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DESIGN PATTERNS FOR THE ONLINE NEWSPAPER GENRE

- A GENRE ANALYSIS OF 85 SWEDISH DAILY ONLINE NEWSPAPERS

Abstract

This thesis focuses on the role of design patterns in the design of the online newspaper genre. The research question put forth here is: How can design patterns be used to improve the online newspaper design process? Genre theory was applied to revile the structure and visual pattern of online newspaper design in an analysis of 85 Swedish online newspapers. Based on the results from the genre analysis, the concept of design patterns was used in forming basis for a common language for actors involved in designing online newspapers. This thesis provides a) a framework for understanding design characteristics of a specific digital genre, usable for generating design patterns b) a mapping of the design characteristics of the Swedish online newspapers c) a basis for a common design language, expressed in a template for design patterns based on genre characteristics for the online newspaper genre and d) a number of high level design patterns written specifically for front pages of online newspapers.

Keywords: digital genre, design patterns, online newspapers

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1 Introduction

In 2001, Sweden had the fourth largest newspaper consumption in the world, only Norway, Japan and Finland had larger consumption according to WAN – World Press Trends [1]. Today, most Swedish daily newspapers have an online version, these are defined as the online newspaper genre (Watters & Shepherd, 1997; Eriksen & Ihlström, 2000; Schmid-Isler, 2000). The newspaper industry has always been information intensive, providing editorial, advertising, and general information content. The genre of the traditional print and broadcast media has expanded with the introduction of the Internet. Digital media offer the opportunity for deeper content, multimedia, and interactivity not possible in the print medium (Eriksen, Ihlström & Palmer, 2000).

Hedman (2002) predicts that newspapers will be read on screen in the future to larger extent than today, even if he believes that the paper edition will stay. He also thinks that the online newspapers will be more interactive in the future. In his predictions for the future, Nielsen (2000) speculates that over the next ten years (from 2000), the traditional newspaper will be dead and news will be consumed interactively through digital media. He argues that media workers must modify their skills for the interactive age, since reading online is different from reading print. Therefore publishers need to change their styles and must learn to incorporate interactivity in publishing news. According to a publication by The Swedish Newspaper Publishers' Association, newspapers have long experience about what readers want but not enough knowledge about new media (Fischerström, 2002).

Cato (2001) refers to the design of online newspapers as the newsprint style and has found that it seems to have gained predominance. There is a tradition of layout (visual pattern) for newspapers that seem to be taken for granted – the so called broadsheet layout. The broadsheet metaphor is described as “*a newspaper layout of text and photographs...integrated into a coherent presentation*” (Shepherd, Duffy, Watters & Gugle, 2001, pp 151). Newspapers have a long experience of designing print media but the design of online newspapers is still in its infancy (Nielsen, 2000).

Interestingly, the first web news providers adopted the web's single document window mode of presentation. Garcia (1997) presented advice for publishers for redesign of printed news to the web in 1997, where the design of online news differs from printed news. Now, the dominant online newspaper genre appears to be evolving back to something closer to its original genre in print (Shepherd & Watters, 1998).

Knowledge and advice about interaction design is expressed in guidelines (Smith & Mosier, 1986), sets of principles (Schneiderman, 1998) and standards and style guides as those by Microsoft and Apple [2;3]. There have been many books written on the subject, for example; *Designing the user interface* by Schneiderman, *Interaction Design* ed by Preece, *Human Computer Interaction* by Dix et al. Well known practitioners such as Jakob Nielsen have set up web pages to support designers in their design practice [4].

There are problems for designers in a specific genre however, to use these sources as the principles in style guides are universal. For example the principle of “simplicity”, is not very clear when it comes to applying it to a specific situation. Another example is that standards can be too detailed to provide guidance in deciding a solution in a specific context (Mahemoff & Johnston, 1998). There is a challenge to handle the increasing complexity and diversity of interaction design (Erickson, 2000). Eriksen, Ihlström and Palmer (2000) discuss that there are challenges for design of online newspapers, related to possibilities and functionality not possible in the printed newspaper.

Lately there has been great interest in design patterns as an alternative to guidelines (Broschers, 2003; Pemberton & Griffiths, 2003; Tidwell, 2003). Design patterns suggest solutions for recurrent problems, show earlier appropriate solutions, and are more concrete than guidelines (Mahemoff & Johnston, 1998). Design patterns can possibly serve as a common language for actors involved in designing for a specific genre. Pemberton (2000) suggests genre as a useful conceptual tool for giving structure to design patterns appropriate for a specific context. Genre can, according to Toms and Campell (1999), potentially serve as an interface metaphor. The concept of genre has been suggested as a potential tool for structuring design of new IT appliances by Brown and Duguid (1996).

The task for a web designer, or as in the case of this study, an online newspaper publisher, will be made easier if the constraints imposed by previous design within a genre, are made known. As online newspapers are published daily, these constraints or genre rules will constantly change in discussions between designers, the acts of designers, the acts and discussions among the audience/readers/users and possibly advertisers. Development of design patterns for a genre could be a useful way of making some of the knowledge within a genre explicit in descriptions that easily can be updated. These descriptions can possibly express effective solutions to recurrent design problems within a specific genre.

This thesis focuses on the role of design patterns in the design of the online newspaper genre. Based on an understanding of this genre, the objective of this thesis is to contribute design-specific knowledge that is useful in the design practice of online newspapers. The research question put forth here is: **How can design patterns be used to improve the online newspaper design process?** In order to address the research question formulated, this thesis will provide: (1) a basis for a common design language suitable for actors involved in designing online newspapers, (2) a number of high level design patterns specific for front pages of online newspapers.

In this thesis genre theory is applied to reveal the structure and visual pattern of online newspaper design. This can be done by analyzing online newspaper front pages using genre concepts to identify the characteristics of design. The concept of design patterns can be used in forming basis for a common language for actors involved in designing online newspapers based on the results from the genre analysis. In this thesis, analysis will be done of the front pages of 85 Swedish daily online newspapers, as grounds for writing design patterns.

2 Theoretical background

In this section the concepts of genre and design patterns are presented. To give an understanding of the concept of genre, and to why it is interesting to apply in an analysis of design structure, a background description will be presented. Thereafter an introduction to how the concept of genre has been used in digital environments in general and to online newspapers in particular is given. The concept of design patterns is introduced to show how design patterns can be used as a common language for communicating design practice. Finally the two concepts are compared regarding their relevance to design of online newspapers, and the study of this thesis is put in relation to the concepts.

2.1 Genre concept

“The concept of genre offers the possibility of recognizing similarities even in the midst of great diversity.” (Shepherd & Watters, 1998, pp 97)

2.1.1 Genre background

The term genre comes from Latin (*genus*) and dates back to classical philosophy, where it was used in the sphere of classification. Genre is widely used as a classifying statement, especially in the fields such as arts, literature and media. A detective story, a short story or a newspaper article are all regarded as belonging to different genres (Breure, 2001). The concept of genre was introduced to the IS field by Yates and Orlikowski (1992). The authors introduced the concept as a way of identifying types of organizational communication.

Genres exist within communities ranging from the small work group to the organisation and finally to the level of national culture (Yates & Orlikowski, 1992). According to the authors a genre has a pattern from which an instance is recognized as member of a specific genre within the community. A genre is formed by, and evolves within the community.

Genres are structured in hierarchies, with lower levels labelled as sub genres. Genres exist at various levels of abstraction, from the very broad to the very specific (Yates & Orlikowski, 1992).

There are different views on what characterizes a genre. Yates and Orlikowski (1992) suggest that a genre could be characterized by having similarities in *substance* and *form*. Substance refers social motives, themes and topics and form refers to observable physical and linguistic features; structural, medium and language or symbol system. Or a genre may be characterized by its *purpose* and *form* (Crowston & Williams, 1997; Orlikowski, & Yates, 1994; Swales, 1990; Yates, Orlikowski & Rennecker, 1997). Purpose refers to intention and form as described above. Swales (1990) argue that the communicative rationale of a genre will constrain *content*, *positioning* and *form*.

Genres are enacted in certain recurrent situations, such as acts of communication. The potential of genre modification is inherent in every act of communication (Yates & Orlikowski, 1992). This is described as a recursive cycle with every act being *maintaining*, *elaborating* or *modifying*.

Modifying acts may be triggered by material or perceptual changes such as social (attitudes and expectations), economic and technical (media capabilities and constraints or change of media). According to Ericksson (1997) change of media may even speed up the evolution of a genre. Modifying acts may also be triggered by how groups recognize and respond within the community, according to Yates and Orlikowski (1992).

There are rules that genres are enacted through, associated to appropriate elements of genre characteristics (Yates & Orlikowski, 1992). According to the authors, not all but enough distinctive rules must be followed for a particular instance of a genre to be recognizable i.e. it has the character of “taken for granted facts”.

These genre rules may operate tacitly or may be codified into standards on different levels stated by individuals or medium (Yates & Orlikowski, 1992). Genres are reproduced when individuals draw on rules. This reinforces and sustains the rules.

Genres are produced, reproduced and changed over time (Yates & Orlikowski, 1992). If a new pattern is invoked only by a single individual it may be of interest as stages of evolution, but not considered as genre change. If more individuals follow the new pattern and the pattern eventually becomes “taken for granted” it will change the genre rules. When changes to established genres become widely shared among members of a community, genre variants or even new genres may emerge (Shepherd & Watters, 1999).

2.1.2 Digital genre

Digital genres are described as a classification system for kinds and types of digital products (Scmid-Isler, 2000). Watters and Shepherd (1997) mean that digital genre provide recognized contexts for both form and content which enables users to shape models or understandings of the genre. The digital genre gives users of different systems a framework of familiarity. This also provides user expectations. According to Watters and Shepherd (1997) the digital genre also incorporates the notions of user interactions and processing.

The term cyber genre was introduced by Shepherd and Watters (1998). In their taxonomy that describes genre evolution, cyber genres are divided into two classes of sub genres; 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 and have no counterparts in other media.

Changes may be triggered by the introduction of a new communication medium (Yates & Orlikowski, 1992; Yates, Orlikowski & Rennecker, 1997). Shepherd and Watters (1999) argue that the functionality afforded by the new medium drives the evolution of cyber genres. The functionality not only drives the evolution but, as proposed by Erickson (1997), online interaction has the potential to greatly speed up the evolution of genres.

Shepherd and Watters (1999) argue that while non-digital genres can be characterized by the tuple <content and form>, digital genres are characterized by the triple <*content*, *form* and *functionality*> since the medium have functional capabilities. Users therefore have expectations

regarding functionality. Functionality refers to capabilities available through the new media (Shepherd & Watters, 1998).

Schmid-Isler (2000) proposes that a digital genre is characterized by its function which she defines as the purpose of a digital genre. She means that form is a visual and functional recognition and discusses different visual patterns as how a genre is recognized. According to Shepherd and Watters (1999), functionality cannot be discussed without reference to the goal or purpose of the genre. The purpose must be viewed from the perspective of the author of the site and thus, the functionality incorporated into the site is driven by this purpose. According to Schmid-Isler (2000) the content is thoughts of the sender's world put in to meaning in the receiver's world by packaging it into form in the digital media.

Toms and Campbell (1999) suggest that a digital document is described by

- “document *function*: the semantic content of the document,
- document *form*: the visual appearance of the document, structure, as manifested by its specific formatting and layout, and,
- document *interface*: the means by which the document is.” (pp 1)

The authors suggest that the identification of a document's purpose occurs through recognition of two sets of cues received from a document's form and function. Correct identification occurs when these cues, are consistent with those defined by its class of genre. These cues may be features of format and layout, such as the use of columns, or of a particular typeface. They can also be features of special use. As a consequence a genre can serve as an organizing metaphor to facilitate a user's recognition; the genre of a document typically communicates itself to the user through these visual cues (Toms & Campbell, 1999).

Implications for web site design are discussed by Crowston and Williams (1997). They believe that designers must be aware of user's expectations of a genre. They have found that many web pages do not communicate the intent to the user and mean that to make clear the genre, could be a useful way of overcoming this problem.

2.1.3 Online newspaper genre

The broadsheet genre was introduced by Watters and Shepherd (1997) as a consistent and familiar metaphor for digital version of the newspaper broadsheet. This genre incorporates the notions of user interaction. The integration of the web medium and the traditional newspaper genre defines a genre for digital newspapers. The concept of an online newspaper genre has also been described by Eriksen and Ihlström (2000) and Ihlström & Lundberg (2003). Ihlström and Lundberg (2003) describe how readers scroll the front page to get an overview of the contents of the news site instead of browsing through the printed newspaper.

The visual pattern for newspapers is strongly related to the front page according to Schmid-Isler (2000). She describes the visual pattern as a) the name of the newspaper – the brand, b) the number of columns, c) headings, d) photographs and e) table of contents (often to the left). Shepherd et al (2001) describe the broadsheet metaphor as a newspaper layout with text and photographs integrated into a coherent presentation. According to Toms and Campbell (1999) a

reader may recognize a document as a newspaper even before reading the content, through the appearance of columns and headlines.

Eriksen and Ihlström (2000) describe the evolution of the online newspaper genre using the characteristics of purpose, content and form. The authors identified features that are typical for online news sites as presentation and conceptual elements. These elements are presented in table 1 and 2.

Table 1. The four presentation elements of news sites (Eriksen & Ihlström, 2000, pp7)

Element	Function
Hard composite	To present many articles within limited space.
Soft composite	To present a few articles within limited space.
Article	To present a single article.
Structure	To present site navigation.

Table 2. The five conceptual elements of news sites (Eriksen & Ihlström, 2000, pp7)

Element	Function
Headlines	To present stories of highest interest.
News Streams	To present recent stories ordered by publishing time.
Hard News sections	To present recent stories related to specific theme.
Soft News section	To present stories related to specific theme.
Archive	To allow access to historical articles.

One example of an online newspaper that has been referred to as an instance of the genre by Eriksen and Ihlström (2000) is Göteborgsposten (see figure 1 on the next page).



Figure 1. One example of an online newspaper according to Eriksen and Ihlström (2000)

2.2 Design Patterns

“Pattern language is a way of representing and accumulating knowledge of good design.... Pattern languages might be a link between theory and practice in a way that is understandable and teachable.” (Tidwell, 2003, pp1)

2.2.1 Design patterns – background

The concept of design patterns was developed by the architect Christopher Alexander and colleagues (Alexander, Ishikawa, & Silverstein, 1977). The purpose was to create a common language for designers and every-day people, to involve them in shaping their future homes. Alexander and colleague’s pattern language is a collection of architectural design patterns.

According to Alexander (1979), patterns should focus on the context. They should describe the core of a solution. Patterns tells the designer *when, how* and *why* the solution can be applied and explicitly address the problem in the specific context (van Weile, van der veer & Eliens, 2000).

Design patterns are described on different levels and a hierarchy of patterns form a pattern language. There are different types of patterns at different levels. In Alexander's pattern language high level patterns deal with states, towns and cities while lower level patterns deal with chairs and window panes (Alexander et al, 1977). This hierarchal structure is why patterns can vary widely in their granularity (Mahemoff & Johnston, 1998).

Design patterns have different structures. The structure according to which a design pattern is written is referred to as pattern template and it is formulated at an appropriate level of abstraction (Graham, 2003). Pemberton and Griffiths (2003) describe how Alexander's own patterns are structured and formatted as follows in short:

Title: To capture the solution the pattern offers in short

Asterisks: to mark significance of pattern

Picture: to show an example

Introductions: context and linking to higher level patterns

Headline: summarizing the essence of the problem

Problem body: empirical background and evidence for its validity

Solution: as a statement- in imperative form

Diagram: of the solution

Connections: to lower level patterns

A design pattern is a solution to a recurrent problem in a specific context (Alexander et al, 1977). Design patterns are intended to be best practice examples of real solutions that work. These design patterns can be used when designers encounter a recurrent design problem.

A problem or clash of constraints will occur in a context or set of situations (Pemberton & Griffiths, 2003). The authors mean that the design pattern encompasses three elements: *the situation, the problem of clashing constraints or forces, and the canonical solution.*

Design knowledge can be both tacit and explicit. Alexander called the idea of capturing the tacit qualities in the context "*the idea of liveliness in buildings – the quest for the quality without a name.*" (Alexander et al 1977, pp 129) "*...no matter what method is used, the pattern is an attempt to discover some invariant feature, which distinguishes good places from bad places with respect to some particular system of forces.*" (Alexander, 1979, pp 260) This quality can not be completely described with words (Mahemoff & Johnston, 1998).

The strength with design patterns is according to Griffiths and Pemberton (1998) the possibility of transferring design knowledge, weather it is genre-specific or general. Designers can identify and describe their solutions to design problems and write them as design patterns. Via the web the design patterns can be disseminated and taken up by other designers. Further they can be critiqued and revised in a continued collaborative development process. Design patterns can preferably be written amongst designers in writer's workshops (Pemberton, 2000).

There is no exact method to find and write patterns. Alexander (1979) describes how he goes about finding patterns. Here is a summary of some of these descriptions:

- start with observation to get a good feel,
- identify the subject of the pattern – finding what feels good,
- identify the problem,
- look for positive “best” examples of solutions ,
- or sometimes it might help to look at bad examples and resolve them.

The concept of design patterns has been adapted in many areas in the software community, especially in object oriented and extreme programming. This is partly because design patterns promotes re-use, are adaptable to designers own needs and can be used to capture “philosophies” of great design (Mahemoff & Johnston, 1998). Software design patterns are often about coding issues whereas Alexander’s research emphasises higher-level concepts. It was first applied in software design by Gamma, Helm, Johnson and Vlissides (1995). Within the software engineering community the success of design patterns led to the development of anti-patterns, i.e. how things NOT should be done. van Weile et al (2000) discuss that seeing examples of bad solutions may be very inspiring but argue that it does not help to solve the problem.

Alexander’s idea of using patterns in urban architecture included involvement of every-day people who were involved in shaping their future homes. The idea of end users designing their own software has not been adopted from the original pattern idea. This is partly logical since users do not “live” in their software as they do in their houses. Borschers (2003) mean that there is a potential push to concepts of participatory design and HCI using design patterns. According to Borschers (2003) design patterns have even more potential in HCI than in software engineering since HCI is more equivalent to architecture (se figure 2).

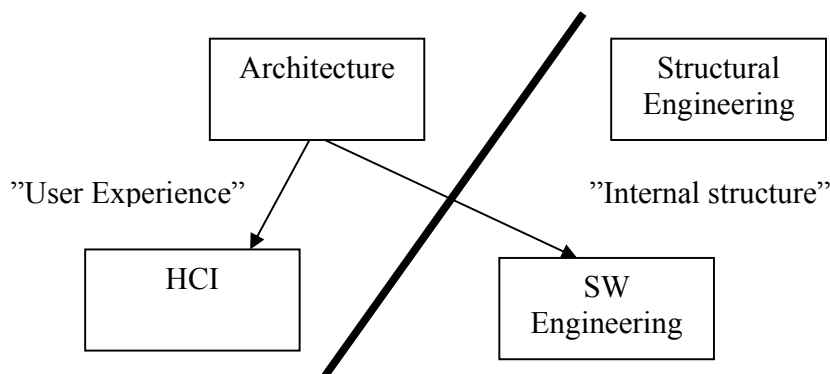


Figure 2. HCI equivalence to architecture (Borschers, 2003, pp 2)

2.2.2 Design patterns for user interface design

A pattern language is a way of representing and accumulating knowledge of good design (Tidwell, 2003). Design patterns are therefore natural to apply in interface design, but creating design patterns for user interface design is not easy (Van Weile et al, 2000). Finscher (2002)

states that HCI displays far less variety of artefacts than architecture since it is more recent and means that it might be difficult to find good examples.

The structural principal and value system are the components of a pattern language. The idea of liveliness in buildings – the quest for the quality without a name - could be compared to the concept of usability in HCI (van Weile et al, 2000). According to van Weile et al (2000) design patterns are very practical; they describe instances of good design as “best practise” examples. They are prescriptive and help designers construct new instances.

Design patterns are written on different levels and, if efficiently structured, with little or none redundancy. Design patterns that refer to web sites in general should hold for a web site that is an example of a sub-genre, such as an e-commerce web site. Such a sub-genre should also have specific patterns (Erickson, 1997).

van Weile and Trätteberg (2000) stress the importance of design patterns addressing usage problem. Each design pattern should state the impact on the usability indicators; *learnability*, *memorability*, *speed of performance*, *error rate*, *satisfaction*, and *task completion* (van Weile et al 2000). As principles are on a high level and guidelines are addressing specific details, design patterns can be an approach to help designer putting abstract design rules into context of a concrete project (Mahemoff & Johnston, 1998). According to Tidwell (2003) a design pattern should be more general than bits on a screen, but more specific than heuristics or principles. van Weile et al (2000) mean that the problem with guidelines is mainly that there is no connection to the context. They summon the critique against guidelines by “Some of the problems with guidelines are:

- Guidelines are often too simplistic or too abstract
- Guidelines can be difficult to select
- Guidelines can be difficult to interpret
- Guidelines can be conflicting
- Guidelines often have authority issues concerning their validity”

(van Weile, van der veer & Eliens, 2000, pp 2)

Pemberton and Griffiths (2003) discuss the advantages of design patterns compared to guidelines. They mean that design patterns draw the attention to the problem that is solved in the context of the whole design, and that emphasis is on the design process and not on the product. Further they mean that the hierarchical structure of design patterns gives a way of navigating all the design rules. The idea of design patterns incorporates continued evolution and collaborative development. Finally, they state that design patterns holds out the possibility of involving users as pattern languages can serve as a way of communicating between a number of parties.

There seems to be a lack of consensus according to what structure design patterns for user interface design should be written (van Weile et al, 2000). The authors mean that for design patterns it is important that the solution is a proven solution to the stated problem but that the exact format for a design pattern depends on the topic. Some topics might even need a specialized format.

There are several design patterns concerned with interface design and usability. According to Tidwell (2003, pp2) “*a pattern describes possible good solutions to a common design problem within a sustain context, by describing the invariant qualities of all those solutions.*” The most detailed design pattern for user interface design is Common Ground by Tidwell (1999, 2002). In these design patterns the structure is; *examples, context, problem, forces, solution, resulting context* and *notes*. Common Ground was developed in collaboration via the web as critiques were received.

van Weile et al (2000) suggest a structure for user interface design patterns; *problem, usability principle, context, forces, solutions, examples, usability impact, rationale* and *known uses*. van Duyne et al (2003) use the structure of *background, problem, solution* and *other patterns to consider* in describing patterns for site types or genres. Apart from these, they use headings specific for each type or genre. Mahemoff and Johnston (1998) propose a structure grounded on a design philosophy; *name, motivation, context, forces, solution* and *examples*.

Pemberton and Griffiths (2003) put Alexander’s steps of finding design patterns in relation to HCI as follows:

- Identify the subject of the design patterns – find examples HCI that work well for the users.
- Identify the problem that this design patterns resolves – design patterns resolve the possible conflict between technical, social or aesthetic forces.
- Identify invariance – empirical examples of attempted solutions to the design problem.

Tidwell (2003) argues that pattern languages might be a link between theory and practice in a way that is understandable and teachable. According to her a useful design pattern is constituted by:

- *specificity* - clear indicator, concrete solutions,
- *obvious applicability* to design problems faced by designers,
- *examples* - multiple well chosen examples that gives the reader a chance to judge for themselves,
- *evidence* - verbal explanation of why a pattern works,
- *thoroughness* - does it cover a wide range of possible problems and applications,
- *interconnectivity* – how it relates to similar patterns.

2.2.3 Design patterns for online newspapers

There are a few examples of design patterns for online newspapers. van Duyne et al (2003) calls news on the web the News Mosaics genre. The collection Interaction Design Patterns published on the web by van Weile [5] describes one design pattern called news sites.

The News Mosaics by van Duyne et al (2003) is characterized by delivering news to their readers with the depth and breadth necessary to engage them. News on the web has adapted heavily from offline news but also has problems unique to the online medium. These problems are according to van Duyne et al (2003) concerned with <time and access> and <form and audience>. The News Mosaic is described as one design pattern. Below is a short description of that design pattern with an example.

The News Mosaics by van Duyne et al (2003)

Background

All news sites must have the basics from the News Mosaics pattern, no matter if it is a newspaper news site or a television news site.

Problem

Time and access – There is a time pressure concerning expectations of the latest news. There is also expectation from readers of being able to access old news. Use page templates that contain content models to be able to update news without re-creating the page layout. The content modules can be linked to a database facilitating search possibilities.

Form – There is a limitation in how people read on a screen, many people skim. Use inverse pyramid writing style, presenting the most important information first. Online news lacks portability and large format. Break up the text in chunks and provide short and long forms of news with hyperlinks. Use links to videos or sound clips.

Audience – The challenge to News Mosaics is to select the information the readers want, but also what they “should know”, as this is a journalistic responsibility. This is in part a contradiction of offering the possibility of personalization. This is a difficult decision. The challenge is not to bury everything apart what the reader wants to read, but to give readers multiple ways of navigating and searching.

Solution

Build a mosaic of news by providing breadth and depth in categories. Highlight the most important news within each category, provide high-level summary and more in-depth information. Link to related news or to video and radio items. Archive all this information.

Other patterns to consider

All through the description there are references to other related patterns. In this section there are suggested patterns that support the solution.

In figure 3 on the next page there is one example of a news site that is shown, which Van Duyne et al (2003) mentions as an example of a News Mosaics pattern.



Figure 3. One example of News Mosaics according to Van Duyne et al (2003)

The collection Interaction Design Patterns is a collection of design patterns with hypertext links. van Welie gives examples of different types of sites where news sites is one. On the web site the design pattern for sites is described and there are hyperlinks to patterns describing suggested components in the solution. Also in this case, news is presented as one design pattern. This news site design pattern is described with the structure; *problem, use when, solution, why, more examples, known uses and related patterns*. In short it is described as follows.

News site design pattern according to van Weile

Problem

Users need to stay informed of the latest news

Use when

The site provide daily news and updates

Solution

News articles are categorized in sections. Articles have headlines, an image and a short text and when readers click the full text article appears. Sometimes there are links to related articles. News sites have main navigation presented on the first page. In some cases there is also a second navigation for access feature or service material. Some news sites givs the reader interactive services like to comment on an article, polls, login and search possibilities.

Why

A news site is a newspaper online. The use of headlines makes it easy for readers to scan, and the interactivity possibilities make it more fun.

For the headlines Known uses and Related patterns there is no text. The example given of a news site is shown in figure 4 below.



Figure 4. One example of news site according to van Weile

2.3 Genre and Design Patterns

The possibility of integrating the concepts of genre and design patterns has been discussed by Pemberton (2000) and Toms and Campell (1999). Yates, Orlikowski and Okurama (1999) conducted a study that shaped a process of a genre structuring. They refer to genre structure as patterns of structuring. The findings were used to design guidelines and templates. Organizational structures were described as patterns while Yates and Orlikowski have used genre theory to describe structure of organisational communication in different studies in 1992, 1994 and 1999. Interestingly design patterns have been used in organizational design. Erickson (1997) used genre analysis to understand how to design effective systems for supporting online discourse.

There are similarities between the concepts, summoned in table 3.

Table 3. Comparison of concepts

Genre concepts (from 2.1.1)	Design pattern concepts (from 2.2.1)
Community	Focus context
Hierarchical structure - subgenres	Hierarchical structure – levels of pattern
Genre characteristics	Pattern structure
Recurrent (communication) act	Recurrent design problems
Genre rules	Clash of constraints
Rules tacit and/or standardized	Design knowledge tacit and/or explicit
Change over time	Constantly revised and change of examples

As both concepts are hierarchical, design patterns can be written on different genre levels. A general pattern for the web as a genre can be written on one level and more specific patterns can be written for a sub-genre, such as online news. According to Pemberton (2000) genre may be a useful conceptual tool for structuring interaction design pattern sub-language. Individual pattern languages already developed might usefully be connected using the genre concept. Hierarchical language is according to Pemberton (2000) powerful since it puts detailed design issues in the context of the larger design.

The concept of genre holds that evolution of a genre is a process driven by recurrent acts and the concept of design patterns holds that design patterns should be solutions to recurrent problems. In the case of design of online newspapers the genre is enacted through design decisions and design patterns are solutions to recurrent design problems. Online newspapers are published daily and thereby the acts of design and design decisions have to be made daily.

Genre rules are formed by and form the acts and thereby the genre, and in design patterns clashes of constraints formed by the context is discussed. The community for online newspapers is the publishers, the readers and the advertisers. This also forms the context in which the constraints for design are given. Finally genres change over time and design patterns are intended to evolve constantly as new solutions and new problems arise. As the online newspaper genre evolves

design patterns would follow this evolution in constant collaborative development of the design patterns.

In summary the online newspaper genre can be described as:

- having broad normative scope,
- being on national culture level,
- the individual actor being a publisher,
- the community being the online newspaper publishers, readers and advertisers,
- the recurrent communicative act being the publisher's design of the online newspaper.

In figure 5 on the next page, a visual summary and the relations between the concepts in the context of online newspapers is presented as a model for the empirical study. This summary has been used as a working model for the study of online newspapers. Comprise of the study is marked with a dotted line in the figure.

The genre model draws on the genre concept described by Yates and Orlikowski (1992) except concerning genre characteristics. These are drawn from the triple <content, form and functionality> by Shepherd and Watters (1999) and the concept of positioning from Swales (1990). The design pattern model draws on design patterns as described by Alexander et al (1979) and from the principle of collaborative development by Tidwell (2003) and Pemberton (2000).

Enaction of genre -> Change over time

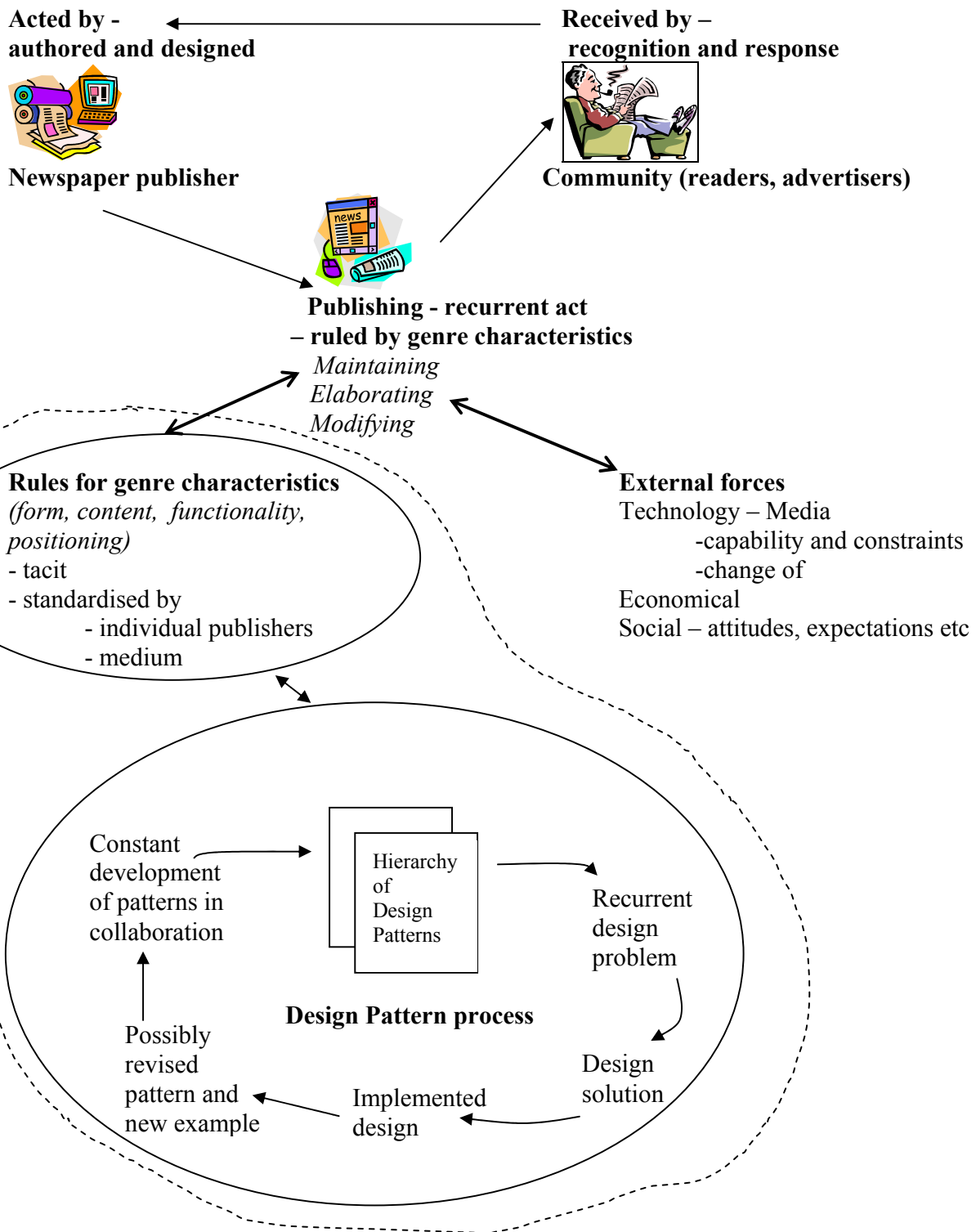


Figure 5. Visual summary of the concepts of genre and design patterns – and how they are related regarding design. The dotted line shows the focus of this study

3 Method

This section presents the approach to the study and argumentation to the choices made. Thereafter a description of how all the parts of the study have been performed is given to show that the results are trustworthy, reasonable and conscientious.

3.1 Choice of approach

In this thesis the question and aims are approached with qualitative methods. Qualitative methods aim at contributing to knowledge through description, interpretation and understanding (Patton, 2002; Patel & Tebelius, 1987). The results are influenced by the researcher's conceptions. The scientific quality of research using qualitative method can, according to Patel and Tebelius (1987), be described with *trustworthiness* (reliability), *reasonableness* (validity) and *conscientiousness* (accuracy).

Qualitative research is according to Patton (2002) characterized by three kinds of data collection: *in-depth, open-ended interviews; direct observations; written documents*. Patton (2002) discusses types of evaluations when qualitative method is especially suited. Amongst these types of evaluation, quality and state of the art considerations are mentioned. This study can be considered as an analysis of documents with the objective to find structure and pattern as well as state of the arts examples.

When research is done with the Internet as the object for a study there are according to Sveningsson et al (2003) three views, the internet as a *product, process* or *metaphor*. The product view studies for example structure and amount of content. The process view studies how information exchange is organised, interpreted etc and the metaphor view studies expressions for change in society etc. In this thesis the online newspapers are studied as a product on the Internet.

This thesis aims at providing a basis for a common design language suitable for actors involved in designing online newspapers and a number of high level design patterns specific for front pages of online newspapers. The empirical study therefore focus on structure and patterns that can be found in analysing online newspaper front pages, and how design patterns for online newspapers can be structured to form a common design language.

According to Sveningsson et al (2003) describing and analysing web pages can be done by dividing the elements into form, function and links. To do this mapping Svenningsson et al (2003) suggest that the researcher finds a categorization relevant to the aim of the study. In this study the categorization has been built using genre theory to form a framework for analysing the front pages of Swedish online newspapers.

The categorization is, according to Sveningsson et al (2003), preferably done by observing an empirical sample and exploring what elements that are actually encountered in the sample. On an element level the authors mean that it is of interest how different elements of form and function

are related. This view is comparable to the structure used in genre analysis on digital genres by Shepherd and Watters (1999) and by Crowston and Williams (1997). Their studies also include the concepts of form and functionality, adding the concept of content. Yates, Orlikowski and Okamura (1999) performed a genre analysis on a digital communication medium and they refer to the study as an exploratory study to find structure. An exploratory study is according to Patel and Tebelius (1987) suitable when examining an area where there are gaps in knowledge.

3.2 The literature study

The objective of the literature study was to explore the possibility of using genre concepts for analyzing design of online newspaper front pages. Further the objective was to study design patterns as means for creating a common design language for design of online newspapers. The search for material was done in academic databases, such as Science Direct, Libris, Academic Search, Dissertation Abstract Online, IEEE Xplore and ACM. The terms of genre, digital genre, online newspaper, pattern language, design patterns and HCI patterns were used in searching. These terms were in some cases used in combinations.

3.3 The empirical study

Online newspapers refer to daily newspapers that also have an online edition. The Swedish Newspaper Publishers' Association has published a publication (Gunnarsson, 2002) in which all 110 Swedish daily newspapers with online editions are defined. Initially, the entire sample was considered but was later reduced excluding a) online newspapers that have joint web site with another newspaper and b) newspapers which only display a 'business card' on the Internet. The final sample includes 85 Swedish online daily newspapers (see Appendix 1).

The empirical study performed in this thesis was done in two parts. The first part aimed at a genre analysis of online newspapers, by first forming a framework for the analysis of online newspapers, and second performing the genre analysis on the sample. The second part of the study aimed at writing design pattern examples by first formulating a template based on the concepts of design pattern and genre. Second the collected data from the genre analysis was used in combination with the notion of "quality without a name" by Alexander in writing the design pattern examples.

In building the framework for the genre analysis the sample of Swedish online newspapers was used. As the visual pattern of newspapers is strongly related to the front page (Schmid-Isler, 2000), the analysis was done on the front pages. The framework draws on genre theory using the genre concepts; *content*, *form*, *functionality* (Shepherd & Watters, 1999) and *positioning* (Swales, 1990).

The categories of the coding scheme were derived from studying the front pages of online newspapers. The concepts have been handled according to the relation between the concepts being: The *content* item is presented in a *form*, is sometimes given *functionality*, and is *positioned* on the front page. The genre elements of the concepts content, form and functionality are

considered as identifiable on the front page. To identify the elements the following questions were asked using the sample of online newspapers: *What content is presented on the front page?*; *In which form is the content presented?*; *Which functionality exists in the content?*

The concept of *positioning* is central while discussing the layout and visual pattern of the online newspapers. To handle the concept of positioning in the sample of online newspapers the following question was asked: *What position does the content have on the front page?*

The three first questions were used in an iterative process identifying the genre elements of online newspapers presented on the front pages. This part of the framework was built by adding and revising the list of genre elements as they were encountered in the sample. New content, form or functionality was added in the iterative process. In order to use the positioning concept on the front pages, a grid divided into sections and columns was created.

In the second part of the genre analysis every content item was identified on all Swedish online newspapers. Further each form that was used to present the content item on the front page and any functionality included in the content was registered. For each online newspaper the total number of columns and sections were registered as well as the position of every content item according to the coordinate given by the grid. All this data was stored in a database according to the relationships in figure 6.

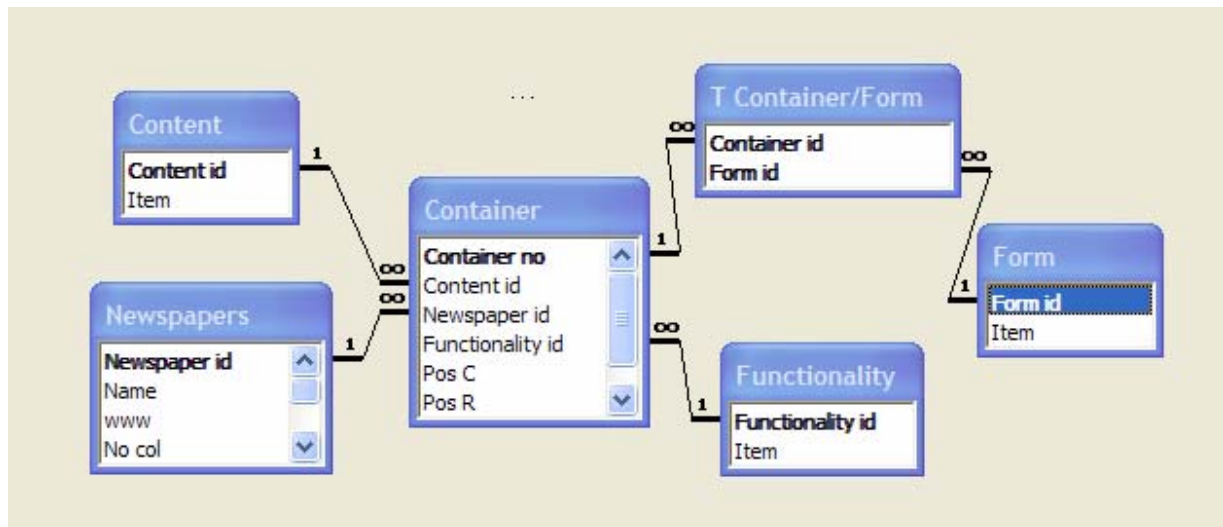


Figure 6. The relationships in the database

The second part of the study was initiated by formulating a template for writing design patterns for online newspaper front pages. The template draws on the structure from design patterns by van Weile (2000) and Tidwell (2003) using the structure of; *Pattern name*, *Design problem*, *Solution*, *Example*, *Use why?* and *Related patterns*. The template for writing design patterns was based on the chosen structure from design patterns and genre categorization. The concepts were integrated according to table 4 on the next page.

Table 4. Basis for an integrated template

Design Pattern structure	Connection to genre concepts and design pattern concept
Pattern name	Content
Design problem	The problem concerning handling the content
Solution	Placement and choice of form and functionality
Example	Pictures with “look-and-feel” examples
Use why?	Motivation to why it works
Related patterns	Names of related patterns

The concepts were handled according to the following principles. The *Pattern name* was the same as the content name. The *Design problem* was described as the problem as to choosing forms, function and position for the content. The *Solution* was the choices made and implemented. *Examples* were chosen amongst the most common solutions and the notion of “a quality without a name”, i.e the author studied the contents in the sample and chose an example of solution with the best “look-and-feel”. The question of *Use why?* was used for a description of why the solution works, and is intended to be of guidance in judging the applicability in the specific design situation. This process was performed for a number of the content items from the genre analysis. These contents were chosen amongst the most commonly used items and the most typical for online newspapers.

3.4 Comments to chosen approach

As mentioned, reliability can be referred to as *trustworthiness* in qualitative studies. In the study presented here the trustworthiness is connected to the fact that the results of different content, form, functionality and positioning is easily comparable between the newspapers in a so called split half test, since its been identified for all online newspapers in the sample (Patel & Tebelius, 1987). Internal reliability would be improved if two or more had conducted the genre analysis independently, and thereafter compared the results.

Concerning validity, or *reasonableness*, the face validity (Patton, 2002) was appreciated as high as the study generated the expected results. The content validity can be considered as high for the genre framework since the complete sample of online newspapers was used in the iterative process. The content validity would be improved if the iterative process of generating genre characteristics of content, form and functionality was repeated by another person.

The accuracy, or *conscientiousness*, of the study can naturally not be concerned with reactions within the area of focus since online newspapers are studied as a product on the internet. However, accuracy can be discussed in relation to the choice of the examples of design solutions with the “best look and feel”. The result is clearly not objective but this is not the intention according to the concept of design patterns.

4 Results

The results from the different parts of the study are presented in this section. The objective is to show how the design patterns have grown out of mapping Swedish online newspaper front pages resulting in (1) a basis for a common language suitable for actors involved in designing online newspapers, (2) a number of high level design patterns specific for front pages of online newspapers. First the result of the iterative process to form a framework for genre characteristics is presented and thereafter the results from the genre analysis of the Swedish online newspapers. Then the design pattern template resulting from integrating the concepts is shown. Finally a number of high level design patterns for online newspaper front pages are presented.

The iterative process of forming the framework for genre analysis, described in section 3, resulted in the items categorized as content, form or functionality, presented in table 5.

Table 5. Genre elements of the online newspapers

CONTENT	FORM	FUNCTIONALITY
Navigation	TOC	One-way interaction
Nameplate	Menu	Two-way interaction
Landmark	Bar	Personalization
Search item	Tab	Searching
Advertisement	Drop-down menu	Filtering
Classifieds	Links	Video
Video item	Logotype	Sound
Sound item	Photographs	Download
Webb TV	Images	e-mail
Webb radio	Icon	Broadcasting
News article	Section head	Log in
News stream	Body text	
Feature material	Caption	
News archive	Text box	
Hard composite	Radio buttons	
Soft composite	Banner	
Entertainment	Timestamp	
*Traditional services	Button	
*Added services	Headlines	
Issue	Date	
Contact	e-mail link	
Poll	Link list	
Forum for chat		
Letter to editor		
Membership		
Debate		

*Traditional services are elements that could be found in the printed edition as well, such as TV schedule, weather, exchange news etc. Examples of added services are job-, real estate- and travel services that include interactivity.

The intention of using the positioning concept of the content on the front pages resulted in the grid in table 6. The coordinates in the data collection on front pages was given by the sections and columns according to the grid.

Table 6. Division of front page in analysis

Columns/ Sections	1	2	3	4
A	Header of front page			
B	Top half of B-section on screen in 1280x1024 resolution (BT)			
	Bottom half of B-section on screen in 1280x1024 resolution (BB)			
C	Rest of front page			
D	Footer of front page			

Using the framework generated data about all content encountered in the sample. To give a structure the presented results the example of the content item Navigation is used. The entire collection of data is presented in Appendix 2. The results are presented according to the structure in table 7.

Table 7. Results of genre analysis for the content item Navigation

Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)		Containing the functionality of (in no. of the content and in percentage of total no. of content items)		Positioning (of no. of the content)	
Navigation 151 in 84 99 %	TOC (83)	55 %	None (148)	98 %	A1 (3)	BB-C3 (1)
	Images (4)	3 %	Personalization (1)	0,5 %	A2 (2)	B-C1 (1)
	Icon (3)	2 %	Two-way		A3 (3)	BT1 (48)
	Section head (43)	28 %	interaction (2)	1 %	A4 (2)	BT2 (3)
	Body text (3)	2 %			A1-2 (10)	BT3 (6)
	Banner (6)	4 %			A1-3 (12)	BT4 (1)
	Menu (31)	20 %			A1-4 (5)	BT3-4 (1)
	Linklist (8)	5 %			A2-3 (1)	BT-C1(1)
	Bar (38)	25 %			A-BT1 (3)	BT-C3(1)
	Tab (4)	3 %			A-C1 (1)	C1 (4)
	Drop-down				B1 (14)	C2 (4)
	menu (3)	2 %			B2-3 (1)	C3 (4)
	Link (11)	7 %			BB1 (8)	C2-3 (1)
	Photographs (2)	1 %			BB2 (3)	D1 (1)
				BB3 (4)	D3 (1)	
				BB4 (1)		

The table is built as follows. In the first column of the table, the total number on the first pages in the sample of every content is presented, in the case of Navigation that is 151. Further the number of newspapers and the percentage of newspapers containing the content is given which adds to 84, being 99%, for Navigation. In the second column the forms used in presenting each content are shown. A content can be given one or more forms. The content of Navigation can for example be presented as a TOC (table of content) with section heads. For every form used the total number and the percentage of the total number of content items is given. The third column shows what functionality that is identifiable on the front page in connection to the content. The number of functionality identified and the percentage in relation to the total number of content items are presented. The fourth and last column shows the number of content items in the different position coordinates given by table 6. This collected data resulted in a mapping of content, forms, functionality and positioning of front pages of Swedish online newspapers (see Appendix 2).

These data were input in using the integrated framework for structuring design patterns presented in section 3. Writing a template for the design patterns according to the intended integration of the concepts, resulted in the template in table 8:

Table 8. Design pattern template

Pattern name: <i>The content</i>		
Design problem	<i>Description of the constraints concerning choice of form, functionality and positioning</i>	
Solution	<i>Choice of form, functionality and positioning</i>	
Example	<i>Picture of best practice example1</i>	<i>Picture of best practice example2</i>
Use why?	<i>Explanation of why the solution work (intended to be of guidance in judging applicability in a specific design situation)</i>	
Related patterns	<i>Names of related patterns Names of patterns at higher or lower levels that are connected</i>	

The resulting template was used in writing a number of design patterns for online newspaper front pages. The design patterns are based on the data presented in Appendix 2. Here, the example of the design pattern for the content item Navigation is shown in table 9 on the next page.

Table 9. Design pattern for the content item Navigation

Pattern name: Navigation	
Design problem	This content is presented on all front pages. The core of the design problem is the vast amount of content presented on the front page. It is of importance for the user to get a good grip of how to navigate the newspaper while skimming the front page. Related content is to advantage placed in groups.
Solution	The most common ways of presenting navigation is TOC, sometimes grouped with section heads. This is most often placed in the left column. Another common solution is navigation presented as a bar along the total width of the front page. These two are in some cases used in combination. Menus are often presented below the main TOC.
Example	<p>The example shows a navigation menu for a newspaper website. On the left, a yellow sidebar lists various content categories: nyheter, sportbladet, nöje & puls, ekonomi & börs, kvinna, bil, bostad, föräldrar, hälsa, it & mobilt, kultur, mat & vin, resa, ridsport, spela, stockholm, tips & trav, tv, väder, webb-tv, and webb-radio. On the right, a blue navigation bar contains links: »ETTAN, »HP I DAG, »ARKIV, »TEMA, »BLANDAT, »ANNONSER, »HP - INFO, »WEBBTJÄNSTER, and »MEDLEM. Below this bar, the date Fredag 31 januari 2003 and a » Gäst link are visible. The main content area lists sections: » DAGENS HP (with sub-items: HALMSTAD, LAHOLM, HYLTE, SPORT, RESULTATHÖRNA, KULTUR/NÖJE, INRIKES, UTRIKES, SIDAN TVÅ, ANGELÄGET, REPORTAGE), » ANNONSER (with sub-items: ANNONSERA, FAMILJ, FYNDTORGET, MOTORMARKNAD, HYRESMARKNAD, BOSTADSRÄTTER, SÄLJES/KÖPES), and » WEBBTJÄNSTER (with sub-items: ZOONEN, MORNINGSTAR, RESEGUIDEN).</p>
Use why?	TOC and menus give the reader a good sense of what is available in the newspaper. It is easy to find and they can be the same every day even if other content apart from logotype change in every issue.
Related patterns	

The name of the design pattern is the same as the name of the content item. The core of the design problem is described to illustrate the constraints concerning the content. In the case of Navigation the core of the problem is presenting a lot of content in a clear way. The suggested solution is based on the data in Appendix 2. As TOCs are used for 55 % of the content items this is the most common form. Menus are used in 21% of the content items. Section heads are used in 28 % for presenting the content items in combination with TOC or menus. The positioning of the items is described from the data in the positioning column in Appendix 2. The solutions are described in short in the design pattern for Navigation. The choice of pictures of the solutions was done by finding the best “look and feel” examples in the sample. In the case of Navigation three pictures of solutions were chosen to illustrate best practice examples. The description of why the solution works is done from a reader perspective. For Navigation there was no related patterns identified.

The other design patterns are written according to the structure and principles described for writing the design pattern for Navigation. These design patterns are presented in Appendix 3. As the design patterns have been written for only on one level for the front pages, there are not any related design patterns identified on higher or lower levels in the sample.

In table 10, a summary of the results is presented in this section is given.

Table 10. Results of the study in summary

Study	Result
Iterative process of forming genre framework.	Framework for genre analysis based on concepts presented in table 5 and 6.
Genre analysis on Swedish online newspaper front pages.	The mapping of the Swedish online newspaper genre presented in Appendix 2.
Integrating genre concepts and design pattern concepts.	The design pattern template presented in table 8.
Use of design pattern template on the collected data and by studying “best look and feel” examples.	Design patterns for content items presented in table 9 and Appendix 3.

5 Analysis and Discussion

In this thesis the question of how design patterns can be used to improve the online newspaper design process has been focused. The challenge dealt with was the one of filling the gap of a missing common design language for actors involved in designing online newspapers. The approach set up was using the concepts of genre and design patterns in an integrated framework, as basis for writing design patterns. The objective of this discussion is to show how this has been accomplished by analysing and discussing the results and contributions. First the results are analyzed and discussed according to the structure in table 10. Thereafter a discussion in relation to earlier research is presented. Finally the thesis is concluded by a summary of contributions and suggested further work.

In the iterative process of building the *framework for genre analysis*, the conceptual structure of content, form and functionality from Shepherd and Watters (1999) was used. This structure for categorization was easy to apply on the sample. However, to be able to handle layout the concept of positioning from Swales (1990) had to be added to the triple. The items of content and form were easily identifiable on the front pages, but functionality was sometimes difficult to handle. There is probably more functionality further down in the navigational structure and thereby not identified in this study.

Understanding of the online news genre was derived from the process of *mapping the Swedish online newspaper genre*. The genre framework gave good input to structure the design pattern template and the data from the analysis gave very good input to write the design patterns. As suggested by Shepherd and Watters (1998) the analysis has been a useful tool in finding similarities, even though some newspapers are very different in visual appearance.

The design pattern template as a result of integrating the concepts of genre and design patterns, as suggested by Pemberton (2000), was proven successful in shaping a template for design patterns for online newspaper front pages. The concepts proved to accompany one another on a conceptual level. The integrated framework opens the possibility of design patterns accompanying genre change and evolution. The design patterns for online newspapers could be developed in collaboration between newspapers via the web as was Common Ground by Tidwell (1999). The design patterns can comply with a genre in hierarchy and normative scope as well as follow genre change and evolution. The template is intended to be used by actors in the design process, but in this study the design problems and the motivations as to why a solution works have not been formulated in collaboration with designers and readers.

In the process of writing *a number of design patterns* for front pages of online newspapers, the data collected in the genre analysis was very useful input together with the template. There were some problems concerning formulating the motivations to why the solutions would work since they are intended to be from a reader perspective. As design patterns are drawn from proven i.e. implemented solutions they can not be considered as normative. They are clear examples of good solutions, even if these are difficult to express or motivate in words. Alexander's idea about the "quest for the quality with out a name" (Alexander, 1979) was well suited in finding good examples of design solutions. It was easy to find the examples with the best "look-and-feel". To

express these qualities in words was, as stated by Mahemoff and Johnston (1998) difficult. The criterions that Tidwell (2003) suggests for a design pattern to be useful are well met by this basis for design patterns. They are clear and show concrete solutions. They are written for content items encountered in the genre analysis of the online newspaper front pages, which means that they will be encountered in designing online newspapers. For each solution there are two or more examples in pictures derived from a) the most used solution and b) the solutions that “look-and-feel” the best. The template suggest answer to the question Use why? as an explanation to why a pattern would work. This gives the designer support in deciding the relevance in the current design situation. These design patterns cover all the possible content, form and functionality used in current design of Swedish online newspapers. Finally, any identifiable relation to other patterns is clearly shown for each pattern.

In relation to the descriptions of the online newspaper genre in previous research, the mapping in this thesis is more extended and focused on design characteristics. The taxonomy by Shepherd and Watters (1998) is concerned with the evolution of cyber genre where the online newspaper genre is one example. However, the findings are not empirically tested. The mapping of genre characteristics for online newspapers by Eriksen and Ihlström (2000) is focusing on the function or purpose of the content items. Their findings are based on three different online newspapers at two different points in time. In this study a mapping of all Swedish online news papers has been done.

In relation to the design patterns presented for online newspapers, this framework provides a more specific and focused approach. As discussed by van Weile et al (2000), Tidwell (2003) and Griffiths and Pemberton (2003) general guidelines, principles and style guides for web design are difficult to apply in designing for a specific context. This can also be the case for general design patterns written for web design, such as Tidwell’s Common Ground. They are on a higher level and can thereby be applied in designing for example online newspapers, but they do not support solutions for design problems specific for a genre such as online newspapers. The design patterns that are written specifically for online news by van Duyne et al (2003) and the Interaction Design Patterns by van Weile are limited in scope and thereby not concrete enough on an item level. As they both are written as one design pattern they are not very supportive for designers of online newspapers. Using them would mean using the one and only design pattern for every encountered recurrent design problem.

There are some limitations to this study. One is that it has been performed by the author without contact with designers and readers or other actors involved in designing online newspapers. But the aim has not been to write a complete pattern language but to construct basis for a common design language and exemplifying how this can be done. This can thereby be considered as a starting point from which a collection of design patterns could be developed in collaboration with the actors involved in real life design situations. Another possible limitation is that online newspapers are fairly young and that the analysis therefore results in few universal solutions. The suggested solutions have not been tested with readers and are thereby not validated in terms of usability.

The research question put forth in this thesis was: How can design patterns be used to improve the online newspaper design process? The theoretical contributions are:

- a framework for understanding design characteristics of a specific digital genre, usable for generating design patterns,
- a mapping of the design characteristics of the Swedish online newspapers.

The objective in addressing this question was to provide: (1) a basis for a common design language suitable for actors involved in designing online newspapers, (2) a number of high level design patterns specific for front pages of online newspapers. The contributions usable in design practice of online newspapers are:

- a basis for a common design language, expressed in a template for design patterns based on genre characteristics for the online newspaper genre,
- a number of high level design patterns written specifically for front pages of online newspapers.

In future work these contributions can be developed in collaboration with the actors involved in the design of online newspapers. It would be interesting to expand the scope of the design patterns to include the concept of purpose and to include reader recognition and response. Further the approach described would be interesting to test on other digital genres and media.

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Appendix 1. The Online Newspapers

NR	NEWSPAPER	WWW	NR	NEWSPAPER	WWW	NR	NEWSPAPER	WWW
1	8 SIDOR	8sidor.se	30	Hallands Nyheter	hn.se	59	Skaraborgsbygden	skaraborgsbygden.se
2	Aftonbladet	aftonbladet.se	31	Hallandsposten	hallandsposten.se	60	Smålandsposten	smp.se
3	Arbetsbladet	arbetsbladet.se	32	Helsingborgs Dagblad	hd.se	61	Sundsvalls Tidning	st.nu
4	Arboga Tidning	arbogatidning.com	33	Hudiksvalls Tidning	ht.se	62	Svenska Dagbladet	svd.se
5	Avesta Tidning	avestatidning.com	34	Hälsinge-Kuriren	halsingekuriren.se	63	Sydsvenska Dagbladet	sydsvenskan.se
6	Barometern	barometern.se	35	Katrineholms-Kuriren	kkuriren.se	64	Sydöstran	sydostran.se
7	Bergslagsposten	bergslagsposten.se	36	Kristianstadsbladet	kristianstadsbladet.se	65	Södermanlands Nyheter	sn.se
8	Blekinge Läns Tidning	blt.se	37	Kungälv-Posten	kungalvs-posten.com	66	Tempus	tempus.se
9	Bohuslänningen	bohuslaningen.se	38	Laholms Tidning	laholms-tidning.se	67	Tidningen Ängermanland	tidningen.to
10	Borlänge Tidning	borlangetidning.com	39	Lidingö Tidning	lt.nu	68	Trelleborgs Allehanda	trelleborgsallehanda.se
11	Borås Tidning	bt.se	40	Ljusdals-Posten	ljp.se	69	Trollhättans Tidning	lt.2stad.se
12	Bäragsbladet	bargslagsbladet.com	41	Läns-Posten	lans-posten.nu	70	Ulricehamns Tidning	ut.se
13	Dagbladet Nya Samhället	dagbladet.nu	42	Länstidningen Södertälje	lt.se	71	Upplands Nyheter	tidningshuset.com/un
14	Dagens Industri	di.se	43	Länstidningen Östersund	ltz.se	72	Uppsala Nya Tidning	unt.se
15	Dagens Nyheter	dn.se	44	Mora Tidning	moratidning.com	73	Vestmanlands Läns Tidning	vlt.se
16	Dalabygden	tidningshuset.com/db	45	Motala Tidning	motalatidning.se	74	Vimmerby Tidning	vimmerbytidning.com
17	Dala-Demokraten	dalademokraten.com	46	Nerikes Allehanda	nerikes.se	75	Värmlands Folkblad	vfb.se
18	Eskilstuna-Kuriren	ekuriren.se	47	Norra skåne	nsk.se	76	Västerbottens Folkblad	nyavf.se
19	Expressen	expressen.se	48	Norra Västerbotten	norran.se	77	Västerbottens-Kuriren	vk.se
20	Fagersta-Posten	fagerstaposten.com	49	Norrbottens-Kuriren	kuriren.nu	78	Västerviks-Tidningen	vt.se
21	Falu-Kuriren	falukuriren.se	50	Norrköpings Tidningar	nt.se	79	Västmanlands Nyheter	vastmanlandsnyheter.nu
22	Folkbladet	folkbladet.se	51	Norrländska Socialdemokraten	nsd.se	80	Ystads Allehanda	ystadsallehanda.se
23	Folket	folket.se	52	Norrtejlje Tidning	norrtejljetidning.se	81	Ölandsbladet	olandsbladet.se
24	Gefle Dagblad	gd.se	53	Nya Dagen	dagen.com	82	Örebro-Kuriren	orebro-kuriren.se
25	Gotlands Allehanda	ga.helagotland.com	54	Nya Ludvika Tidning	nyalt.se	83	Örnsköldsviks Allehanda	allehanda.se
26	Gotlands Tidningar	gt.helagotland.com	55	Nyheterna	ostrasmaland.se	84	Östersunds-Posten	op.se
27	GT	gt.se	56	Nynäshamns-Posten	nhp.se	85	Östgöta Correspondenten	corren.se
28	Gästriklands Tidning	tidningshuset.com/gt	57	Piteå-Tidningen	pitea-tidningen.se			
29	Göteborgs-Posten	gp.se	58	Sala Allehanda	salaallehanda.com			

Appendix 2. Results from Genre Analysis

1(5)

Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)		Containing the functionality of (in no. of the content and in percentage of total no. of content items)		Positioning (of no. of the content)	
Navigation 151 in 84 99 %	TOC (83)	55 %	None (148)	98 %	A1 (3)	BB-C3 (1)
	Images (4)	3 %	Personalization (1)	0,5 %	A2 (2)	B-C1 (1)
	Icon (3)	2 %	Two-way		A3 (3)	BT1 (48)
	Section head (43)	28 %	interaction (2)	1 %	A4 (2)	BT2 (3)
	Body text (3)	2 %			A1-2 (10)	BT3 (6)
	Banner (6)	4 %			A1-3 (12)	BT4 (1)
	Menu (31)	20 %			A1-4 (5)	BT3-4 (1)
	Linklist (8)	5 %			A2-3 (1)	BT-C1(1)
	Bar (38)	25 %			A-BT1 (3)	BT-C3(1)
	Tab (4)	3 %			A-C1 (1)	C1 (4)
	Drop-down				B1 (14)	C2 (4)
	menu (3)	2 %			B2-3 (1)	C3 (4)
	Link (11)	7 %			BB1 (8)	C2-3 (1)
	Photographs (2)	1 %			BB2 (3)	D1 (1)
					BB3 (4)	D3 (1)
					BB4 (1)	
Nameplate 94 in 85 100 %	Logotype (94)	100%	None (94)	100%	A1 (33)	A1-3 (9)
					A2 (19)	A2-3 (8)
					A3 (1)	A1-4 (1)
					A1-2 (22)	BT1 (1)
Search item 49 in 38 45 %	Images (2)	4 %	None (1)	2 %	A1 (1)	C3 (1)
	Icon (3)	6 %	Searching (47)	96 %	A3 (6)	BT1 (12)
	Section head (5)	10 %	Two-way		A4 (2)	BT3 (3)
	Body text (4)	8 %	Interaction (1)	2 %	A2-3 (1)	BT4 (4)
	Text box (22)	44 %			B3 (1)	BB1 (9)
	Radio buttons (1)	2 %			B4 (1)	BB3 (5)
	Banner (7)	14 %			C1 (2)	BB1-2 (1)
	Button (19)	39 %				
	Drop-down					
	menu (3)	6 %				
	Link (23)	47 %				
	Logotype (1)	2 %				
Advertisement 205 in 81 95 %	Images (1)	0,5 %	None (203)	99 %	A1 (7)	BT3 (11)
	Section head (1)	0,5 %	Searching (2)	1 %	A2 (9)	BT4 (19)
	Body text (1)	0,5 %			A3 (6)	BT5 (1)
	Banner (201)	98 %			A4 (6)	BT2-3 (3)
	Button (2)	1 %			A1-2 (6)	BT-C3 (1)
	Link (1)	0,5 %			A1-3 (8)	BT-C2 (2)
	Logotype (2)	1 %			A1-4 (8)	BT-C4 (2)
					A2-3 (15)	BB1 (6)
					A2-4 (4)	BB2 (11)
					A2-5 (1)	BB3 (13)
					A3-4 (2)	BB4 (2)
					A-B4 (5)	B1 (2)
					A-B5 (1)	B3(4)
					A-B3-4 (1)	B4(12)
					A-BT3 (3)	C1 (3)
					A-BT4 (7)	C2 (4)
					A-BT5 (4)	C3 (3)
					A-C4 (3)	C1-2 (1)
					BT1 (2)	C1-3(1)
					BT2 (5)	

Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)		Containing the functionality of (in no. of the content and percentage of total no. of content items)		Positioning (of no. of the content)	
Classifieds 12 in 10 12 %	TOC (3) 25 % Images (1) 8 % Section head (5) 42 % Body text (4) 33 % Banner (4) 33 % Button (1) 8 % Linklist (2) 17 % Link (2) 17 %	None (10) 84 % One-way interaction (1) 8 % Searching (1) 8 %	A1 (3) A4 (1) A1-4 (1) BB1 (2) BB4 (1) BT1 (1) BT4 (1)	C2 (1) C3 (1)		
Video item 4 in 4 5 %	Banner (1) 25 % Link (3) 75 %	Video (4) 100%	BB1 (1) BB3 (2) C3 (1)			
Sound item 8 in 6 7 %	Images (1) 13 % Icon (3) 38 % Section head (2) 25 % Body text (3) 38 % Button (1) 13 % Link (2) 25 %	Sound (8) 100%	A1 (1) B1 (1) C3 (2) BT2 (1) BB1 (2) BB3 (1)			
Webb TV 8 in 5 6 %	Images (1) 13 % Icon (2) 25 % Section head (4) 50 % Body text (2) 25 % Headline (2) 25 % Linklist (1) 13 % Link (5) 63 % Photographs (1) 13 %	Broadcasting (8) 100%	B1 (1) BT1 (1) BT2 (2) BB2 (1) BB3 (1) C1 (1) C3 (1)			
Webb radio 1 in 1 1 %	Banner (1) 100%	Broadcasting (1) 100%	BB3 (1)			
News article 66 in 44 52 %	Images (1) 2 % Icon (1) 2 % Section head (4) 6 % Body text (66) 100 % Caption (8) 12 % Timestamp (6) 9 % Headline (65) 98 % Date (7) 11 % Link (50) 76 % Photographs (34) 52 %	None (66) 100%	B2 (5) B3 (1) C2 (6) BT1 (2) BT2 (36) BT3 (2)	BT1-2 (2) BT2-3 (1) BB1 (1) BB2 (8) B-C3 (2)		
News stream 50 in 41 48 %	Section head (30) 60 % Body text (6) 12 % Timestamp (49) 98 % Headline (45) 90 % Date (1) 2 % Linklist (4) 8 % Link (3) 6 % Photographs (1) 2 %	None (50) 100%	B1 (4) B2 (8) B3 (10) BT2 (2) BT3 (4) BB1 (1) BB2 (2) BB3 (1) C1 (2) C2 (5) C3 (1)	B-C2 (4) B-C3 (6)		



Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)		Containing the functionality of (in no. of the content and percentage of total no. of content items)		Positioning (of no. of the content)	
Feature material 42 in 35 41 %	TOC (1)	2 %	None (38)	90 %	A2 (1)	BT1 (2)
	Images (5)	12 %	e-mail (1)	2 %	A3 (2)	BT3 (8)
	Icon (1)	2 %	Searching (1)	2 %	A4 (1)	BT4 (2)
	Section head (21)	50 %	Sound (1)	2 %	B2 (1)	BB1 (2)
	Body text (14)	33 %	Two-way interaction (1)	2%	B3 (1)	BB2 (5)
	Text box (1)	2 %			C1 (2)	BB3 (5)
	Radio buttons (1)	2 %			C2 (5)	BT-C3 (1)
	Banner (12)	29 %			C3 (4)	
	Timestamp (1)	2 %				
	Headline (6)	14 %				
	Button (1)	2 %				
	Date (2)	5%				
	Linklist (4)	10 %				
	Drop-down menu (1)	2 %				
	Link (17)	40 %				
	Photographs (12)	29 %				
News archive 30 in 27 32 %	TOC (2)	7 %	None (3)	10 %	A2 (3)	
	Section head (6)	20 %	Searching (27)	90 %	A3 (2)	
	Body text (2)	7 %			A4 (1)	
	Text box (10)	33 %			B1 (3)	
	Radio buttons (1)	3 %			B3 (1)	
	Button (8)	27 %			C2 (1)	
	Linklist (3)	10 %			BT1 (8)	
	Drop-down menu (2)	7 %			BT3 (3)	
	Link (17)	57 %			BB1 (7)	
					BB3 (1)	
Hard composite 57 in 41 48 %	Images (1)	2 %	None (57)	100%	B2 (1)	BB2 (10)
	Section head (35)	61 %			B3 (5)	BB3 (3)
	Body text (5)	9 %			C2 (10)	BB-C1 (1)
	Timestamp (2)	4 %			C3 (4)	BT-C1 (1)
	Headline (31)	53 %			BT1 (4)	BT-C2 (4)
	Date (2)	4 %			BT2 (8)	BT-C3 (2)
	Linklist (21)	37 %			BT3 (2)	
	Link (13)	23 %			BB1 (1)	
	Photographs (4)	7 %			BB1-2 (1)	
Soft composite 69 in 59 69 %	Images (3)	4 %	None (69)	100%	A-BT2 (1)	BT-C2 (9)
	Section head (21)	30 %			B1 (1)	BT-C3 (2)
	Body text (69)	100%			B1-2 (1)	BT-C5 (1)
	Caption (6)	9 %			B2 (6)	C2 (10)
	Timestamp (6)	9 %			BB2 (6)	
	Headline (66)	96 %			BB-C2 (6)	
	Date (2)	3 %			B-C2 (1)	
	Linklist (1)	1 %			BT1 (2)	
	Link (56)	81 %			BT2 (21)	
	Photographs (39)	56 %			BT-C1 (2)	

Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)		Containing the functionality of (in no. of the content and percentage of total no. of content items)		Positioning (of no. of the content)	
Entertainment 15 in 11 13 %	Images (1) 7 % Section head (3) 20 % Body text (4) 27 % Banner (9) 60 % Headline (1) 7 % Linklist (1) 7 % Link (2) 13 %	None (8) 53 % One-way interaction (3) 20 % Two-way Interaction (4) 27 %	A1 (1) B3 (1) C1 (3) C3 (1) BT1 (1) BT3 (1)	BT4 (1) BB1 (1) BB3 (4) BB4 (1)		
Traditional services 74 in 52 61 %	TOC (4) 5 % Images (4) 5 % Icon (6) 8 % Section head (10) 14 % Body text (3) 4 % Banner (47) 64 % Timestamp (1) 1 % Menu (1) 1 % Linklist (3) 4 % Drop-down menu (1) 1 % Link (19) 26 %	None (72) 97 % Searching (1) 1 % Two-way Interaction (1) 1 %	A1 (3) A2 (2) A2-3 (1) A3 (15) A4 (4) B1 (1) B3 (1) BT1 (4) BT3 (14) BT4 (2)	BT4 (2) BB1 (11) BB3 (8) BB4 (2) C1 (2) C2 (2) C3 (2)		
Added services 80 in 46 54 %	TOC (3) 4 % Images (5) 6 % Section head (15) 19 % Body text (11) 14 % Banner (40) 50 % Button (3) 4 % Date (1) 1 % Linklist (9) 11 % Drop-down menu (1) 1 % Link (27) 34 % Logotype (1) 1 % Photograph (1) 1 %	None (14) 18 % Broadcasting (3) 4 % Download (1) 1 % e-mail (1) 1 % One-way interaction (13) 16 % Personalization (1) 1 % Searching (32) 40 % Sound (2) 2 % Two-way interaction (13) 16 %	A1 (3) A1-2 (1) A1-3 (1) A1-4 (1) A2 (1) A2-3 (3) A2-4 (1) A3 (1) A4 (2) B1 (2) B4 (1)	BT1 (7) BT2 (1) BT3 (8) BT4 (5) BB1 (10) BB2 (1) BB3 (5) BB4 (8) C1 (3) C2 (6) C3 (9)		
Issue 78 in 78 92 %	Body text (3) 4 % Banner (1) 1 % Timestamp (1) 1 % Date (78) 100%	None (78) 100%	A1 (20) A1-2 (2) A2 (33) A2-3 (1) A3 (14)	A4 (1) BT1 (2) BT2 (2) BT3 (2) BT4 (1)		
Contact 72 in 51 60 %	TOC (2) 3 % Icon (2) 3 % Section head (9) 13 % Body text (61) 85 % Banner (1) 1 % Menu (1) 1 % e-mail link (22) 30 % Linklist (1) 1 % Link (13) 18 % Logotype (1) 1 %	None (39) 54 % e-mail (31) 43 % Two-way interaction (2) 3 %	A1 (6) A1-2 (1) A2 (10) A2-3 (4) A2-4 (1) A3 (4) A4 (2) B1 (2) BT1 (4) BT2 (1) BT3(1) BB1 (7)	BB2 (4) BB2-3 (1) C1 (4) C1-3 (4) C1-4 (1) C2 (3) C2-3 (2) C3 (2) D1 (2) D1-3 (1) D2 (4) D3 (1)		

Content (no. of items in sample and used in no. of online newspapers)	Given the forms of (in no. of the content and in percentage of total no. of content items)	Containing the functionality of (in no. of the content and percentage of total no. of content items)	Positioning (of no. of the content)
Poll 38 in 36 42 %	Section head (23) 60 % Body text (25) 66 % Radio buttons (22) 58 % Banner (7) 18 % Button (22) 58 % Linklist (2) 5 % Link (19) 50 %	None (1) 3 % One-way interaction (29) 76 % Two-way interaction (8) 21 %	A2 (1) BB2 (5) B3 (2) BB3 (6) BT1 (3) BB4 (1) BT2 (3) C1 (2) BT3 (8) C2 (2) BT4 (2) C3 (2) BB1 (1)
Forum for chat 12 in 12 14 %	Body text (1) 8 % Link (12) 100%	Two-way Interaction (12) 100%	A3 (1) BB1 (4) B1 (1) C1 (2) BT1 (2) C3 (1) BT2 (1)
Letter to editor 29 in 26 31 %	Images (2) 7 % Icon (1) 3 % Section head (4) 14 % Body text (4) 14 % Banner (3) 10 % Linklist (1) 3 % Link (22) 76 % Photographs (1) 3 %	None (1) 3 % e-mail (2) 7 % One-way Interaction (23) 79 % Two-way Interaction (3) 10 %	A2 (1) BT3 (1) A3 (1) BB1 (5) A3-4 (1) BB2 (3) A 4 (2) BB3 (1) B1 (2) BB4 (1) B2 (1) C1 (2) B3 (2) C3 (1) BT1 (5)
Membership 11 in 10 12 %	Section head (3) 27 % Body text (2) 18 % Text box (2) 18 % Banner (2) 18 % Button (3) 27 % Linklist (2) 18 % Link (6) 54 % Photographs (1) 9 %	Log in (5) 45 % One-way Interaction (1) 9 % Two-way Interaction (5) 45 %	A1 (1) A3 (2) BT1 (3) BT3 (2) BB1 (1) C3 (2)
Debate 16 in 16 19 %	TOC (2) 12 % Section head (4) 25 % Body text (5) 31 % Banner (2) 12 % Headline (1) 6 % Linklist (1) 6 % Link (10) 62 %	One-way Interaction (7) 44 % Two-way Interaction (9) 56 %	BT1 (4) C1 (1) BT3 (1) C2 (2) BB1 (3) C3 (1) BB2 (2) BB3 (2)

Appendix 3. Examples of Design Patterns for Online Newspaper Front Pages

Pattern name: Nameplate	
Design problem	To be recognized as an online newspaper the name plate and it's placement is essential. It is important that the reader clearly identifies the trademark of newspaper if readers are to relate to the qualities of the printed copy. It is also important to give readers a feeling of familiarity to attract readers to return every day.
Solution	Use the same logotype as in the printed edition, and place it in the centre middle. It is very common that adverts are placed above and also to one or both sides of the nameplate. It is also good if the issue is presented close to the nameplate.
Example	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <p>DAGENS NYHETER.</p> <p>Fredag 31 januari 2003</p> </div> <div style="text-align: center;"> <p><small>Annons:</small></p>  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">ANNONSER</div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="text-align: center; margin-top: 20px;"> <h1>Västerbottens-Kuriren</h1> </div>
Use why?	The reader gets a fast recognition of the newspaper.
Related patterns	Advertisement Issue

Pattern name: Advertisement	
Design problem	As the revenue from advertisers is the only source of income for the online newspaper genre this is one of the most important decisions. The adverts should be easily identifiable and attract attention. Reader expects to be able to click on adverts to get more information or to be linked to the advertiser.
Solution	Place ads in places that draw attention. For example on either side of the name plate and above. Many newspapers use the fourth and fifth columns for ads. Almost all ads are in the A and B section. The most used form is clickable banner and they are often moving and colourful. Some adverts are offering for example searching service.
Example	 
Use why?	In online newspapers it is important to present advertisement on the front page as this is the page readers scroll through to get a sense of the content.
Related patterns	Nameplate

Pattern name: Issue

Design problem

As the online newspaper, like it's printed counterpart, is published daily it is essential to show the date to the daily issue. Issue is one item that helps readers recognize a newspaper.

Solution

Date is placed under or to either side of the nameplate. In some cases it is possible to go back to an entire issue.

Example



Use why?

To show date is an important part of communication actuality.

Related patterns

Name plate

Pattern name: News stream	
Design problem	To present latest news in a way that the reader can see when it was published, the information of time is important. The reader should get a fast notion of the content and a link to more extended text.
Solution	Present headlines, and sometimes a short text, with a timestamp. The headline is clickable or there is a link at the end. Sometimes section heads are used to group the news. News streams are often placed in the B section and in second or third column.
Example	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Senaste Nytt</p> <hr/> <p>10:50 [Ekonomi] Läs mer Nedåt på Stockholmsbörsen Kurserna på Stockholmsbörsen föll i den inledande handeln på fredagen. Efter en ...</p> <hr/> <p>10:40 [Utrikes] Läs mer Ryskt fraktplan störtade i Östtimor Fem personer har hittats döda sedan ett ryskt fraktplan störtat i Östtimor på fr...</p> <hr/> <p>10:00 [Ekonomi] Läs mer Daydream tar in nya miljoner Styrelsen för dataspelsföretaget Daydream föreslår en riktad nyemission om 4,1 m...</p> </div> <div style="width: 48%;"> <p style="text-align: center;">SENASTE NYTT</p> <p>LOKALT</p> <ul style="list-style-type: none"> ▸ Forsberg målskytt för Colorado (11:03) <p>IN- och UTRIKES...</p> <ul style="list-style-type: none"> ▸ Pakistanier greps för terrorplaner (11:28) ▸ Ryskt fraktplan störtade i Östtimor (10:42) ▸ Nio döda i australisk tågkrasch (09:48) ▸ Sexton afghaner dödade i explosion (09:20) <p>EKONOMI...</p> <ul style="list-style-type: none"> ▸ Dyrt stopp i Barsebäck (11:20) ▸ Nedåt på Stockholmsbörsen (10:54) ▸ Daydream tar in nya miljoner (10:02) ▸ Observer sparar trots fortsatt vinst (09:56) </div> </div>
Use why?	News stream gives user the possibility of skimming many news and a clear indication of the time when it was published.
Related patterns	

Pattern name: Poll	
Design problem	It is common that the online newspaper is used for polls that are published online and sometimes in the printed edition. It should be inviting readers to answer the question and it should be possible to read the result.
Solution	Polls are often yes or no questions, and radio buttons or buttons are common forms. There is usually a link to results. Sometimes it is not possible to see the result without answering the question. In some cases polls are presented in banners.
Example	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Webbfrågan</p> <p>Nu är det ett år sedan Astrid Lindgren gick bort. När läste du något av henne senast?</p> <ul style="list-style-type: none"> <input type="radio"/> Alldeles nyss <input type="radio"/> Några månader sedan <input type="radio"/> Mellan 1 och 5 år sedan <input type="radio"/> Mer än 5 år sedan <input type="radio"/> Har aldrig läst något <input type="radio"/> Inget av dessa alternativ <p>Rösta</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Resultat <input checked="" type="radio"/> Webbfrågor </div> <div style="width: 45%; border: 1px solid red; padding: 5px;"> <p>DAGENS FRÅGA</p> <p>Är du nöjd med sjukvården?</p> <ul style="list-style-type: none"> <input type="radio"/> Ja <input type="radio"/> Nej <input type="radio"/> Är aldrig sjuk <p>Rösta</p> <p><u>Se resultat</u></p> </div> </div>
Use why?	Show alternatives in radio buttons when only one can be chosen as this is expected from interaction experience.
Related patterns	