

PSM and Media Personalisation – a Conflict?

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Abstract: PSBs experience currently the challenge from personalised social webservices which let their users customise web pages. BBC's re-launched front page is one response to this, this paper examines another widget-based project, namely the Danish PSB 'DR's 'MitDR' [MyDR]. Through in-depth research interviews during the design process of 'MitDR', tensions between the concept of PSB and the concept of personalisation are identified. The findings from the 'MitDR' project are analysed as a balance between getting attention and insisting on intention with Herbert Simon's concept of attention economy, and with a proposed concept of 'narrative economy'. Furthermore it is discussed whether PSBs have customers and whether the management method of Customer Relation Management is relevant in relation to PSB.

Attention Economy, PSB & Personalisation

PSBs in North Europe are today facing media personalisation services in many forms, from personal video recorders to web-based personal layout-, filtering- and recommendation systems. The marketing discourse behind these systems is to give the user more freedom choosing what to view and when to view by relocating the power to select from editors to users. But is the concept of media personalisation a genuine relocation of editorial power? Does this concept actually make sense in relation to Public Service Media, the remit of education and information taken in consideration? With a web-based personalisation project at the Danish PSB 'DR' as case, we will in this paper look at the tensions between the concept of media personalisation and public service media.

Historically, PSB grew up with a double remit: to facilitate the population with desired media content (music, news & current affairs, entertainment, information etc.) but also to try pushing certain content regarded important by the sender, but not necessarily by the receiver: to inform and educate the population. The mixed programming strategy faced however problems as competition for the users' attention grew along with the European liberalisation of radio- and TV services in the 1980'ies, and recently through the breakthrough of broadband internet services; the power balance in the attention economy seems to have shifted from senders to receivers.

The concept 'attention economy', originally introduced by Herbert Simon (1971), describes human attention as a resource steered by the market laws of supply and demand: *"...in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it"* (Simon, 1971:40-41). Although Simon originally developed the concept to describe the information overload in US governmental decision-making processes, it has shown relevant also to describe the power relationship between media content providers and users. E.g. writes Alan Mitchell in 'Marketing Week': *"[N]ext time you come across that salacious headline or sensational stunt, ask yourself this: am I being entertained or informed? Or is my attention - my life - being consumed? (...) Could we, a few years from now, see the likes of Hollywood, News Corporation, Time Warner and Yahoo! branded as polluters and resource-consumers as damaging as today's extractive industries, energy producers and car companies? Of course we want what they make. But we don't want the collateral waste and damage. Human attention is an extremely precious, non-renewable resource. Stop treating it as though it were infinite and free."* (Mitchell, 2005:30). Seen in this way, human attention is a commodity that can be abused if the individual is not facilitated to guard her own attention. Personalised recommender-

or filtering systems are thus often marketed as a tool for the individual to optimise her attention economy in the resource battle with content providers.

Are PSBs in any way to be excluded from the accusation of being ‘attention polluters’ like all other media content providers? Well, at least normatively PSBs serve a ‘higher’ purpose of educating people; triggering personal learning processes and casting a basis of shared values that benefits not only the individual but also the cohesion of society. The ‘abuse’ of attention could thus be justified by the social purpose, if one believes in the concept of a coherent society. But in their daily operations, PSBs are fighting on the attention economy market against other (commercial) providers of media products; they use partly the same quantitative means and measures as commercial providers, and must justify their existence towards both politicians and licence-fee payers.

What do the web-based personal filtering and recommendation services mean to PSBs and their remit? Should PSB apply media personalisation following the same principles as the commercial providers, and utilise the technologies in the same way, should they use the technologies in a modified way, or refrain from using the technologies at all? This normative question can be illuminated by looking at a case study of implementation of media personalisation in a PSB: the ‘MitDR’ [“MyDR”] project of the Danish PSB ‘DR’, which I have conducted as part of my PhD project “Personalisation as Challenge for PSB” 2007 – 2010. As sources for my study of the design- and decision making process of ‘MitDR’ since its beginning spring 2007, I have conducted a number of in-depth interviews with DR editors involved in the project, most predominantly the editor responsible for the project, namely Jens Poder¹.

The Case Study: MitDR

Background

The Danish PSB ‘DR’ has as along with radio and TV production, internet services as its contractual remit (DR og Kulturministeren, 2006). The internet services have become a success: The website dr.dk has the highest numbers of unique users in Denmark for a .dk domain², which means that DR has a good reach also on their internet services, important for the universalism of the service. DR experiences however that other .dk sites score higher in another important measure: the number of page views, a number that roughly indicates how much time a user spends on the site. Compared to other .dk edited media sites, dr.dk is e.g. overhauled by the broadcaster competitor ‘TV2’ and the ‘yellow press’ newspaper ‘Ekstrabladet’ (eb.dk); on an average month a dr.dk user has retrieved 53 pages, a tv2.dk user 97 page, an eb.dk user 81 pages³. Now one could argue that it is not PSB’s purpose always to strive for the highest numbers of viewers and users (c.f.: UNESCO, 2001), but if we look closer on the.dk internet consumption figures we see how the use patterns change from traditional publishing websites to community web services. A number of these new competitors have popped up, in the .dk context most remarkably the youth community ‘ARTO.dk’. Despite its considerably lower number of average unique users compared to dr.dk (464.561 vs. 1.868.253⁴), ARTO has a considerably higher number of page views pr. user: on average 1542 vs. dr.dk’s 53. It can be argued that it is not the task for a Public Service provider to compete with commercially driven web communities, but the difference in the number of average page views pr. unique user shows that web utilisation, particularly among young users, is increasing taking place on services that offer personalisation, social interaction and participation, and that dr.dk is not very strongly represented among these. If the tendency continues, it could be assumed that dr.dk in the future would loose its strong position in the Danish media landscape. I don’t include information on the use of international community services like e.g. Facebook in my analysis, but there are reasons to believe that these also play an important role in the Danes’ internet consumption.

¹ Since Jens Poder ceased to work for DR March 1st 2008, interviews have been conducted with the project leader Christian Valentiner.

² On average pr. month, May 2007 – March 2008, source: Foreningen af Danske Internet Media <http://www.fdim.dk/?pageid=84>, accessed 13-05-2008 (Foreningen af Danske Internet Medier, 2008)

³ ibid.

⁴ ibid.

The MitDR project

The 'MitDR' ["MyDR"] project aims at providing the users with a personalised version of dr.dk, a personal page customized by the user. Technically it is based on the interface concept of 'widgets'; boxes with content that to a certain extent can be customised by the users. The widget concept seems currently to dominate large parts of interface design thinking; a number of other examples can be mentioned: BBC's new front page⁵, commercial webservices / interfaces, e.g. 'Netvibes'⁶, 'iGoogle'⁷, Yahoo's Desktop widgets⁸ or Apple's Dashboard⁹ can be mentioned. It should also be noted that in the 'MitDR' project does not stand alone DR as web personalisation project; its technical infrastructure is also used for a re-launch of DR's youth community 'SKUM', which until the breakthrough of ARTO was the most popular site for young people in Denmark.

When a traditional publisher like DR implements a personalised service a question occurs: Should the service predominantly be a tool for the publisher or for the user? Is the service beneficial to optimise the attention economy of the user or the provider? By analysing statements from the research interviews we can highlight the dilemmas affiliated with PSB's adaptation of personalisation and in the second half of this paper put these into a larger perspective of attention economics.

MitDR as tool for DR

Seen as a tool for DR, the MitDR project serves several strategic purposes. First of all the intention is to 'engage' the users more in the content; meaning both increasing the page view number, but also enabling more interactivity among the users. Through the concept of personal pages, users should get inspired to see and use content they would not have noticed through current interface architecture of dr.dk. Strategically, the goal is to make dr.dk competitive in the new web market, dominated by social web services. Editor Jens Poder explains:

"For me, it's about making DR.dk more capable of surviving in a new internet market. DR.dk is a traditional site: once someone sat down and thought up a hierarchical Information Architecture of sections and sub-sections and sub-sub-sections. This makes it extremely difficult for the users to find the content. We have more to offer than most users' experience. It's a pity that we don't get the gorgeous content utilised optimally. We don't get it out to enough Danes. 'MitDR.dk' is in the first place about making that content available - when one user has found something it becomes visible for other users when published on his page. Normally we promote content by putting it on the dr.dk front page a couple of days - and then it sinks into oblivion. Maybe you spent two months of your life making a site and then it disappears after two days. On the front page it's a hard-nosed fight with all the other offers - it's like the neon signs on Time Square" (Research interview, Poder, 13-11-2007)

The problem could be described as a typical marketing problem; how to improve the cross-selling of products. The answer implicit in MitDR concept is to use viral marketing; let users recommend content to each other. The problem could also be described as interface architecture problem; how to expose the diversity of marginal products better? With its current length of more than 6800 pixels, the dr.dk front page¹⁰ requires an average user to scroll nine times before the whole page has been displayed. All DR content producers crave to be present on the front page, but one very visited front page appears not to be an efficient solution to the problem of showing the diversity of products offered by DR. Jens Poder formulates the problem differently, in terms of 'utilising the content optimally', but essentially the hope is that a non-hierarchical exposure of DR's content would help increasing the exposure, and thus strengthen DR in the attention economy.

⁵ www.bbc.co.uk accessed 28-08-2008

⁶ www.netvibes.com accessed 28-08-2008

⁷ www.google.com/ig accessed 28-08-2008

⁸ <http://widgets.yahoo.com/> accessed 28-08-2008

⁹ <http://www.apple.com/downloads/dashboard/> accessed 28-08-2008

¹⁰ www.dr.dk accessed 23-05-2008

Another strategic perspective of MitDR is to improve the generational transition from the youth community SKUM to DR's other offers:

When we first have some SKUM-users which have a MitDR.dk page, then when they get too old to remain SKUM-users then they will, with starting point of their personal page, move sideward's into a P3 community by adding new elements to the page. In this way you can with a single profile page, by exchanging the elements yourself, manage your development from being Oline-member to become P4-member. It's about making dr.dk more useful and engaging for people. And there we need a central tool to keep the relation we want to have to the users.¹¹ (Research interview, Poder, 03-05-2007)

Poder here talks about 'keeping the relation' with the users, a relation which is defined by DRs' intentions. The agenda-setting intentions of DR's traditional broadcast activities are thus not given up in the personalised onDemand service, but loyalty to DR's services must be achieved with other means than through the broadcasting schedule, particularly in relation to young users.

As an integrated part of the project, DR implements a 'Single-Sign-On' system, enabling the users to stay logged in regardless of which services they use at dr.dk. Currently, users have different logins for the different services, e.g. one for the debating forum, another for an online game etc. The Single-Sign-On system implies however also a possibility of monitoring the users' utilization of DR's content as very specific user profile information can be gathered by the system. The data mining analysis of user profiles can be applied to make individualised marketing on the site by contextualising the content cross-marketing more specifically to the user profile (Prætorius, 19-06-2008). The analysis could also be used to build a recommender service like Amazon's, an idea Poder however rejects, as he does not believe it will yield sufficient high quality in its recommendations DR's technological skills taken in consideration. Poder envisions however using the data in another way: by monitoring how quickly users who subscribe to a particular DR RSS-feed actually read the content, DR's journalistic production can be steered based on the actual demand:

The feed, that repeatedly scores very low in 'number of un-read articles' by those who subscribe to the feed, should pull itself together and get written some more stories. Things like this you can use in a DR context: You can start monitoring and say [to the journalists]: 'Hey listen, you produce too little material about science in relation to the need, because we can see that stories about science is just being torn down the shelves' (...) In stead of trying to guess what the users would like, producing it and putting it up on the shelf, then I don't start producing anything before I see the demand, but then I do it really quickly. If you can sense what is being demanded by the users, and what is there's too little of at the site, then you can start adjusting and say: 'this, they basically need more of'. (Research interview, Poder, 13-09-2007)

This is not meant to replace the traditional journalistic criteria, but to supplement it:

J: That is, you leave a bit the classic journalistic deed of 'I just think this story is very important'? JP: That kind of stories we should also produce, but sometimes the situation is just like some journalists sitting and thinking 'what should I write about today, because I need to deliver a story at 12 noon. You always decide editorially, and sometimes there is an important story, but on other days you're just looking for a story. Sometimes you just need to write a story, because how should you else be able to pay the rent? The question is whether it'll work. That'll be the challenge when we get MitDR, to get more data about this behaviour and let this data influence the product they get. You can do this with a system like MitDR, you can't do it with a CMS consisting of a lot of HTML pages loosely knitted together with a database. (Research interview, Poder, 13-11-2007)

¹¹ 'Oline' is the 3-6 year old children's channel (on DAB and net radio) including a website universe: http://217.116.240.211/index.php?_site=oline accessed 28-05-2008. P3 is a popular music channel (on FM, DAB and internet stream) for "modern young people and adults that appreciate to be challenged in musically and content wise" http://www.dr.dk/radio/alle_kanaler/p3.asp accessed 28-05-2008. P3 does not currently offer any community functions but has a dr.dk sub-domain.

Compared to the classic statistical calculation of the number of viewers and listeners, the analysis of DR's users could get a more precise tool. Optionally, users' consumption habits can be analyzed in great detail by the data mining of the DR user profiles. Poder's idea of demand-steered journalistic production is however not part of the MitDR project, but indicates his personal vision for the system.

MitDR as tool for the users

Personal widget-based services like Netvibes or iGoogle allows the user to collect and arrange RSS-feeds and other content from many different web-sources on one page. One can think of it as quick overview of many sources, a kind of 'control room' view. The ambition for MitDR has also been to provide this 'control room' overview, and even allowing content from foreign services on the site. The MitDR should thus not be reserved for DR content only; it should be a tool for the users.

Being a tool for the users is a central element in DR's promotion of the MitDR project. Editor in Chief Karen W. Hertz motives the personal value of the project in this way: *"It's about feeling at home at dr.dk, and to get more out of the many programmes and services we offer. With 'MitDR' the user gets a tailored profile that handles that we are all different and have different interests"* (Nyt fra DR, 02-07-2008). It is the personal attention economy that implicit is brought forward as argument; tailoring the experience of DR to the individual. In editor Jens Poder's view, being a tool for the user ultimately also means letting competitors like the other Danish broadcaster TV2 into the MitDR service. Users should ideally be free to choose what they want to see on their personal page, DR can hope becoming the start page and in this way expose some of its content.

"I don't care if somebody thinks it's cool to have the TV2 news feed on their 'MitDR.dk' page. I find it OK if they like to use 'MitDR.dk' as a start page." (Poder, 13-11-2007)

Poder envisioned also external content to be displayed at MitDR, e.g. a YouTube player or a Last.Fm player:

"It could be that we in DR at one time should have some talks about having a Last.fm player on dr.dk or not. Jannick: It would be a direct competitor to DR's internet radio? Jens Poder: Yes it would, but the whole point is that MitDR.dk should be a helping-hand experience so that users can access more dr.dk content; more good Danish internet content. If the users use MitDR.dk as helping tool to manage DR.dk's gigantic choice, if they in this helping tool would like to have the radio channels they listen to from other places, or news links to another content provider than DR, then I have difficulties seeing this as a problem." (Poder, 13-11-2007)

Looking at the brand integrity of DR it could look like a controversial matter to allow foreign content on the site, but Poder perceives this kind of controlling the experience as antiquated.

To me, branding is about controlling everything about my product. Controlling how you are perceived on the other side. Typically you say 'It destroy our brand'. The problem is however that with a media like the internet you cannot steer your brand like you do in a TV-schedule or printed advertisement. If he likes to do so a user will always be able to go directly from DR.dk to Last.fm without you being able to control it. We cannot control how this user interacts, we can't control whether this user says 'Ok, then I'll rather use iGoogle because there I'll be able to get my Last.fm player, I don't care about the DR.dk content - it's not important to me'. (Poder, 13-11-2007)

In the research interview Poder however acknowledges that not all DR employees look at the matter in the same way. The embedding of foreign content in MitDR was however given up later, not due to branding or strategic problems, but due to problems of intellectual property rights: DR did not want to be made responsible for the content in the foreign widgets, as would risk being 'the last window out' to the users. Another unsolved problem concerned DR's editorial responsibility. The current version of MitDR does not contain foreign content, except a prototype feed-reader¹².

¹² A beta version of the MitDR service can be seen at: <http://www.dr.dk/mitdr/beta/forside.aspx> (accessed 03/09/2008)

Allowing foreign widgets / foreign content on MitDR should be seen as an expression of the data portability which is a characteristic of web 2.0 services. Through these kind of services web 2.0 users utilises the content to present themselves to peers and public. The content has a double value: both as information but also as self-portraying:

"We think that in the future an essential user-need will be to have more utility value of what is collected. If I have contributed with some content at dr.dk, it becomes more useful for me if I'm allowed to show it at another site. E.g. if I every week have contributed to 'Boogie-listen' [DR's user steered music chart] I would like to display my great music taste on my MySpace site, my blog or somewhere else which gives meaning to me. Could also happen that if I've written some good contributions to a debate, I would like to it show somewhere else than dr.dk." (Poder, 03-05-2007)

The web ecology thinking goes thus in both directions: users should (if it had been legally possible) have been enabled to include foreign content on their MitDR page, and they should be enabled to take DR content with them into other sites. The PSB content serves two purposes: to inform and entertain the user, but also to present the user to other people.

Paradoxes of PSB Media Personalisation

We have now seen how the MitDR service is envisioned both as tool for the users and for DR. In some cases interests are overlapping, in other cases diverting. Some more fundamental tensions or paradoxes emerge however as a consequence of the concept of personalising PSB content. One tension emerges between DR as publisher who as a main activity pushes content, and 'consumer sovereignty' in the concept of personalisation. Another tension occurs between the concept of target groups and personalisation. A third tension is embedded in between the economy of scale in media production and the concept of customer.

Policies for Push / Obligatory Content

'MitDR.dk is in the first place about making the content we produce more available and engaging for the users. (Poder, 13-11-2007)

Poder stresses that the purpose of MitDR is to 'engage' users more in DR.dk's content. 'More engaging' can however be understood in two ways, quantitatively and qualitatively. Quantitatively it could mean to increase the page view number pr. visitor. Qualitatively it could be understood as transferring the emotional bonds that TV and radio have been capable of generating in broadcast to the internet. The desire of being more engaging is closely related to the question of how content is being recommended. The word 'recommended' is here understood in its broadest meaning, ranging from broadcasting scheduling policies and web site information architecture to the editorial composition of web content, radio- and TV programmes and the marketing being made for this content via Radio- and TV-spots, web spots etc. Traditionally, DR has as other mass-media pushed content to the users. The question emerging with a personalised serviced like MitDR is: should PSBs continue the previous 'push' of content or let the 'consumer sovereignty' rule? In its most concrete form the problem is expressed in the question of obligatory content on the personal page. In a less direct form, the problem is expressed in the question on pliability of the service (Löwgren, 2002; Löwgren and Stolterman, 2004): to which extent can the users shape the service, the interface and the filtering?

A central and reoccurring argument in the interviews with MitDR staff is that the traditional editorially steered dr.dk site co-exists with MitDR, and for that reason there is no need making certain content obligatory on MitDR. The interviewees see generally the idea of obligatory content as a violation of the basic personalisation idea. Instead, users' interests, wills and curiosities must rule:

"If you remove the user's own right to decide about what is on the personal page, then you in reality remove the functionality the user gets with the page. The more you take away of this control, the less useful it'll be seen from a user-perspective. (...) This concept is about giving the users a dr.dk page where they can collect the things from dr.dk they find most interesting. And

then we must hope that all that we produce at dr.dk in one or the other way have a raison d'être, and is relevant, and is useful and beneficial to the users." (Poder, 13-09-2007)

This 'consumer sovereignty' position combined with the competition puts the PSB in fragile position, being dependent on having strong marketing platform. Such strong platforms are today, according to DR Head of Marketing Thomas Hertz, the main TV channel DR1 which has 'a colossal value for the house', but also the front page of dr.dk (Hertz, 11-03-2008). An unanswered question is how marketing for PSB content should be made in a fully personalised scenario: should the broad marketing of the PSB's very diverse products be continued or should the marketing be personalised too? More generally the question can be posed: How intrusive may a PSB be on a personalised page, pushing content (marketing or journalistic content) that has not been chosen of the user?

A parallel example to MitDR is the new widget-based BBC front page launched in spring 2008. Here users can select which editorial areas they would like to get displayed and how many items should be displayed. Three areas of the page cannot however not be modified; the obligatory 'TOP NEWS STORY' widget, and two currently empty areas marked 'advertisement'. By having the TOP NEWS STORY placed in the top of the page, the BBC News department gets a prominent exposure and BBC brand identity gets connoted with news. How did the DR interviewees react on the BBC front page?

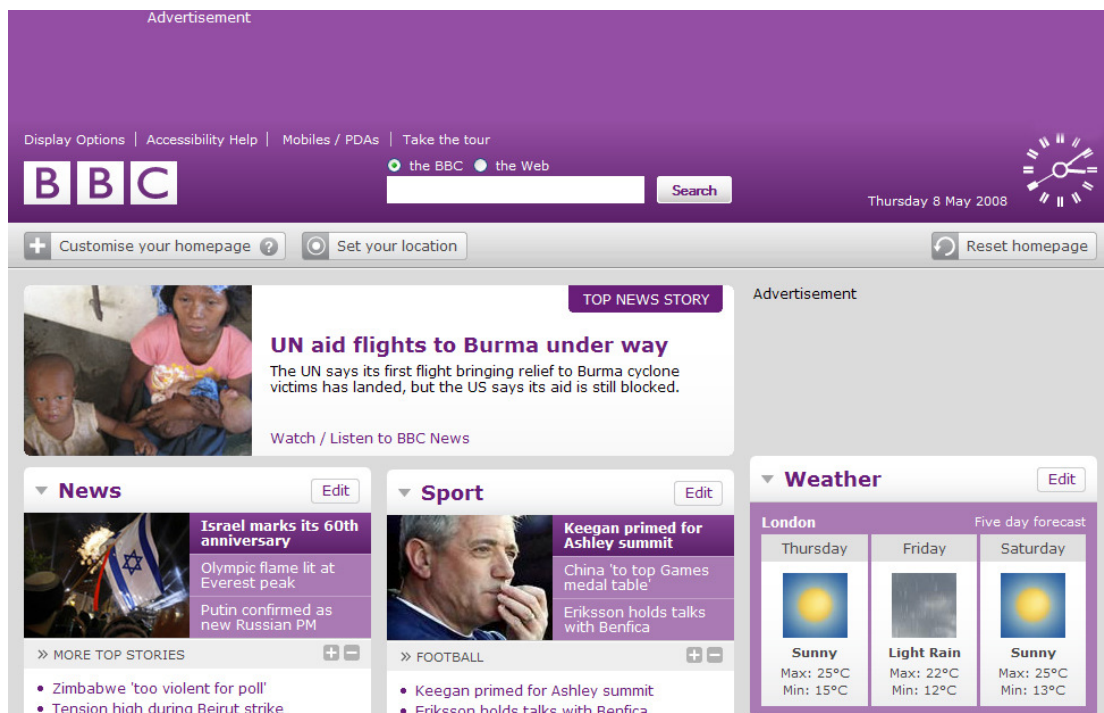


Figure 1: BBC widget-based front page, accessed May 8th 2008 at BBC.co.uk

Jens Poder's DR.dk editor colleague Niels Prætorius uses the obligatory widget at BBC as an example of how not to make personalisation:

I have problems imagining that we are going to force people having certain content at MitDR, which is exactly what BBC is forced to do on their front page, because it is the front page you're personalising. Then they demand that you get the top news story. J: So you're against obligatory widgets? NP: Yes! This I would be against, personally. If not, then I really need to see some other arguments, than those I can dimly see in the foggy future, as we haven't launched anything yet. (Research interview, Prætorius, 19-06-2008)

Prætorius' point is that the centrally edited version of dr.dk, including the front page, remains to exist as common point of reference when users start building their personal versions of dr.dk. The

question whether the personalised page should contain obligatory widgets constitutes an illustration of DR's agenda-setting relationship to the users.

The starting point in e.g. Poder's argumentation is that there should be no push of editorial content, but during the research interview Poder introduces the idea that new widgets or breaking news should be represented at the personalised page.

Could be that we would like a login-box where we can make alerts about new functionalities we've built to the users, like 'Did you know that you now can get your del.icio.us bookmarks on your dr.dk page? Such a functionality we would like to have in order being able to draw attention to... but something about Breaking News, or people should watch this one... well, maybe I could imagine that in same way as we on the front page have really current Breaking News displayed in 12 pixel box just under the top-bar which says 'Airplane Crashed in Vilnius', like shouting in a megaphone across the site, or have the 'ticker' on TV, I could imagine that you would allow such a simple thing on the site. But the idea presenting people to the ten latest news items, because otherwise they'll never hear about what's going on in Palestine: No! It's because they've chosen not to have it.' (Poder, 13-09-2007)

Editor Niels Prætorius envisions that the user profile could be used for marketing purposes of DR content, not on the personalised pages, but on the regular DR web pages:

I don't imagine that we push content on MitDR. When I talk about 'push', I talk about all the other pages a MitDR user otherwise visits. We already make a 'push' there through a lot of 'spots', here I imagine that we, based in what people have chosen on their MitDR page can be much more intelligent concerning what we push. (Research interview, Prætorius, 19-06-2008)

DR's need to attract attention to content does not cease with a personalised service. The personalisation concept redefines however the way the PSB can address the user before it is perceived as intrusion. The personalised PSB page is a realm shared among the user and the PSB.

Target Groups and Widget Diversity

An interesting observation from the MitDR project is the application of target groups. E.g. are the decisions of which widgets to produce and how they should be grouped for new users, guided by DR's division of users in target groups. In a research interview the project leader Christian Valentiner explains how the MitDR widgets are produced with certain target groups in mind:

"We've got 'the blue type': Sports, news, financial. And then we have [widgets] for a P3-profile, and then we have a female segment; that's the types we're sketching in order to aim broadly. When we launch MitDR.dk we'll probably focus on the more nerdy technology types, this we can't get around, but of course we should be able to reach the general population. So the prioritisation has been about hitting these target groups. If we should be able to gather [widgets] for a P3-profile, then we need some music content, we need something that links to dr.dk/musik, we need something that hangs together with our radio and our channels. We have a lot of news items, which hopefully should be tied to the blue type; our RSS-features and our local content. And then we've got the cultural one, that is Bonanza etc. In this way we start categorising some of the widgets we produce now." (Research interview, Valentiner, 11-06-2008)

The concept of target groups has for many years guided PSBs to e.g. organise the content into segmented channels. The concept of personalisation should however normatively organise the content according to other principles, namely the individuals' consumption patterns. The very idea of target groups thus seems contradictory to personalisation with its concepts of 'One-to-one marketing', 'segments of one' etc. (see Peppers and Rogers, 1993; Schipper, 2002; Simonson, 2005). Why does MitDR apply target groups thinking to the project? Tentatively, the question can be answered by looking at the financial resources available for the MitDR project. In order to create a more or less coherent experience for at least some users, the scope of expectations must be trimmed to a size that can be fulfilled and target groups of the service must be chosen. Although it is Editor Niels Prætorius'

vision that the traditional dr.dk site during the years should melt together with the widget-based MitDR (Prætorius, 19-06-2008), the choice among seven widgets by the launch of the project can possibly not fulfil all expectations of all target groups and the process of 'widgetifying' DRs' content is long and very resource demanding. To realise the personalisation of dr.dk, ironically segmenting and target groups must be applied. The diversity of content and freedom for the user to choose can first be achieved once all DR's content is available as widgets, if the personalisation project should be understood literally in its full consequence. I assume that the degree of personalisation experienced by the user is related to the diversity and choice of widgets the user can find.

The quotation above also indicates something else, namely that DR's communicative intention is unchanged; it is still driven by DR's search for attention. E.g. "*we have a lot of news items, which hopefully should be tied to the blue type*". The communicative situation is still a 'push'-situation, although the concept of MitDR is that users should be able to '*feel at home*' through a tailored offer (Nyt fra DR, 02-07-2008).

Content Editors' Opinions on Personalisation

I have not systematically examined how journalists and editors that are not engaged with PSB *distribution*, but with *content production* look at the concept of personalisation. Two statements can however bring some of the classic arguments of enlightenment and PSB's importance for society's coherence into play as a contrast to the arguments presented above.

In a research interview I asked the DR news editor Louise Bjerregaard whether she could imagine a personalised filtering of the news service she edits, namely the internet based TV-news clip service 'DR-Update' (DR-Update, 2007). The concept of the DR-Update service is that the users can scroll down the page to watch the news clip they find most interesting, but that the editor decides the order in which the news clips are listed and which one that should be placed on the top. Theoretically the clips could be listed according to other principles, e.g. ranked by an algorithm according to their assumed relevance to the individual user. This would however definitely challenge the editor's decisions on the importance of the news stories:

J: Do you as an editor have a problem with it? LB: Yes, a bit, because I think, objectively seen from my point of view, that some stories are more important than other, and some news is more important to get out than other. That is why I choose them, prioritise them, position them at the top of the page, or give them extra space on the page. So I'm having problems with that [algorithmic recommendation]. I can easily see the rational point that you can sort yourself, but that you also prioritise? In fact there's no big difference between that yours most chosen stories always are on the top, a personalised page, or that you basically avoid all the topics you're not interested in. It is rather in the case where there was no editorial control at all; this I would think would be wrong because then we would let down our Public Service responsibility. (Bjerregaard, 18-10-2007)

Bjerregaard sees the editorial selection and prioritisation as an essential part of the Public Service remit.

J: That is, principally you would like to push some content to the users? LB: Yes! It's at least my personal opinion. I think that there are some important news criteria, some criteria of importance, which haven't gone out of fashion, which still hold good also on web. (Bjerregaard, 18-10-2007)

In November 2007, Editor in Chief for DR News, Ulrik Haagerup gave a keynote presentation at Swedish Television's yearly 'Public Service Academia' (SVT Public Service Akademin). After the presentation I had the opportunity to ask for his view on the relation between PSB and personalisation, taking the PSB remit in consideration. Haagerup noticed that the development in the media use goes in the direction of personalisation:

What happens for media companies currently, and which is world wide wave that goes on through journalism, is that all stories should be about me. It is the journalism's criteria of

'relevance': it should concern my money, my illnesses, my roof, my mortgage. I think the future of the Public Service Media companies that we dare combining the criteria of relevance with the criteria of essentiality. That is that we dare producing stories about us, about the community. Not only about you, but about us, the global and the national. (Haagerup, 21-11-2007)

Haagerup is here talking about policies for the production of PSB content, particularly news and current affairs, not about the (personalised) display of the PSB content. If we however extend Haagerup's argument, it is logic to assume that the policy of producing 'stories about us' need to be backed up by a policy of prioritising these stories in the display content items, e.g. in the list of news stories. The open question is whether such stories also should have some priority ranking or weighting in algorithms that compose or filter PSB content, e.g. recommender systems, but also in more simple systems of social recommendation such as the 'most read' and 'highest ranked' filtering offered by many publishers.

Discussion

The perspectives of the design and implementation of personalisation services for PSB content reveals a number of very fundamental questions, including one on PSB's editorial remit vs. the concept of consumer sovereignty. As PSBs not only strive to enlighten and inform but also are competitors on the attention economy market, the tension between fulfilling listeners', viewers' and users' wishes and demands and fulfilling the enlightenment remit of information and education, which has existed since the liberalisation of the radio- and TV market, has not become less tense. The personalisation services articulate the tension even stronger.

PSB's problem of being agenda-setters in a competitive information-overloaded world does not cease with the introduction of a personalisation system, but reversely can the push of content be perceived more intrusive (advertising-like) in personalised interface. The concept of a personalised interface promises a high degree of fitness to the interests of the users, but will the PSBs as economy-of-scale producers of content for the public be capable of matching this expectation? Providing a personalised service to the users does not change the PSB's role as agenda-setter or publisher but it possibly obscures the clarity of who selects the content. In broadcast and on normal web pages it is clear who makes the editorial choice. On widget-based personalised pages like the BBC front page or MitDR, user are on one hand encouraged to customise the page themselves, on the other hand they are constrained by e.g. obligatory content and the array of widgets available. The personalised services provided by PSB are thus only personalised to a certain degree.

In the attention economy battle going on in the media industry, personalised services appears currently to be one of the preferred weapons. By assigning a part of the editorial power to the users through the concept of customisable widgets, PSBs hope for a sustained influence in the media consumption. The question is whether personalisation conceptually fits with public service media and its inherent properties? Personalised filtering of PSB content through widgets, social recommendation, or algorithmic recommendation can be understood as means to optimise the users' attention economy. By delivering more specifically what the users are assumed to prefer, media providers hope for both a higher exposure of their content and for consumer loyalty. The optimisation of attention is not new and not unique to media personalisation; at least since PSBs became challenged with competition and claims of reach, PSBs have striven to optimise attention. This striving of the PSBs has however brought an intrinsic conflict into the light, namely the conflict between getting attention and communicating intentions.

The Attention / Intention Balance

Illustrated as matter of balance, the questions that face PSBs whenever they plan schedules and programming policy, design information architecture for websites, or develop personalised web services could be described as a balance between getting attention and spreading intention. On the one side we find 'attention', understood as all kinds of means that can be applied to enhance the amount of attention the PSB product gets. In the programming- and distribution activities of PSBs the striving for optimising attention is expressed in many forms; from the coverage of popular topics, the appearance of popular persons, to the easing of the users' access to the desired programme content. It is the latter

which is the focus of this paper; how the concept of consumer sovereignty eventually is applied when PSBs organise the presentation of the onDemand content. Competing with commercial web content providers, the usability of the services becomes an important criterion when the users' attention should be optimised. The concept of usability itself with its striving for removing cognitive hindrances in users' use of a given software could also be described as an optimisation of attention. Web-based commercial personalisation services, like Netvibes and similar, could mentioned as examples of means to optimise the individual's attention.

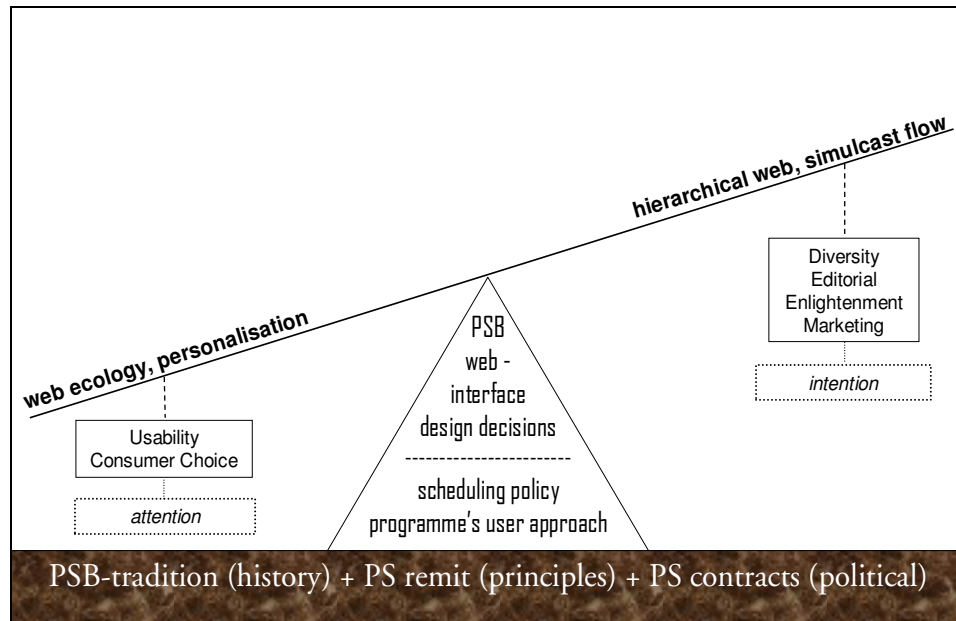


Figure 2: The Intention – Attention Balance of PSB

On the other side we find the intentions; or rather the position where sender's intentions are of equal or greater importance than just getting attention. Here we find the classic deeds of PSB: enlightenment, information and education. Ironically, we also find traditional marketing there; although interested in optimising the attention, the job of marketing is however to spread a certain message with a certain intention to as many relevant persons as possible. The intention-side of the see-saw is e.g. expressed in the idea of broadcast flows (simulcasts) and in traditional non-personalised hierarchical information architecture.

The balancing is based on the decisions being taken when PSBs shape their (personalised) webservices, their information architecture, their broadcast scheduling policies and when they decide the approach to the users in the PSB programming. My claim is that the balancing between intention and attention is determined by the details in PSB design decisions being taken, e.g. concerning eventual obligatory content.

The balance of attention and intention stands on a ground merged of 1) PSB's tradition expressed in its history, 2) PSB's remit expressed in the PSB principles (e.g. UNESCO, 2001), but also 3) the political realities in which the national PSBs are embedded. As we see, this compound is self-contradictory when it comes to the intention – attention balance; historically intention has been weighted highest but with the societal change towards individualism and with liberalisation / 'marketisation' of the media production the balance has shifted towards attention, and placed PSB in a 'Skylia and Charybdis' situation, as described e.g. by former DR General Director Christian S. Nissen (2006), leaving the old PSB's intention-protecting organisational and management praxis's distorted confronted with the market forces (Tracey, 1998; Søndergaard, 1999; Scannell, 2005).

The balancing problem can be illustrated by how PSBs talk about competition, and particularly how PSB staff name those people 'out there': are they 'the citizens', 'the listeners / viewers / users', or 'the customers'? In my project research interviews with Danish and German PSB staff I find no

consistency in the use of the terms, but some PSB staff like DR editor Henrik Heide use the word customer to stress the competitive situation in which DR is situated:

*HH: It's our duty to place ourselves in the customer's place. J: You talk about DR's 'customers'?
HH: Yes, damned yes! J: That is also about keeping them? HH: Yes, of course. We're always in a double situation. We have the public service remit, but on the conditions of the market. We can't deny the market and subsequently we can't deny the existence of the market mechanism, and of course we will do everything to keep... We are also making 'clocks' at P3 so we know exactly how long time the listeners' patience lasts, how long time there should be in between the news broadcasts, where the competitors have positioned their advertisements, and then we counter-program with a good piece music, so if people turns the dial to P3 then they hear good music. Of course we do counter programming. We do it also on TV, constantly. In this way we are constant operating on the conditions of the market, and there's nothing reprehensible in that. (Heide, 29-05-2007)*

The perception of DR's listeners, viewers and users as 'customers' emphasises the market conditions on which DR operates. We will not here discuss the political economical logic of PSB on market conditions, but instead examine the tensions in concept of PSB having customers.

PSB, customers and mass customisation

The controversial question whether PSBs have customers have been e.g. discussed by Picard (2005) who suggests more clarity for the licence-fee payers to see what they personally have had in return for the money paid. The idea of more direct relationship between licence-fee payers and the PSB is also picked up by Lowe (2006) who discusses the controversial idea of applying the method of customer relation management (CRM) to PSB management. Lowe concludes that due the principle of universalism the concept of CRM cannot be applied directly on PSB / PSM as long as CRM also implies customer differentiation, but that the CRM concept contains elements that can provoke thoughts in PSB management. I would like to add, that although customer differentiation cannot be accepted for PSB's general activities, the use of target groups and channel segmentation in PSB's program production and scheduling is de facto a type of customer differentiation: some programming is aimed at one group of users, where other programming is aimed at another. CRM could thus be used as an analytical and operational tool to ensure PSBs' reach by making sure that *all* PSB users are addressed as 'star customers' (Gupta and Lehmann, 2005; Lowe, 2006:13-14), not only the profitable segment as commercial CRM suggests with its customer differentiation.

There is however more intrinsic problems to the application of the CRM concept on PSB; namely the nature of the media product and perception of PSB's users as 'customers'. If we first look at the nature of the PSB product we note that it is mass-distributed, consists of intellectual work, is non-generic, and novelty is an essential feature: Media products are mass-distributed in order to achieve the economy-of-scale, the production of expensive products is 'financed' by the distribution of copies at almost zero costs. As a private person you can't order a programme to be made and delivered. PSB's only option is mass customisation; to granulate the content already produced for mass distribution, and make it available in all kinds of sizes on all kinds of delivery platforms; we currently observe this in the 'content sharing' and onDemand strategies of the PSBs, and now also in the widget-based personal interfaces. The compilation of the media elements can to a certain degree be automated and different flows of content can be delivered to different users, but the creation of content not be customised if the economy-of-scale should be achieved. The personalisation of PSB content is thus limited to the personalised compilation of non-personalised content.

The second intrinsic problem is the question whether the PSB has a customer relationship to its users. The concept of customer relation management (CRM) tries re-establishing the former personal relationship between the merchant and the customer, which was characteristic of the pre-industrial society. By imitating elements of this personal relationship the idea is that companies should become efficient in their customer retention, building up loyalty and trust, and get a more intense understanding of what is going on in the minds of the customers. The idea is to 'know' the customers. Fritz Schipper, who discusses the concept of CRM in the light of Horkheimer's criticism of mass marketing and the disappearance of the 'customer as king', points out that the German word for

customer (Kunde) is etymologically affiliated with the verb 'knowing' (zu Kennen) (2002:26). This relationship stresses the personal relationship between the customer and the merchant, who also is expected to treat the customer as the king. With the industrialisation of production and trade, the personal relationship between the merchant and the customer dies, and the 'customer as king' becomes empty words. Schipper discusses whether CRM with its new focus on customers really re-establishes the 'customer-king'. As distribution medium based on requests and retrievals, internet enables automated mass customisation based on user profiles, e.g. filtering of content according to personal interests and preferences, or recommendation of content. The technological part of CRM claims that if the customers' preferences can be gathered, stored and analysed in an automated way some elements of the personal relationship between merchant and customer can be imitated, e.g. the recommendation of products. The limitations of this imitation of 'customisation' lies in the systems' ability to gather quality information about the user, the interpretation of these profile information and its ability to react to it by shaping the service or product to the users wishes. As the interaction does not take place between two humans but between a machine and a human, the quality of the customisation can of varying quality; e.g. expressed in some recommender systems of low quality yielding irrelevant recommendations. By adding data about other users behaviour and similarities between products to the recommendation algorithm (so-called 'collaborative filtering'), the quality of recommendations can be higher (Resnick, Iacovou et al., 1994; Upendra and Pattie, 1995; Sarwar, Karypis et al., 2001). Schipper expresses doubts whether CRM actually would lead to the rebirth of the 'customer-king', as the inherent dominant logic of companies is to create customers and influence their attitudes. The risk still exists that costumers are been seen as nothing more than '*a means the specific end of profit*' (Schipper, 2002:32). The intentions of the company dominate the wishes of the customer, despite all talk of being 'customer dedicated'. One could thus describe CRM as a way of optimising the relation (the attention economy) to the customers in favour of the company. How does this thinking apply with the principles and praxis of PSB?

As a mass media PSBs have a mass relationship to its users; they are all treated similarly, although they might have different wishes. The 'customer' concept is thus in the context of PSB mass media problematic if we consider the origins of costumer concept; the word 'customer' promises a personal relation which is difficult to achieve given the construction of PSB mass media. PSB may apply mass customisation in order to reach the users better, to match their preferences, but a genuine customer – merchant relationship requires a one-to-one contact concerning the product, a type of contact cannot offer all its users due to not only the economy-of-scale of production, but also due to PSB's agenda-setting function: it might be that representatives from the audience to a limited degree can participate in the creation of content based on the framework set by the PSB, but not all users can be heard or included in the communication. PSBs do not have real customers, they might construct 'customers' in order to imagine the audience and they may involve representatives from the audience in the programming, but they don't have customers. CRM in relation to PSB could be used to identify which users could benefit from which content, but the application of CRM would be steered by the PSB, not by the users.

Attention Economy, Narrative Economy, personalisation and PSB

Central to Simon's concept of attention economy (Simon, 1971), which was introduced in the beginning of this paper, is Shannon's information theory of redundancy (Shannon, 1949). Simon explains: "*If a library holds two copies of the same book, one of them can be destroyed or exchanged without the system's losing information. In the language of Shannon's information theory, multiple copies make the library redundant. But copies are only one of three important forms of redundancy in information. Even if a library has only one copy of each book, it still has a high degree of informational overlap. If half the titles in the Library of Congress were destroyed at random, little of the world's knowledge would disappear.*" (Simon, 1971:45) Getting rid of redundancy thus seems in Simon's view to be the key to a better attention economy in governmental and scientific decision-making processes. Simon continues, with a mathematical understanding of information: "*The most important and subtle form of redundancy derives from the world being highly lawful. Facts are random if no part of them can be predicted from any other part – that is, if they are independent of each other. Facts are lawful if certain of them can be predicted certain others. We need store only the fraction needed to predict the rest. That is exactly what science is: the process of replacing unordered*

masses of brute facts with tidy statements of orderly relations from which these facts can be inferred.” (Simon, 1971:45).

Now we can contrast this view on information with another, I should call ‘narrative economy’. I invent it here to describe semantic aspects of the media experience that cannot be described with the attention economy approach which is based on a mathematical understanding of information. With ‘narrative economy’ information is understood as experiences or as narratives. The view is solemnly from the ‘experience’ side of the narrative; I do not use the term to describe how authors economise elements in a story. With ‘narrative economy’ I here understand the value of the redundant (semantic) information that glues the experience together. For a narrative to work in the human brain, it must refer to other narratives, cite them or remediate them. Technically, this is redundancy. Deviances in the rhetoric and aesthetic means represent separate layers of additional information. Often these extra layers mirror the intentions or perception of the information provider. One may read, hear and view several news items covering the same ‘story’, and get a few bits of extra information each time. If controversial subjects are discussed, the differences among the news items may even create its’ own narrative. As this way of information consumption is highly redundant and inefficient, the question emerges: why not, through intelligent algorithms, reduce the redundancy, forwarding only the incremental new information, say about a news story?

Here we see the shape of the ‘narrative economy’, signified by the personal value of redundancy in media display. Elements in this economy includes social praxis’s surrounding news- and media consumption; the rituals of news consumption (consumption habits in daily life), the regression effect of experiencing well-known media content; the calming effect of repetition, and well-established narrative patterns or conventions of dramaturgical, temporal structure in experiences; each story must refer to other stories, and each story has a beginning, a middle and an end. Of course there are limits for the acceptable amount of redundancy; a well-informed and bright person might experience redundancy long before the not-so-well-informed or not-so-bright person. New information might be rejected as ‘old news’ if the similarity with known stories is too high etc. Now we can observe how the two economies clash: the redundancy-hostile ‘attention economy’, and the redundancy-friendly ‘narrative economy’. The ‘attention economy’ tries to make communication as efficient as possible by removing redundancy and filtering away irrelevant information, the ‘narrative economy’ tries to create experiences. These two economies clash at one particular place: in interactive interfaces that display media content; particularly personalised interfaces for (journalistic) PSB media content.

Looking back on the history of computer interfaces and web pages, we can see that the classic computer interface was made to facilitate efficient personal work-situations; much early research on interfaces aimed to make the individual human-computer-interaction as error free and efficient as possible (see e.g.: Nielsen, 1990; Winograd, 1996). In other words, by making the interfaces so tidy and well-organised as possible, and by striving to make them as fit as possible to the tasks being performed by the user, the attention economy of the user was optimised. The concept of usability can thus formally be described as optimising the user’s personal attention economy by organising interfaces according to the ‘need-to-know’ principle.

The first generation web pages were a one-way publishing tool; even if users freely could click around on the site, the composition of the content was editorially decided by the author. As all other publishing media, they optimised the publisher’s attention economy by trying to get as much attention from the user as possible. In a way one could say that they have the opposite purpose compared to the principles of usability, namely by trying to keep the user’s attention. The interactivity of the media and choice of media to consume however soon forced websites to offer good possibilities to navigate; the power over the attention economy had shifted from providers to users.

If we now look at widget-based webservices, we see that they mix these two interface approaches, on the one side being a customisable individual tool for user, on the other side still being an edited publishing channel. The particularity of this type publishing channel is that while the user can configure his or her own media experiences, the media content itself is shaped and controlled by the provider. The widgets represent a strange hybrid between an editor-steered and user-steered media experience; it becomes increasingly difficult to tell who owns the personalised widget-based web page. As the two types of interfaces merge – the user-steered and the editorial steered, we experience also a

clash between two ways of representing information; as coherent narratives or as granulated information fragments. In the personalised widget-based interface the two ways clash; a descriptive, algorithmic way of understanding information, and a narrative, redundant way of understanding information. The redundancy-hostile attention economy and the redundancy-friendly narrative economy meet in the widget; but with the attention economy governing the narrative economy. The logic of retrieving and displaying content in the widget is based on attention economy, only the displayed items represent the narrative economy.

As tools for customisation, personalised web pages let users to a higher degree administrate their attention economy, but doing so users must submit to the redundancy-hostile logic of the attention economy, leaving the narrative economy behind. The personal value of personalised interfaces is thus strongly linked with the paradigm of the attention economy. The personalisation of the media experience requires the user to apply the formalisms of media content, e.g. by typing in certain keywords of interest or certain feeds to subscribe to¹³, and thereby accept the logic of attention economy. But when the media content is experienced, then plays the attention economy a less significant role, suddenly the narrative economy of having a good experience comes into play. Subsequently a tension emerges between the rationalism of the algorithmic personalised media content selection and the experience of the content. The attention economy of personalising the media display clashes with the narrative economy of experiencing the content.

PSB's traditional force has been creating narrative value. Editors and schedulers are masters of composing content with the right amount of redundancy to meet fit into the narrative economy of the average user. The PSB content survive on the attention economy marked due to its strong position in the users' narrative economy. Redundancy is accepted as long as the information provider is a trusted administrator of your attention economy. You switch on the TV or the radio and trust the flow. This out-sourcing of the accountant function of personal attention economy, is however challenged by the growing individualisation in society. Letting other people or systems decide your media experience, conflicts with current predominant thinking of 'taking care about one's own life'; here taking care of your attention economy. Ignorance of your personal attention management is labelled a weakness, positioning you as a less smart individual.

What are PSB's strategic options in this individualistic view on attention economy? If PSBs start compete more actively in the attention economy through personalised services, then each single PSB media item must fight its way through the attention economy without benefitting from the narrative economy provided by the PSB flow context. It leads to the conclusion that, the more granulated and personalised the PSB contents become, and the more it is distributed outside the PSB flow context, the less the PSB is able to utilise its classic strength of creating narrative value.

Conclusion

Although none of the DR interviewees understands the 'MitDR' project as a customer relation management project, and some interviewees explicitly have pointed at the PSB remit of universalism as a definitive reason not to make CRM projects, I have inspired by Lowe (2006) and Schipper (2002) tried to analyse the MitDR project in the light of customisation and CRM thinking, and as an expression of intensified competition for attention among social web services. I have examined whether concept of customers make any sense to PSB, and conclude with Schipper (2002) that the use of the word 'customer' in its original meaning as a personal relationship between the merchant and the customer, based on the concept of 'the customer as the king' is misleading in the context of PSB, as the users' influence on the product due the economical logic of mass media production is very little. To use CRM to understand a project like 'MitDR' is not relevant, as the MitDR project aims at letting the users choose the products they like, not in a typical CRM-thinking of pushing products to the customer. If the perspectives of the MitDR project - including the demand-steering of news content production, the implementation of personalised user-profile based marketing of DR content, and a recommender service - however in the future will be utilised further by DR, an analysis of MitDR as CRM becomes relevant. Generally it can be concluded that the MitDR project does not structurally change the relation between DR and its users but expresses it in a new medium; the personalised web

¹³ an example could be the keyword based news service Wikio (www.wikio.com) accessed 05-09-2008

page. Operationally it can be observed that providing an offer which can compete with commercial widget-based services is very demanding both technically and financially for a small PSB like DR.

For the analysis I furthermore used the Herbert Simon's theory of 'attention economy' (Simon, 1971) to understand the tensions going on when DR hope to engage users more in the content. I found that in order to describe the particular properties of journalistic content the theory of 'attention economy' must be supplemented with a theory of what I tentatively call a 'narrative economy'. The narrative economy is opposed to Simon's attention economy, not based on Shannon's theory of redundancy, but acknowledges redundancy as an important factor in humans' experience of media content. I claim thus, that the more intensely a PSB pursues a strategy of optimising the users' attention economy, the more will the internal value of the PSB, the narratives, the semantic content, be challenged. I thus claim that the more granulated the PSB content will be (e.g. through a personalised service), the more influence the PSB loose will in the attention economy, as PSBs special property is to construct coherent narratives. As competitors in web-based attention economy of delivering the best tailored personal filtering of content, the PSBs are due to reasons of economy, politics, and organisation on a very difficult mission. PSBs may try to compose personalised recommendations of their content and thereby expose the diversity of their product line better, but if the desire for attention gets bigger than the belief in intentions, the PSBs may expose themselves as not very strong competitors in the attention economy. There is a natural limit to how forceful PSB can try optimising the attention before the intentions suffers.

A possible path to follow for personalised webservices is to stay with the intentions of the programming but let users discover content based on what other users have discovered. That implies however that PSB editors start trusting the users' selections, and that these selection are displayed in a far more intelligent and multi-dimensional form than showing 'the five most seen' video clips. If the users' choice should be trusted, users should be equipped with far more sophisticated social tools to navigate the content.

References

- Bjerregaard, L. News Editor, DR-Update, DR, interviewed by J. Sørensen 18-10-2007
DR-Update (2007) DR-Update, Accessed 08-06-2007 at: www.dr.dk/nettv/update.
- DR og Kulturministeren (2006). Public service kontrakt mellem DR og kulturministeren for perioden 1. januar 2007 til 31. december 2010.
- Foreningen af Danske Internet Medier (2008) Toplisten, Accessed 13-05-2008 at: <http://www.fdim.dk/?pageid=84>.
- Gupta, S. and D. R. Lehmann (2005). Managing Customers as Investments: The Strategic Value of Customers in the Long Run. Upper Saddle River, NJ, Wharton School Publishing.
- Heide, H. Redaktør, DR Nye medier og TV, dr.dk, DR, interviewed by J. K. Sørensen 29-05-2007
- Hertz, T. Head of Marketing, DR-Markedsføring, interviewed by J. K. Sørensen 11-03-2008
- Haagerup, U. Editor in Chief, DR, interviewed by J. K. Sørensen 21-11-2007
- Lowe, G. F. (2006). Customer differentiation and interaction for innovation: Two CRM challenges for PSB. RIPE 2006, Amsterdam, 16-18 November 2006, pre-print. DOI: n/a
- Löwgren, J. (2002). The use qualities of digital designs. Introducing the idea of important use qualities for different genres, illustrating some 20 such qualities.
- Löwgren, J. and E. Stolterman (2004). Thoughtful Interaction Design. A Design Perspective on Information Technology, The MIT press.
- Mitchell, A. (2005). "When it comes to media, power is still in the eye of the beholder." Marketing Week 28 (38): 30-31. DOI: n/a
- Nielsen, J. (1990). Heuristic Evaluation of User Interfaces. CHI'90, ACM. DOI: <http://doi.acm.org/10.1145/97243.97281>
- Nissen, C. S. (2006). No public service without both Public and Service - Content provision between the Scylla of populism and the Charybdis of elitism. Making a Difference: Public Service Broadcasting in the European Media Landscape. Eastleigh, John Libbey Publishing: 65-82.
- Nyt fra DR Vær med til at teste 'Mit DR' Published 02-07-2008
Accessed at: mail
- Peppers, D. and M. Rogers (1993). The One to One Future. New York, Currency Doubleday.

- Picard, R. G. (2005). Audience Relations in the Changing Culture of Media Use. Why Should I Pay the Licence Fee? RIPE@2005 Cultural Dilemmas in Public Service Broadcasting. . G. F. Lowe and P. Jauert. Göteborg, Nordicom.
- Poder, J. Udviklingsredaktør, DR Nye medier og TV, DR, interviewed by J. Sørensen 03-05-2007
- Poder, J. Udviklingsredaktør, DR Nye medier og TV, DR, interviewed by J. Sørensen 13-09-2007
- Poder, J. Udviklingsredaktør, DR Nye medier og TV, DR, interviewed by J. Sørensen 13-11-2007
- Prætorius, N. Kanalredaktør dr.dk, DR, interviewed by J. K. Sørensen 19-06-2008
- Resnick, P., N. Iacovou, et al. (1994). GroupLens: an open architecture for collaborative filtering of netnews. Proceedings of the 1994 ACM conference on Computer supported cooperative work, Chapel Hill, North Carolina, United States, ACM. DOI: <http://doi.acm.org/10.1145/192844.192905>
- Sarwar, B., G. Karypis, et al. (2001). Item-based collaborative filtering recommendation algorithms. Proceedings of the 10th international conference on World Wide Web, Hong Kong, Hong Kong, ACM. DOI: <http://doi.acm.org/10.1145/371920.372071>
- Scannell, P. (2005). The Meaning of Broadcasting in the Digital Era. RIPE@2005 Cultural Dilemmas in Public Service Broadcasting. . G. F. Lowe and P. Jauert. Göteborg, Nordicom.
- Schipper, F. (2002). "The relevance of Horkheimer's view of the customer." European Journal of Marketing 36 (1/2): 23 - 35. DOI: 10.1108/03090560210412683
- Shannon, C. (1949). Mathematical Theory of Communication, University of Illinois Press.
- Simon, H. A. (1971). Designing Organizations for an Information-Rich World. Computers, Communication, and the Public Interest. M. Greenberger, The Johns Hopkins Press: 37-72.
- Simonson, I. (2005). "Determinants of Customers' Responses to Customized Offers: Conceptual Framework and Research Propositions." Journal of Marketing 69 (1): 32-45. DOI: n/a
- Søndergaard, H. (1999). Public service ved vejs ende. Public service-TV. U. Carlsson. Göteborg, Nordicom: 21-29.
- Tracey, M. (1998). The Decline and Fall of Public Service Broadcasting. New York, Oxford University Press.
- UNESCO (2001). Public Broadcasting Why? How? World Radio and Television Council. Paris, UNESCO: 1-28.
- Upendra, S. and M. Pattie (1995). Social information filtering: algorithms for automating 'word of mouth'. Proceedings of the SIGCHI conference on Human factors in computing systems, Denver, Colorado, United States, ACM Press/Addison-Wesley Publishing Co. DOI: <http://doi.acm.org/10.1145/223904.223931>
- Valentiner, C. Project leader, DR-Medieudvikling, DR, interviewed by J. K. Sørensen 11-06-2008
- Winograd, T., Ed. (1996). Bringing Design to Software, ACM press / Addison-Wesley Publishing Company.