Forming a Value Network - Analyzing the Negotiations Between Actors in the E-Newspaper Case

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Abstract

We have studied a two-year project aiming at exploring the potentials of the e-newspaper, i.e. a news service published with e-paper technology. Different actors have interests in this process, e.g. newspaper publishers, device producers, readers and advertisers. These actors are forming value networks by negotiations of interests and positions. The contribution of the paper is twofold: firstly we show how the value network created around e-newspaper is dependent on the convergence of different actors and their interests; secondly our theoretical contribution is to show how Actor Network Theory (ANT) can be used in combination with other theories - in this case genre theory - to analyze emergent value networks. ANT captures the general process of how the value network takes form, while genre theory captures the domain specific context of e-newspapers, and how this structures negotiations between different stakeholders who want to form the e-newspaper genre.

1. Introduction

Mobile business involves many different actors such as device manufacturers, content providers, network operators, payment agents, and users [1; 2]. These actors are forming value networks by negotiations of interests and positions [3]. Value networks can be understood as the network of relationships between the stakeholders of a firm [4]. The strength of a value network is determined by the added value compared to alternative networks, and by the commitment from the participants [3]. New innovations may cause the shaping of new value networks with different stakeholders [4]. Lately, a new technical innovation, e-paper technology, has entered the market with potentials for offering mobile services in a new way.

E-paper is a reflecting display technology with properties very close to print on paper in terms of contrast and readability. Different actors, such as media houses, device manufacturers, online stores *etc*., are today in the process of aligning themselves in value networks around this new news channel.

This technology is of special interest to the newspaper industry due to its capabilities. A possible replacement of the printed paper in the long run would result in radically reduced production and distribution costs. From a newspaper industry perspective e-paper is not just a new technological platform, it is also a potential new mobile newspaper service published on an e-paper device, i.e. an e-newspaper.

An e-newspaper holds the potential of merging the best of two news genres: the readability and overview from printed newspapers and interactivity and multimedia from online newspapers. However, the process of creating a possible new news genre, i.e. the e-newspaper genre, also requires a new value network supporting the genre [6]. The primary research question therefore is: *How are the interests of different actors converged in the forming of a value network around the e-newspaper?*

In this paper we describe and analyze the convergence of different actors and interests around the e-newspaper, which would form a value network that would produce an e-newspaper genre. The convergence process took in this case the shape of a series of negotiations that took place within the DigiNews project (2004-2006) which aimed at exploring production, distribution and consumption of the future e-newspaper. Two theoretical strategies were important for this research when conducting the analysis. We used concepts from genre theory to describe the domain specific subjects that would lead to the creation of a potentially new news-genre, and concepts from Actor Network Theory (ANT) to analyze the more general process of how the value network emerged.

As a consequence we will in this paper discuss how this convergence process can be analyzed as the formation of a new genre. We will describe how it is developed, formed and stabilized in a negotiation and

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struggle between the involved actors when they translate their interests in ways that finally (might) result in the characteristics of the e-newspaper genre. Thus, the new business models and services developed around e-paper technology are related to the characteristics of the new genre, but also to the process of forming the genre, i.e. the convergence.

The e-newspaper genre is still in the making, and the case that is presented in this paper gives a unique possibility to study the different forces involved in the process of forming a value network around e-newspaper. In this process different actors negotiate their interests which lead to a convergence that eventually will result in both a new genre and creating a new market.

2. Theoretical framework

To support the analysis, two theoretical departures were chosen. Based on our previous research, genre theory had been proven a good theoretical tool to analyze the formation of e-newspapers [6; 7]. Genre theory creates a possibility to analyze how a genre, here e-newspapers, emerges in a dynamic process leading to the creation of new forms, rules and functions that structure communication, i.e. a genre. Genre theory is here used as a tool to understand the characteristics of the innovation.

But this is not enough. The formation of the value network also has to be analyzed in a more actor oriented way. The way actors come together, and the power they will get in the process of creating a new e-newspaper genre, has to be understood as a convergence between different actors and their interests. Here we use a set of concepts related to Actor Network Theory (ANT) to capture the process where structures between different stakeholders who want to form the e-newspaper genre, take form.

We will therefore present, first genre theory and then ANT that will function as the two theoretical components to underpin the discussion on the e-newspaper and the associated value network.

2.1 Genre theory

The term genre comes from Latin (genus) and dates back to classical philosophy, where it was used in the sphere of classification. Today, genre is used to refer to any distinctive category of communication of any type, spoken or written, with or without literary aspirations.

Genre has been defined as a distinctive type of communicative action, characterized by socially recognized communicative purpose and common aspects of form [8; 9]. Genres are stable in terms of form and purpose, but also used, reproduced and changed over time. When changes to established genres become widely shared among members of a community, genre variants or even new genres may emerge. Such changes may be triggered by the introduction of a new communication medium [8; 10].

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The combination of computing devices and the Internet has broadened the genre research agenda beyond organizational communication to include digital genres [11; 12; 13; 14]. Examples of this are studies of the evolution of online newspapers [11; 13; 14] as well as other Internet genres [15].

Shepherd and Watters [11] coined the term “cybergenre” and have proposed a taxonomy of cybergenre evolution. They have divided the cybergenre into two classes of subgenres; extant and novel. Extant genres are based on existing genres in other media that have been transferred into the digital media. Novel genres are fully dependent on the digital media.

Replicated subgenres can be described as following the content and form of the counterpart genre in other media with little new functionality added by the new medium. In variant subgenres the content and form are somewhat different, with substantial new functionality added. An emergent subgenre has evolved from the variant subgenre to the extent that it is only marginally recognizable as the original genre. Significant difference in content and form, and most importantly, a level of functionality that makes it fully dependent on the new media has been added. Spontaneous subgenres are novel cybergenres that do not have any counterpart in other media.

Specific genre characteristics are recognized a priori in the process of communication, thereby reducing the cognitive need for information and interpretation. Several sets of such characteristics have been suggested in the literature. A genre can, for example, be characterized by having similarities in substance and form [8], where substance refers to themes and topics and form refers to observable features such as a) structural features, b) communication medium and c) language or symbol system. Others have characterized genre by its purpose and form [e.g. 16; 9]. Although often implicit in the use of genre [e.g. 8] any genre reflects a

communicative purpose, a rationale or reason for enacting the communication. Shepherd and Watters [11] argue that while non-digital genres can be characterized by the tuple <content, form>, digital genres are characterized by the triple <content, form, functionality> as the medium has functional capabilities. Functionality refers to capabilities available through the new media [11].

In this paper we focus on the characteristics content, form and functionality:

- Content refers to the substance [cf. 8], e.g. articles, news streams, video items *etc.*
- Form refers to observable features [cf. 8], i.e. the presentation format of the content, e.g. as a textbox, a button or an icon.
- Functionality refers to capabilities available through the new media [13] e.g. searching, interactivity etc.
- Purpose refers to a shared communicative purpose (or purposes) that the genre is intended to fulfill [16].

Genre is an important aspect for understanding how forms, rules and functions structure communication and interaction in digital media. However, it is important not to overly emphasize stability of genres. Genres emerge, change and shift. Changes occur and, when being communicated and shared among people, give rise to new sub-genres or completely new genres. It is also important to understand how technical forces [17] structure such changes. This has become apparent as new Internet based digital genres have evolved and gained importance, both for understanding how communication is socially organized and as a prerequisite for designers that actively want to develop new genres by designing technology use.

The development of a new genre emerges from the practices of the involved actors. However, genre theory does not give any theoretical tool for understanding what powers and forces are involved. Why does a new genre emerge the way it does? How does the relationship between certain aspects of a digital genre, such as form, content and functionality, take shape in relation to each other and surrounding forces? Genres are not created on their own – they are collective phenomena. To capture this more actor and context-oriented dimension of genre formation, ANT proves to deliver a useful theoretical component.

2.2 Actor network theory

In this paper the aim is to develop an analysis where genre theory is combined with ANT. We will analyze the development of the e-newspaper as an evolving genre by analyzing how a network of actors is forming around this technical artifact. As argued by Hanseth and Monteiro [18], Actor Network Theory (ANT) offers IS research a language for describing how technical and non-technical mechanisms can form a network of actors that will negotiate interests and trying to gain influence. Even if Hanseth and Monteiro [18] mainly use ANT for analyzing infrastructure standards, genre can in some sense be regarded as a standard for communication and interpretation, in this case in the area of e-paper news. Technical standards are a part of and forming, as well as being formed by, the evolving genre.

Actor Network Theory (ANT) recognizes that establishing and changing a social order relies on a tight interplay between social and technical means. The basic concept in ANT is the one of the *actor*. An actor may pursue *interests*, which may be *translated* into technical or social arrangements, e.g. an information system or organizational routines. Actors are typically humans, groups of humans, texts, visual representations and technical artifacts.

The social process of *aligning* an initially diverse collection of interests to "one", i.e. reaching a certain degree of alignment of interests, leads to acceptance, "truth" or stability. The solution reached is constituted by an aligned actor-network. To achieve this, one must be able to translate (i.e. represent) the interests of others (not-aligned) to one's own. The translation process is forming the actor-network by generating ordering effects such as devices, agents, institutions or organizations [19].

An *inscription* is the result of translating one's interests into material form, i.e. an ERP-system may be an inscription of management's interest to control, a vendors interest to form a de facto standard or attempts by branch organizations to create and control standards. There are four aspects of inscriptions relevant to this study:

- What is inscribed;
- Who inscribes them;
- How they are inscribed,
- How powerful are the inscriptions, i.e. how much effort does it take to oppose an inscription (e.g. in the form of workarounds of an information system).

A translation presupposes a medium or material into which it is inscribed, i.e. an *intermediary*. An intermediary is anything passing between actors which define the relationship between them [20]. Examples are scientific articles, computer software, technical artifacts, disciplined human bodies, contracts and money. There are four main types of intermediaries:

- Texts (literary inscriptions), including reports, books, articles, patents and notes. These are materials inscribed and circulated on paper, floppy disks, magnetic tapes *etc*.
- Technical artifacts, including scientific instruments, machines, robots, and consumer goods. These are relatively stable groups of non-human entities which together perform certain tasks.
- Human beings, including the skills, the knowledge and the know-how that they incorporate.
- Money in all its different forms.

The translation process consists of three stages. *Problematization* is the first stage. Here the main actor in focus identifies interests among other actors that seem to be consistent with its own interests. The actor tries to establish itself as an *obligatory passage point* [20] making itself absolutely necessary for the other actors. *Interessement* is the second stage in translation where the main actor tries to convince other actors to accept its interests. Through *enrollement* the actor tries to draw the other actors into its scheme of actions and accepting them as the main course for action and identity. By creating technical (or other) artifacts and inscribe interests in them, the actor tries to ensure that its interests are protected [21]. *Irreversibility* is achieved when it becomes impossible to return to a point where alternative routes exist [22].

ANT thus gives us tools to capture how a value network is organized as a network of actors that try to dominate the process of creating value in the network. In this empirical case the value is tightly connected to the development of e-newspapers as a genre.

3. Research methodology

The research was conducted within the DigiNews project (ITEA 03015) described in detail in section 4. Within this project a multiple method approach [23] was taken in order get to a richer understanding of the research topic. In the project we used several data collection methods, such as interviews, workshops, questionnaires and tests with different actors such as publishers, advertisers, readers and device producer. In table 1 we give an overview of these activities besides the seven project meetings with the whole consortium, six telephone meetings with various project members and six meetings with the Swedish steering group.

In this paper our aim was to analyze how the negotiations between different actors shape the emergence of the e-newspaper genre. When analyzing all the available interview transcriptions, project documentation, notes, test results *etc*., we especially looked for the expressed interests of each actor and oppositions between actors, i.e. patterns were identified in the material [24]. Excerpts in the transcribed material were marked with assigned colors, facilitating data categorization according to corresponding themes, in our case we categorized according to distribution, newspaper content, device, content management, business models and demonstrator issues.

Table 1. Actors vs. data sources

Actors	Data source
Publishers	30 interviews, 16 workshops, 8 focus group sessions
Readers	5 focus group sessions, 3 workshops, 3 user tests and interviews (19 respondents, 36 respondents and 12 respondents respectively), 5 questionnaires
Advertisers	3 workshops, 2 interviews
Device producer	1 interview, project documentation
Technical solution provider	Project meetings, project documentation

4. The DigiNews case

In this section we describe the DigiNews case, which later will be discussed and analyzed from a genre and an ANT perspective. The case description is organized in the following way: first background and the initiating actors are described. After that, distribution will be used as a way to describe how infrastructures played an important role when forming the network. Thereafter the description will focus more on how these conditions came to form the emerging genre in terms of content and device. The sections about content management, business models and prototypes draw us back to the importance of understanding actors and network alliances.

4.1. Project initiative and organization

The initiative to the DigiNews project was taken by the device producer Philips and the Swedish

Newspaper Publishers' Association. The basic interest from Philips side was to find suitable content for the e-paper device and the newspaper industry was looking for new digital publishing channels. Thus, they had a common interest in investigating e-paper as a new technology for publishing newspaper content. An initial group of partners were invited to join in an application for an ITEA project. Newspaper publisher organizations were invited as well as technology solution providers and researchers. The technology solution providers were invited to the project depending on the needs identified in the project, and the researcher depending on competence areas.

The interests from the different participants were negotiated in the planning process, e.g. small technology solution providers built in ideas such as text to speech, payment and security solutions *etc.*, that were consistent with their line of business.

The project application was successfully approved and all participants then applied for funding in their country. There were some partners that failed to get funding and thereby left the project consortium. The advent of a technology solution provider leaving the project resulted in that functions that were important parts of the solution were excluded or down prioritized. One such example is the text to speech solution, when the company evoking that solution left the consortium the text to speech solution was excluded in the project.

4.2. Distribution

One of the most critical issues in the e-newspaper solution was distribution. It became clear that different solutions might be interesting for different geographical areas, different types of content, different types of target groups, different types of devices *etc*. In other words, distribution would be overlapping several infrastructures such as IP, DAB, 3G, WiFi *etc.*, depending on where, what, when, and to whom. In addition to distribution capacity, the distribution issues also have impact on publishing systems and formats, thus also on the newspaper content design. These issues were therefore very important to the publishers and received special attention from researchers. The distribution issues were widely discussed and the relation to business models was stressed in these discussions. The publishers experience from for example charging for content on the internet and the revenue shares in telecom made the publishers stress the importance of a solution where they would be in control of distribution. However, the device producer was worried that an integrated solution for distribution would require new standards which they from experience in other areas regarded as a major challenge.

4.3. Newspaper content

Naturally, the publishers were the most engaged in the design of the e-newspaper content. Their interest in e-paper technology and the properties close to print on paper raises hopes of finding a digital replacement for paper in the long run. The purpose of the e-newspaper from their perspective would be to offer a reading experience as close to the printed newspaper as possible, making use of the possibilities offered by digital media. Newspaper designers from several newspapers in Sweden and Belgium were engaged in designing prototypes with this vision in mind. These designers views were that the e-newspaper would benefit from taking the best from two worlds i.e. the printed newspaper and the online newspaper, thus making use of the benefits of the e-paper having properties close to print on paper and the benefits from e-paper being a digital technology. In order to ensure reader's views on the values from print and online newspaper and to bring the best from both worlds in the design of the e-newspaper, numerous workshops were held with readers and newspaper staff. The outcome of these activities was input to a design focus group of newspaper designers who designed prototypes with different design solutions.

There were several challenges to address in the design. The most pressing was the limited screen size. Due to the limited screen size of an A5 there was a challenge in shrinking the print newspaper layout. One of the newspaper organizations performed a test to transfer all content from one day's edition of the printed newspaper to a template in the publishing system constructed according to the specifications of the e-reader devices screen size and lay-out possibilities. Some content was excluded due to the format not fitting, e.g. the TV schedule and obituaries. The test showed that the content and form of an e-newspaper has to be distinctive for this type of media. Taking almost all content into a page layout in an A5 format resulted in about 400 pages. As a result, navigational issues were paid special attention when giving form to the e-newspaper. The different design suggestions were tested with readers by researchers at different stages of the project.

Another important challenge discussed mainly from the publisher point of view was designing new advertising formats to attract advertisers to the e-newspaper still appreciated by readers.

The device producer had another idea of the purpose of an e-newspaper. The publishers would according to their model publish single articles in a huge content management system from which customers could buy single articles they found interesting. One technology solution provider provided an interface where users could access the e-newspaper content. This solution was more or less ignored by the publishers since it was not in line with their ideas of the e-newspaper concept.

4.4. The device

The reading device with e-paper technology that was intended to be used in demonstrating the solution was developed in parallel with the project by the device producer. The capabilities of the device obviously had influence on the design of the e-newspaper. The requirements on the device were to a large extent based on the publishers' interest but there were also technology solution providers that argued for implementing their solutions in the device. The Swedish publishers tried to convince the device producer that color is extremely important for a successful e-newspaper. This view was tested and confirmed with readers and advertisers in Sweden. Color was especially stressed as important by advertisers. However, color was not regarded as important by the publishers from other countries.

Another example of requirements from publishers on the device was the need for handling columns in forming the content, with the argument that readers expect this form for news content. Yet another example which has been paid a lot of attention in the project was content navigation structure. Supporting hyperlinked navigation as well as sequential, supporting the readers reading behavior such as relaxed as well as task oriented are examples of these requirements.

During the project, the consortium was regularly informed about the development of the e-paper technology and later also about the e-reader device. The display size was about A5, some publisher tried to argue that A4 was the limit for how much a newspaper can shrink. This also put constraints on navigation support balancing content and menus *etc*. This small size was according to the device producer related to technical limitations. There was no support for columns even though publishers wished for that, this was an interest that the device producer did not find to be relevant enough to prioritize in the development. A third example is that there was no support for color which had not been solved in the laboratories which led to some of the publisher losing interest in taking part in the testing and demonstration phase of the project.

During the end of the project the development and manufacturing of the device left Philips and continued in iRex, a start-up company that originated from Philips (both companies are referred to as device producer).

4.5. Content management

Another critical part of the e-newspaper solution was the content management system including digital rights management and security issues. The technology solution providers took a background position in the negotiation about these solutions since their interests were related to more detailed parts. This issue played out to be tensed between the device producer and the publishing organizations. The device producer took the lead presenting a solution with a central database fully controlled by the device producer itself, all from including security, payment and DRM solutions, to aggregating and distributing content. In this solution, the device producer would be the hub of the entire system even controlling advertisers and reader relations. In their sketch, the publisher role would be to provide content such as articles that could be sold to readers via this hub. This means that all stakeholders, weather content providers, advertisers or readers, would obligatory have to pass through this hub.

The publishing organizations reacted strongly to this suggestion and there were intense negotiations concerning this issue. For some time, this discussion paralyzed the project. The publishers could not accept such a solution as it would violate their core business model of selling news to readers and exposure to advertisers. Further they stated that the fundament for the newspaper, their brand and trustworthiness would be invisible in such a solution. These interests were not fully aligned in the project but a compromise was agreed upon in order to be able to finalize the project and demonstrate and test the e-newspaper solution. In the testing, the device producer's database was used to distribute the content and the publisher took the content provider and aggregator roles.

4.6. Business models

As described earlier the publishers and the device producer had a common interest in initiating the project. The publishers tried to bring their traditional business model into the project and stressed the importance of forming the e-newspaper to leverage

reader as well as advertiser values. The researchers took a role in investigating the business aspect mainly from the publishers view point. This resulted in several studies on user and advertiser s value perceptions and preferences. The device producer had an agenda of launching a new device for a mass market. The interest from the device providers takes its start in the properties of the display technology. As e-paper technology is heavily directed towards text and reading there was a need to secure relevant content for an e-paper device before launching. Therefore, they regarded newspaper content as very interesting since it is widely ingrained in people's habits. In other words, they were interested in the wide audience of newspaper readers as a market for their reading device.

During the project it became clear that the competition between the different roles would change with an e-newspaper solution. Integrated infrastructures would have impact on the value networks that are very isolated within each infrastructure today. The competition within the newspaper publishing industry would change, the limitations of print distribution would no longer be as essential for competition. These insights resulted in more reluctant attitude to discuss business models openly in the project.

4.7. Demonstrator

At the end of the project a demonstrator based on the device, an IP distribution and newspaper content from several newspapers was produced. Due to the limitations of the device all intended functionality could not be demonstrated. The demonstrator of the production, distribution, and consumption of the e-newspaper was set up at one of the Swedish newspapers, Sundsvalls Tidning. A publishing system was designed by consultants to be able to feed the device with newspaper content. Ten families were selected as test consumers and the e-newspaper was distributed through the internet. The families had the e-newspaper delivered twice a day during a two week period.

5. Discussion

In this section we will analyze the DigiNews project in relation the theoretical standpoints from ANT to understand the process of forming the value network and genre theory to understand the subjects of negotiations. According to ANT actors pursue interests which they try to translate into technical and social arrangements and thereby trying to make their interests legitimate and also align different interests into an actor-network. The very formation of the DigiNews project could in ANT terms be seen a phase of problematization, where the main actor identify common interests among the other actors that are consistent with its own. In the following we will identify the different actors that can be found in the DigiNews case and their different interests. The role as main actor is varying in the course of the project. We will then analyze the translation process in terms of the genre characteristics form, functionality and content.

5.1. Actors and their interests

In table 2, we identify the actors and their main interests in the DigiNews project.

Table 2. Actors v. interests

Actor	Interest
Primary actors	
Device producer	To have content to the device in order to gain market acceptance
Publisher organization	To guard the e-paper potential for the news industry
Publishers	Get a new profitable digital channel for news and mobile services
Other actors	
Small technology solution providers	To make sure that their technical solution was incorporated in the solution
Represented by other actor	
Readers	To get high quality services in a device that is easy to interact with
Advertisers	To find new advertising models based on targeting
Infrastructure providers	To provide the infrastructure and be a part of the value chain

The initial primary actor was the *device producer*. Second to the device producer the *publishers* tried to take on the leading role together with the Swedish Newspaper Publishers' Association (*Publisher organization)*. The publisher organization represented the Swedish publishers in the project meetings. Thus, they represented the publishers' interests, but had also an interest in developing the publisher industry.

Several *small technology solution providers* tried to get attention and become a part of the actor network. Often they took on a more passive role at the project meetings but took a more active role in the work packages where their technology was represented.

The *readers* were only represented in the project by

the studies performed by the Swedish researchers. The readers have an interest in the device and services as consumers, and are thus important for all other actors to relate to.

Advertisers had an interest to target readers. They were not actors in the project, but the Swedish researchers represented their interests.

On the infrastructural level the *infrastructure providers* were important but were not invited to take an active role in the project. The Swedish researchers provided an overview of possible solutions depending on different infrastructures.

As ANT theory reminds us, making other actors take on ones interests is an important asset in an actor-network.

5.2. The battle over functionality

The device producer had for natural reasons strong interests in defining the functionality of the e-paper device. But their interest was not limited to the device itself. They also had an interest to make their own technical platform a de facto standard for publishing content, thus establish themselves as an *obligatory passage point*. This included a strategy to develop a proprietary system for content management. The device producer did not want to put a device on the market without existing content and content providers. The device producer *inscribed* this interest into a suggestion for an all-encompassing database.

However, this *interest* could not be *aligned* with the publisher *interest*. The publishers did not accept a solution where they would lose control over distribution, reader and advertiser relations. Further they stated that the fundament for the newspaper, their brand and trustworthiness would be invisible in such a solution. The publishers' main interest was to make their business model default for selling news and attract advertising. Therefore, they had an interest in *aligning* the device producer in the *interest* to sustain their traditional business model. However, as stated above this was not an option for the device producer. This created a tension in the project.

The conflicting interests of the device producer and the publishers lead to a struggle of becoming *obligatory passage points* in different ways. The device producer's *inscription* of *interests* in the device and publishing platform was in conflict with the *intermediary* prototypes and publishing system *inscribing* the publisher *interests*. The publishers *enrolled* the readers and advertisers through the researchers and used their interests as arguments to align the other actors. The readers also wanted to have features from both the printed and online newspaper genre, e.g. navigation (both sequential and hyper links) and interaction. The advertisers were interested in increased targeting possibilities. These interests were used as arguments from the publishers and researchers to influence the functionality of the device, although not very successful.

The small technology solution actively tried to inscribe their *interests* by struggling to implement their own technical ideas in the solution, thereby making themselves necessary for the other actors. Their main interest was to make other actors acclaim the need for their sub-solutions. One example was the text-speech functionality. As soon as that provider withdraw the other actors lost interest in that function.

When the development of the device was moved to iRex, Philips no longer had an *interest* in being an active part of that network, even though they still were the official project leaders of the DigiNews project. The *interest* from other actors in the network towards Philips also diminished. That did not mean that the importance of the device producer as an actor in the network decreased.

The researchers argued for the device to support several different standards for distribution, infrastructure and security technologies.

5.3. The struggle for form

Swedish publishers and researchers argued that the device producer must develop more support for expressing aesthetic features, such as color and traditional newspaper layout with columns with integrated photos *etc.,* in line with the printed and online newspaper genres. *Negotiations* about color revealed *conflicting* views of its importance, which can be analyzed as a struggle to define genre specific form properties.

The device producer argued for a totally different solution based on their business model idea that builds on single articles and advertisements handled by their own system. In this case the traditional newspaper layout was seen as of no *interest*.

Philips *enrolled* one of the small technology solution providers and let this firm develop an interface corresponding to their *interests*. This interface was in conflict with the *intermediary* prototypes developed by the design focus group of Swedish publishers.

In collaboration with readers specific form items for the e-newspaper genre was developed by the design group. Examples of such form items were miniature pages, content overviews, thumb navigation *etc*.

5.4. The quest for content

Both the publishers and the device producer had an *interest* in content. The device producer wanted to launch a new device for the mass market. The *interest* from the device producer takes its start in the properties of the display technology.

They needed to establish that there is relevant content for an e-paper device before launching a product. A device without content is not interesting to the market. Therefore, they regarded newspaper content as very interesting since it is widely ingrained in people's habits. In other words, they were interested in the wide audience of newspaper readers as a market for their reading device.

The device producer's actions to *inscribe* their interests in the solution had the consequence of challenging the content provider role in the value network. Since their business model builds on the publishers selling single articles and that they would "take care" of the advertiser business themselves, it is in total conflict with the publishers' core business.

The publishers' most important asset is their content and their trustworthy brand which they are not willing to trade in the way the device producer was proposing.

The readers showed an interest in new content specific for the e-newspaper genre. Examples of such content were position and personalized based services.

5.5. The pursuit of purpose

As demonstrated in the case description there was several conflicting views of the purpose of the e-newspaper. The device producer view of the e-newspaper purpose was to secure that there would be interesting content for consumers to take an interest in the device. However, they did not regard the device to be exclusive for the e-newspaper. They regarded the newspaper articles to be one type of content along with other such as books, magazines *etc.,* to be available for consumers through their system.

The Swedish newspaper publishers' interest for the e-newspaper was that it could be accepted by print newspaper readers. In their interest, the initial purpose was to be able to distribute a substitute for the printed newspapers in areas where subscribers are very distant, thus cutting distribution costs in sparsely populated areas. In the long run they regard the e-newspaper as a possible replacement of the printed newspaper. The publisher organization and the other European publishers emphasized the purpose to attract young and new audiences.

Readers regarded the e-newspaper purpose to be a complementing mobile service and maybe a possible replacement for the printed newspaper in the long run. For the advertisers the purpose of the e-newspaper was increasing their targeting of readers.

5.6 Towards alignment

The characteristics of the e-newspaper genre in terms of form, functionality, content and purpose are of course deeply interrelated. Publishers, naturally have a strong interest in the functionality of the new technology for distribution and consumption of newspapers (and of course in form and content). But we could also see that main actors, such as the device producer, have strong interests in traditional publisher issues, e.g. content and business models.

When this study was ended, the process was still running. New actors (e.g. Amazon) and new devices (Sony Reader, Bookeen Cybook, STAReBOOK) are still entering the network, and the translation processes keeps going. This means that the network is not aligned, the market structure is still under formation and the genre as well as what will become a value in the network, is still in the making.

In this paper we have described the negotiations between different actors in the formation of the e-newspaper genre. We have established that there has not yet been an alignment of the actors in a value network. We believe that a possible cause for this might be that the primary actors, i.e. the device producer and the publishers were too focused on guarding their own interests and not willing to aligning around someone else interests. Looking at the present it is interesting to notice that Amazon has taken the primary role on the American market, i.e. not a device producer or a publisher.

Another reason might be that the different actors' interests were not valued according to a business point of view. In that case it would expected to view the consumers (readers) as a primary actor. The device producer chooses not to listen to the readers. By ignoring the important interests of the ones that are going to buy and use the device and services, lead to the publishers not believing in publishing in the device.

There are currently newspapers publishing in the iRex device, both are financial newspaper not depending on newspaper layout as much as daily newspapers. Le Monde is currently publishing in the Amazon Kindle, also without a proper newspaper layout. None of the Swedish newspapers are currently publishing in any e-paper device. They are still

awaiting the support for form, functionality and content which are in line with their interests in the e-newspaper.

6. Conclusion

In this paper we have shown how the interests of different actors converged through negotiations in the formation of a value network around a mobile innovation, the e-newspaper. By combining ANT and genre theory we analyzed the complexity in the process of aligning value networks around a new mobile innovation. ANT proved to be a useful tool in analyzing the process of forming the value network, while genre theory was useful to address the characteristics of innovations in the specific business area of newspapers. With the ANT approach it became obvious how both primary actors were trying to take control of the value network. Sometimes this was done by attempting to control organizational issues and business models. Sometimes the technical artifacts where used to promote interests. Even though the companies took the initiative forming the DigiNews project based on a common interest they were not able to align their interests into a functioning value network. The project resulted in two parallel solutions of the e-newspaper each inscribing one of the primary actor's interests.

By conducting this analysis we have shown how Actor Network Theory (ANT) can be used in combination with other theories - in this case genre theory - to analyze emergent value networks. ANT captures the actors negotiating interests when forming the value network. Genre theory captures the domain specific characteristics of the innovation, in this case the e-newspaper, and how this structures negotiations between different stakeholders.

The conclusion for practice is, when aligning a value network around new mobile innovations it is recommended to not take a "guardian" approach protecting traditional values, but a more open and sensitive approach to the other actors in the network. Of special importance are the end-consumers.

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