**QoS**	Quality of Service
06	**FTTH**	Fiber To The Home	16	**SD**	Standard Definition
07	**HD**	High Definition	17	**STB**	Set-Top-Box
08	**HFC**	Hybrid Fiber Coax	18	**Telco-TV**	IPTV service provided by a Telco
09	**IPTV**	Internet Protocol TV	19	**VoD**	Video-on-Demand
10	**ISP**	Internet Service Provider	20	**xDSL**	x Digital subscriber line