
A personalised newsplatform for de Volkskrant

Scan the black and white QR-code for a new concept for de digital Volkskrant



Discovering the possibilities of the collaboration between journalists and algorithms at de Volkskrant and DPG Media

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The opportunity to spend so much time on a single subject was a true gift. To do it at a place that I hoped to be at for a few years made it even more special. Combining journalism and design was always an area of huge potential to me, DPG Media gave me the opportunity to do it for the newspaper I read every day: de Volkskrant. That is why, before you dive into the report, I would like to thank all of the many who have helped me get to where this report is now.

First and foremost I would like to thank Dominiek, the fact that we have called for 15 minutes every day since the start of my project has become a part of my ritual and it almost feels weird to stop again. You have helped me feel free in doing what I wanted to do in a large company with a lot of things going on and I think it is exactly that feeling of freedom that made this project so much fun to do.

Then my chair Ellis, I have really valued your genuine interest in how I was personally. A Starbucks coach meeting at a bench in the station showed that the interest was beyond the borders of the faculty. And Jasper, you have really helped me make this graduation possible in the first place and the weekstarts have been an absolute pleasure. Plus the fact that you call me for half an hour the minute after I text you deserves an award on its own. Enjoy Sweden, I am sure it will be amazing.

Within DPG Media and de Volkskrant there are countless persons who have helped me get an insight into the world I was and still am so curious about. PAT-team, Fabienne, Sofie and so many more: let's stay in touch and who knows we might be colleagues again soon. The insights you gave me were inspiring, but the conversations about the parties on the weekend and everything else going on in life have made me feel welcome from the first day.

And then to all the people outside of this project that I have dragged in from time to time (that's a list as long as this report probably) shoutout to you. A special mention for Wies (mark her name, most talented upcoming journalist in the game) for your endless patience and appreciation. My family who built a foundation for me that is so strong, that the only thing I needed to worry about during graduation, was graduation, which is an insane privilege. Joost for letting me work in your bookstore. And ofcourse my homeboys Casper, Puck, Koen, Jemal (da bro) and Ties: let's take over the world after we are all graduated, together we might have a chance.

As mentioned at the start: this graduation was a gift. I feel truly grateful and privileged that I have been able to do this. If this was the start of the rest of my life, then beautiful times are ahead.

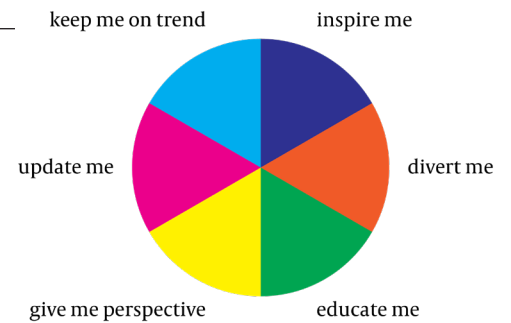
Yours sincerely,
Abe

Preface

Executive summary

This master thesis for Strategic Product Design at the TU Delft presents a design for a personalised Volkskrant-app. The goal of this project was to explore the different possibilities of personalisation and see how it could help de Volkskrant fulfil its mission to enrich their reader's life through news.

Figure 1: The reader needs model by Shishkin

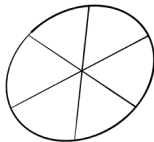


Why?

During my whole project I have involved readers, journalists and the product developers at DPG Media. Within the theory analysis, interviews and conversations I had with these stakeholders I have identified four reasons for implementing personalisation in the digital news distribution product of the Volkskrant:

Facilitating the fulfilment of the diverse reader needs of the subscribers shown in the figure (1).

The current home feed of the app and website of de Volkskrant mainly focus on the update-me need.



Developing the platform of de Volkskrant into a product that takes full advantage of the possibilities of digital news distribution.

The current digital news distribution product offer of de Volkskrant is still seen as a digital translation of the physical newspaper. It is time to look at what digital developments can offer something different.



Offering an extra service for the users of the platform of de Volkskrant

The rise of competitive platforms for news put pressure on the business model of de Volkskrant. Personalisation could offer an extra service to bind readers to the app of de Volkskrant.



Limiting the news overload that readers experience in current day and age.

De Volkskrant should help subscribers to find the articles they look for and offer a clear overview.

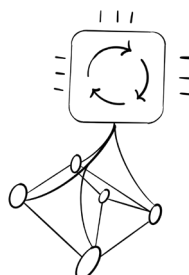


How?

To create an algorithm that would facilitate more needs of the readers, I came up with co-curation of the news. The digital news will now be curated by both journalists and an algorithm, both having a different responsibility:

Journalists:

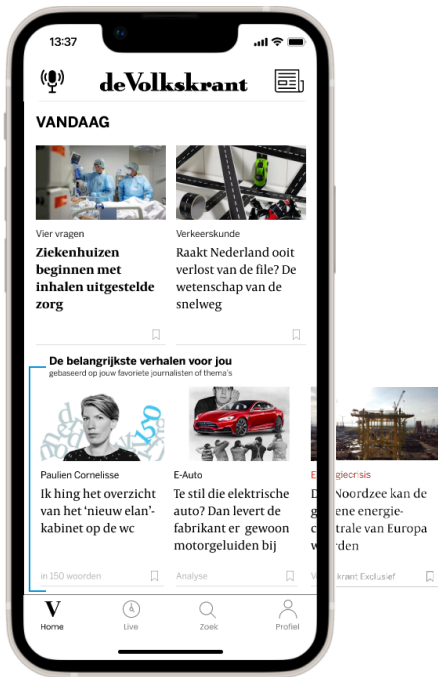
Delivering on the promise of creating the most relevant news events and productions that make de Volkskrant stand out.



The algorithm:

Bringing the niche articles to the right readers by fulfilling their personal habits, deepening their knowledge in specific topics and surprising them with suggestions out of their filter bubble.

Figure 2: The home feed of the final design



Het doorleesmenu - The interface at the bottom of an article

When a reader finishes an article and wants to have a deeper understanding of the subject the new design offers the following functionalities:

What?

The final design proposes two newly designed interfaces for the app of de Volkskrant. Focusing on two scenarios:

Getting the right article to the right reader: the home feed

The newly designed home feed is co-curated. A horizontal scroll bar was added to the home feed saying 'de belangrijkste verhalen voor jou' - the most important stories for you.

This addition is based on three key principles for personalisation: transparency, autonomy and diversity. The horizontal scroll bar is distinctive because of its look, title and scrolling direction, allowing the users to dive into it or leave it out in their session.

The possibility to archive an article: the user can save an article to a reading list, to read it again later or keep it for future references.

The context of the article: a short introduction about the author of the article and the possibility to follow this journalist to get the newest articles in your 'belangrijkste verhalen voor jou'.

A new 'meer over' functionality: The suggestions after an article are now based on themes, allowing the reader to continue reading about a specific topic.



Figure 3: The new interface at the bottom of an article

What's next?

In the future journalists should continue to be involved in technological innovations for the digital news distribution product of de Volkskrant. Future research should improve the proposed concept by extensive user testing for the content of the algorithm and its creation.

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Digitisation has changed the news. When the first news websites started it was very normal for users (or for its early adopters) to still have a newspaper subscription so that a new paper would land on the doormat every day. The internet has changed that, the rise of free media and the constant accessibility of the latest news have changed people's perceptions on why to pay for news and what they look for in paid news. Until now de Volkskrant has found its way through time, differentiating itself from other media with well researched stories and perspectives on the most important events in the world. But with the new digital dynamics in the news industry differentiation on content level might no longer be enough.

The mission of de Volkskrant is not just to keep people up to date, it is to enrich the life of the readers and broaden their horizons. De Volkskrant excels in doing this in their physical newspaper: the diverse offer of different content and sections fulfils the needs of many readers. The digital Volkskrant is still in development to become just as good at fulfilling this mission. The articles are often found on different platforms, like social media as well and de Volkskrant is still looking for additional features to make their website and app the first page to go to for subscribers. De Volkskrant produces between 70-100 articles per day and most digital readers see only a part of this variety, next to that the rise of multimedia journalism also still needs to find a right place in the current website and app.

That is why I want to dive into the challenge of getting the right articles to the right readers and I do that through designing a personalised Volkskrant. A digital Volkskrant that shows the content that fits the needs of the readers. In this graduation report I present my final design for a personalised digital news service of de Volkskrant.

Introduction 1

Project Context: A Company Description

De Volkskrant is a Dutch newspaper that is part of DPG Media, the largest media company in the Netherlands and it also owns many media titles in Belgium and Denmark. Within the spectrum of newspapers in the Netherlands de Volkskrant is defined as a Kwaliteitskrant (a quality newspaper). De Volkskrant is a (politically) left-leaning organisation and is known for its research-journalism and many columns. It is the largest quality newspaper in the Netherlands with 335.000 subscribers (51% print, 33% hybrid (print & digital), and 16% digital).

DPG Media is a company that buys brands to develop these. DPG Media is focused on growth and is still working on buying a diversity of media brands. In 2012 they bought de Volkskrant and since then focused on developing the

digital services of de Volkskrant. Since then they have built a digital platform that they can put the website of de Volkskrant on. It is called the Selectives-platform. They also use this platform for het Parool, Trouw, de Morgen, Humo and the magazines Libelle and Margriet.

The product team of the digital services platform is based in DPG Media and is part of the Journalistiek and Product Ontwikkeling team (Journalistic and Product Development team - JPO). I perform my graduation as part of the Product Analytics Team, a specialisation within the JPO team. This is a team consisting of data analysts and UX-researchers, it combines qualitative and quantitative data to propose improvements for the digital products of DPG Media.

The Rationale for Personalisation at de Volkskrant

Digitisation no longer is a trend, it is here. De Volkskrant and DPG Media are working on strengthening its position in this growing and diversifying digital news landscape to stay relevant in the future. Next to newspapers like de Volkskrant, internet media like Nu.nl, Google and Apple news and social media brands have a large role in supplying users with the latest news. These developments have skyrocketed the amount of news that a reader sees on a day.

The need for quality news has become evident in the times of Covid-19, people are looking for places to find the right information and background on the latest news. The awareness that a lot of news that is seen might be 'fake news', leads to a larger distrust in media and emphasises the need for quality news (Quandt et al, 2019). De Volkskrant is well known for publishing well-researched articles and helping their readers understand the world a little bit better, giving them the insights and perspectives to help them form their own opinion. They dive into topics that are otherwise not exposed to the world and have a large group of journalists researching a diverse set of topics.

This diversity of news is what defines de Volkskrant and forms the core of its quality journalism. In the 100 years it exists, the print newspaper has been developed into a wonderful medium with a layout that displays this diversity. In the digital news this remains difficult, the diversity that it produces is not yet reaching the consumers. All consumers face an overload of content input, including news. It could be radio, television, etc. Digital users are very likely to face this overload even more and this has negative effects on their news consumption. Research shows that the high news availability on the internet causes news fatigue, which leads to consumers avoiding the news (Song et al, 2016)

De Volkskrant therefore should find ways to decrease this overload to get the variety of journalism they publish to the readers and in this way broaden the perspectives of its readers. It is the responsibility of a quality news medium to not just produce this diverse variety of quality news, but also publish it in a way that is accessible and pleasant for their readers.

Song et al. (2016) also demonstrates that news users experiencing this news fatigue and news avoidance, would be interested in using a news curation service as for example personalisation. Personalisation in the curation of the news would then function as a dynamic filter that shows less articles, but does not make the offer less relevant.

This graduation project explores how personalisation could be a valuable innovation for the digital Volkskrant. The digital services could be optimised by showing different content to different readers, content specifically adjusted to their needs. This could help limit the overload for readers and get them to news that they are interested in. The diversity of news should still be kept in mind during the whole process so that such an algorithm would not lead to so-called filter bubbles: a phenomenon that occurs often on social media in which users just get to see content that confirms their existing beliefs and leads to a narrow and inflexible worldview (Flaxman et al, 2016).

This project will dive into the possibilities of these diversity-centered personalisation possibilities, the possibilities that would fit de Volkskrant, and in what way the knowledge and expertise of the journalists that currently curate the digital news offer could be implemented or combined with digital solutions like an algorithm.

The design challenge

As a starting point of my graduation I propose the following challenge:

“Design a personalised digital news experience that fits de Volkskrant and contributes to achieving its mission of bringing diverse and quality content to the readers.”

It is important for this project to involve the stakeholders at de Volkskrant and DPG Media and the readers. In the end the design should be able to explain what the goal of the design is and is understandable for both internal stakeholder, journalists and readers.

The project approach

Personalisation focuses on the individual user first, that is why this project took a user-centred approach. Meaning that at key decision moments, readers were involved for evaluation and testing. During my analysis their needs were analysed and in the design phase the concept was tested. In order to design the personalised news service a multi-stakeholder approach was used for this project. The project involved both the product development department at DPG Media (Journalistiek-en productontwikkeling) and the editorial team at de Volkskrant, next to the readers. The journalists at de Volkskrant are experts in creating stories, that is why I wanted to involve them in the project. So that the final design does not just improve the user experience, but also

optimises the digital news distribution product for quality journalism.

As personalisation is currently often referred to as the cause of filter bubbles, it is important to challenge the stakeholders to see that it can also have an opposite effect. The personalisation design should broaden the perspective of the readers. To still push personalisation the MAYA principle was also applied. MAYA means Most Advanced Yet Acceptable. This approach aims to balance the recognisability of a design with its current form and add a new innovation to it (Friis Dam, 2021).

Process & reading guide

The process uses the double diamond as a helping guideline in this project (Design Council, 2005). This approach consists of four phases: Discover, Define, Design and Deliver. The discover and define phase form the research part of this graduation project. Within every chapter of this research part a discovery will take place, the most relevant insights will be defined and become a part of the design brief. The second part is the design part, this consists of the design and deliver phase. This is

an iterative part in which the final design is created, from the first sketch to the final prototype. This includes user testing and validation sessions with the stakeholders at de Volkskrant and DPG Media. A look ahead and a reflection form the end of this thesis.

In order to anonymously write about everyone involved in this project, I will refer to the stakeholders as they/them.

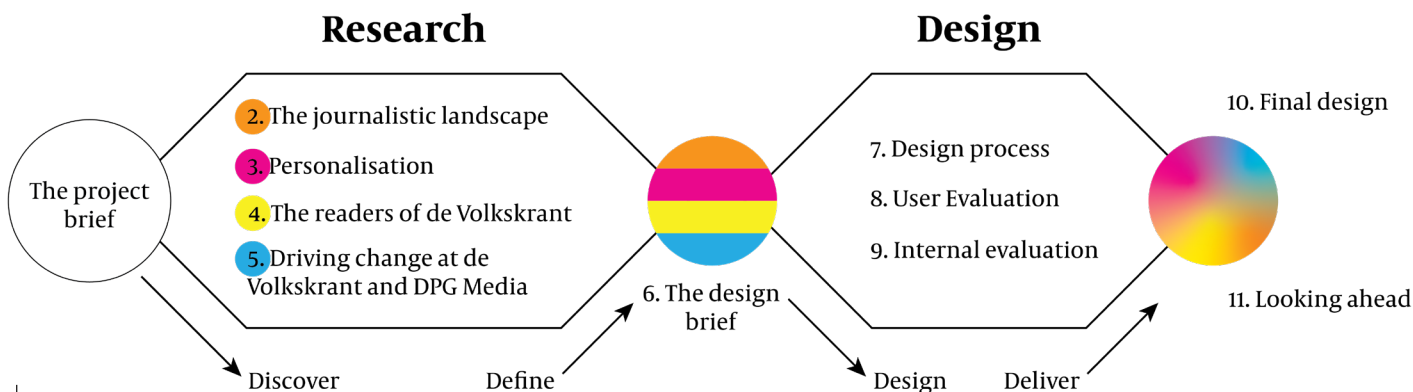
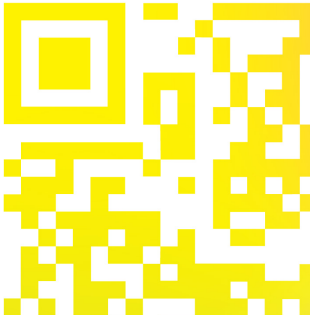


Figure 3: The reading guide of this graduation project



The journalistic landscape 2

Journalism holds an important role in society. As the fourth estate, it has a responsibility to deliver the latest news to its readers and strive to do so in an objective manner. Before the rise of the internet, it was also one of the limited sources to get your news. Large news institutions, like de Volkskrant, are not just publishing a collection of articles every day. They also have control systems to double-

check their facts and protect their authority.

In the past decades, there has been a shift in publishing news. When newspapers were solely physical papers, it was clear that they produced the news and there was no other source to get it. Now we have the internet, which means everyone can publish anything. This

development makes the position of a newspaper like de Volkskrant more vulnerable. They are no longer the first source, but people can see the source directly through social media. Big events are filmed with smartphones before a journalist can be present at the location and fact checks are no longer necessary to publish an article on social media.

Is de Volkskrant a news platform or a newspaper? (Or both?)

Since the start of the internet, the rise of new platforms have had a great impact on the way people receive their news, and have also forced the news companies to change themselves. New titles have come up, both quick headlines media like Nu.nl and research platforms like de Correspondent and Follow the Money. This section describes how these innovations have impacted de Volkskrant.

Within the journalistic world, the online realm is sometimes experienced as a thread, a thread towards the existence of the physical newspaper (Okhuisen, 2017; McLennan, 2018). In an interview with editor in chief of de Volkskrant Pieter Klok (EPC, 2021), he told the interviewer that the online news is important for de Volkskrant, but that the physical newspaper will remain most relevant for

the reputation of de Volkskrant: “I believe your physical product is your flagship store”. A clear statement on priorities.

This concept is especially interesting as it has been involved in the design, the front page of de Volkskrant is designed like it's a magazine cover. The way Klok explains this (EPC, 2021) is a trend, the newspapers have to fully utilise the physical affordances of the product to give it an advantage over their digital alternative. The question for this project that follows is: what does this do to the positioning of the digital newspaper? The affordances of a physical newspaper were set by Zhou et al. (2021), The full overview is in the Appendix 1, but the most relevant affordances that users still miss in digital news are shown in Figure 4.

Wayfinding

Physical newspapers allow the reader to orientate through the pages.

Retrievability

Interviewees from this study found it easy to retrieve an article that they wanted to read later or have read before.



Figure 4: The affordances of a physical newspaper by Zhou et al. (2021)

These affordances are currently recognised and appreciated in a physical newspaper and could be taken into account for designing a digital platform for the news. The digital newspaper also has advantages over the physical newspaper does not have. The latest news is directly uploaded to the platform for the users to read and if new information comes up it can be added to an existing article and does not require the process of printing.

New forms of reaching the audience have taken a place in the media. The podcast has gone beyond a trend and plays an important role in news publishing and according to the Reuters Institute more new types of multimedia

Importance

It is easy to see if what you read is important. If it's on the front page the reader knows they should check it out.

Completeness

The finity of a newspaper is appreciated. You can finish it. Online media never stops.

Serendipity

This enables the user to come across articles that he would not normally see.

productions are coming up in the years to come (Newman, 2021).

The transition away from physical newspapers has also brought new challenges to the way the internal stakeholders of journalistic companies have to collaborate. The division between the editorial and the commercial publishing team used to be very clear. In new digital products collaboration is necessary to create the best possible products, how de Volkskrant takes on this challenge will be discussed in chapter five. The newspaper that de Volkskrant produces has in this way become a part of the news platform it represents, but it seems like it is still the favourite part.

The rise of new journalistic business models

Quick news platforms like Nu.nl and NOS are far from new names in the journalistic sector. Their influence on the way of working of de Volkskrant is clear though. The sense of urgency that this quick news attracts a lot of readers has turned out to be a great model for successful journalism. These platforms and the rise of news on social media, create different roles for quality media (Woudstra, 2020). There is a need for quality, well-researched news.

This need has led to platforms that focus on just this, 'unbreaking news platform' de Correspondent and Follow the Money both focus on helping the reader to understand what happens in the world and involving the reader in this process (Wijnberg, 2013; FTM, 2020). These publishers have both chosen to not distribute their news in a physical newspaper and focus on their digital platform. These platforms have chosen an ad-free platform, as they want to be independent. This model has turned out to be a success, de Correspondent is now the third biggest member-based news platform in the world (Majid, 2021).

De Volkskrant balances between these two types of platforms, offering the latest news as quickly as possible, but being famous for in-depth research articles as well. This offers challenges for the development to fulfilling these different goals within one platform.

A concept that has tried to combine the possibility for a quick update with their larger articles is the Economist, as they produce a lot of articles. They wanted to facilitate the need for an update in a simple manner. They came up with the Economist Espresso, a service that offers a reader the five most important news articles in the morning every day. This could also be used as a subscription on its own. A concept that also tackles the challenge of the overload that readers experience through all news platforms currently (Zhou, 2021).

Tech companies in journalism

Within journalism, there is also a rise of companies that just work as a platform and that do not produce any news. Large tech companies such as Google and Facebook have been investing in their news platforms as well as other journalistic companies (Statt, 2021). The Google News Initiative, currently already offers a personalised platform for news from other media. Smaller tech companies are trying to build their platforms like this. In the Netherlands Blendle started working on a personalised platform in

2013, combining different newspapers on one platform. Their business model to sell separate articles did not work out and their subscription model afterwards has also not helped them succeed. It has been sold to a Danish company and is now focusing on spoken articles.

The final interesting example is the rise of individual publishing. The Substack platform allows journalists to individually build their networks of subscribers. This is also a reaction to the low salaries a lot of journalists receive and starting to become independent from ads (Best, 2017).

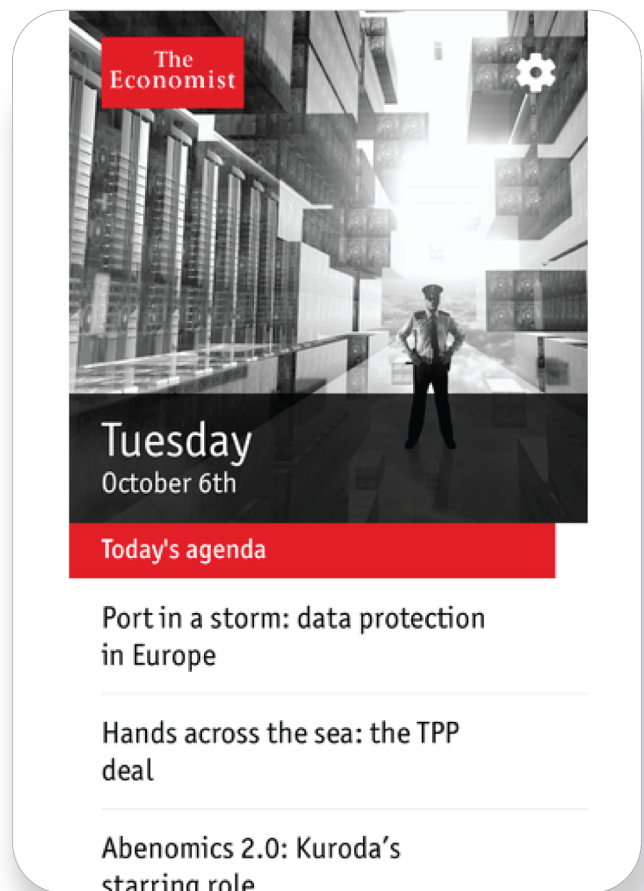


Figure 5: A screenshot from the Economist Espresso App

Data in journalism

2.3

As the tech companies get involved in journalism, journalism itself is getting into data. The use of data has opened new opportunities for both writing news and publishing the news. For the writing, it starts as simple as the search engine, or online translator a journalist uses. Currently, data use is a field that is very much in development, the most relevant practices for creating news are split up into two ways: using data to write your stories by visualising or fact-checking it and using data to learn from how previous articles have been received.

Data journalism is among the largest trends in journalism (Newman, 2021), the pandemic has proven the importance of numbers and the need for objectivity that comes with it. Numbers can help prove the point of a source and be used to battle the fake news that is often

also spread. After an article has been published, data can be collected from the readers. How many people have read it and did they read it in full? This data could help journalists learn from previous articles.

Data offers new possibilities for publishing. The most important possibility it brings to this project is the rise of personalisation in journalism. Personalisation is one of the biggest trends in journalism as found in the 'Journalism, Media and Technology of 2021' report by the Reuters Institute (Newman, 2021), which indicates that 69% of their participants (234 Digital News Leaders from 43 countries) believe that AI producing these personalised experiences and assist producing work will impact journalism the most in the next 5 years (Newman, 2021).

New responsibilities

2.4

The rise of data use in journalism and the involvement of tech companies creates new risks. Journalism has been globally facing a growing lack of trust (Fink, 2018), and while the trust in the Dutch press is still relatively high (Hofstede, 2020) it is something to treat with care. While newspapers and news platforms in the Netherlands stick to the journalistic code (NVJ, 2022), individual journalists on Substack don't have to. The other side is that the persons behind the article are increasingly important for trusting the news. For example, Maarten Keulemans (science journalist at de Volkskrant) has become a trusted face for all news on the coronavirus. A study by R. Moran et al. (2022) states that not just the news that is written influences this feeling of trust, also the process of publishing is involved in this.

When adding something like personalisation to a news platform, the company has an 'algorithmic accountability' as defined by Nicholas Diakopoulos (2014) In his. In later studies, he proposed transparency as one of the best solutions for this. Two obstacles have to be overcome to reach this: the current lack of business incentive to disclose how the algorithms work and the concern of overwhelming readers with complex algorithms. To take the first step to creating transparent communication multiple stakeholders within the company should be involved, not just the data team. (Diakopoulos & Koliska, 2016)

Conclusion

2.5

The continuous developments that come with digitisation demand new activities from a company like de Volkskrant. Within this organisation it demands a stronger collaboration between the editorial team and the publishing department, and towards the readers it demands transparency about what the objectives and functionality of algorithms in a personalised news platform would be. For de Volkskrant user research and the possibilities of personalisation should show how a personalised news service could help de Volkskrant define its place in the digital age.



Personalisation

3

Discovering the possibilities of personalisation

'Personalisation is a segmented form of communication that sends different recipients different messages tailored to their individual preferences.'

(Postma and Brokke, 2001)

Personalisation is a way to communicate to an individual's preferences, Google maps uses it to tell where the closest pizzeria is and Spotify uses it to offer you artists that fit your taste of music. Personalisation has become part of our digital society. Within journalism in The Netherlands personalisation

is still relatively new, and this chapter dives into the definition and possibilities of personalisation and what relevant examples already exist. What has been written about the use of personalisation for journalism and in what ways could personalisation help de Volkskrant to create a better news experience for their readers?

Defining personalisation

Personalisation started as a marketing and e-commerce tool. Marketeers found out that when you would adapt an offer to an individual's liking, it created a higher chance of a potential client to buy your product. At that time in research the following definition was defined (Postma and Brokke, 2002):

“Personalisation is a segmented form of communication that sends different recipients different messages tailored to their individual preferences.”

Personalisation comes in many different forms. It can start as simple as engraving a buyer's name into a ring, to a shopping website that knows the buyer likes red products and sends them an email with the latest red items. In this project the focus is on digital forms of personalisation. This section describes the academic research done into it. How can personalisation be categorised and how does a personalisation algorithm work?

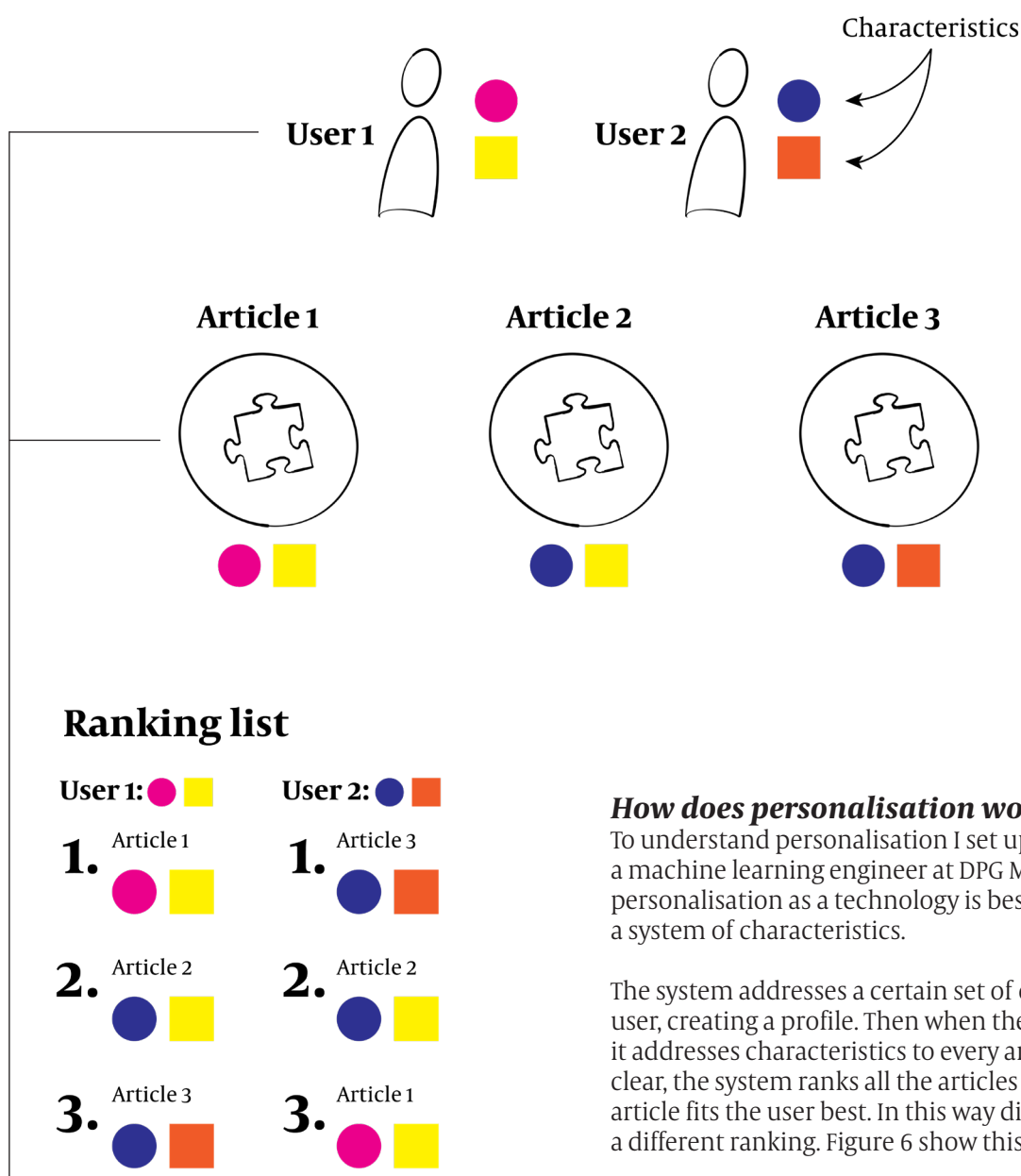


Figure 6: Basic personalisation explained

How does personalisation work?

To understand personalisation I set up a meeting with a machine learning engineer at DPG Media. In short personalisation as a technology is best described through a system of characteristics.

The system addresses a certain set of characteristics to a user, creating a profile. Then when the articles come in, it addresses characteristics to every article. When this is clear, the system ranks all the articles and decides which article fits the user best. In this way different users can get a different ranking. Figure 6 show this more visually.

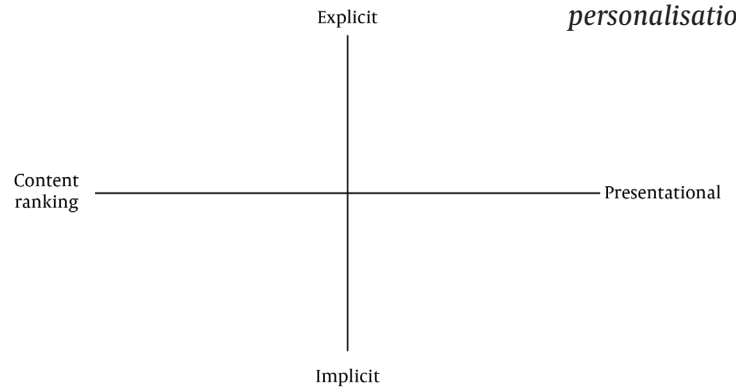
Categorising digital personalisation

Personalisation can be categorised in two ways: The first is the way it influences a platform. It could do two things, it could affect the presentation of the content or it could influence the ranking of the content (Mattis, 2021). When it affects the presentation of the content, it could for example show different images for the same articles to different people.

When it influences the ranking of the system it creates the order of articles that the reader sees. The article that fits the reader best comes first, the one that fits the reader least comes last.

The second way that I distinguish all types of personalisation is based on the way a personalisation algorithm gets its information. The distinction is between explicit and implicit personalisation (Fan, 2006). Active personalisation is personalisation that demands from the user to actively communicate what he/she likes. This is often done through following certain writers for example. Passive personalisation does not demand this

Figure 7: The categorisation of personalisation



input, it collects the input through the behaviour in the past. This is often seen in discovery modes, like the one on Instagram. It is important to note that it happens often that it is combined, so both active and passive personalisation are used throughout.

Content diversity

Generating news diversity is one of the biggest concerns in personalisation, as mentioned in the previous chapter personalisation is often linked to the idea of echo chambers or rabbit holes. That is why a lot of studies have gone into displaying news diversity for personalised journalism. A study by Mattis (et al., 2021) displays the possibilities for in the figure (8) on the right. The possibilities for personalisation in the news were categorised in the following were categorised by algorithmic and presentation nudges. These are linked to respectively content ranking personalisation and presentational personalisation. This shows how readers

get to the diversity of news they read everyday, this means the set of articles that eventually reaches the reader.

It all starts with the supply diversity, which in this case would be the total number of articles, podcasts and other media of de Volkskrant. After selecting the most relevant ones for the homefeed there is the exposure diversity, that is the set of articles etc. that is shown to the reader, so what shows up at the home page or pages that the reader opens. The final stage is the consumption diversity, which is the set of articles that the reader opens.

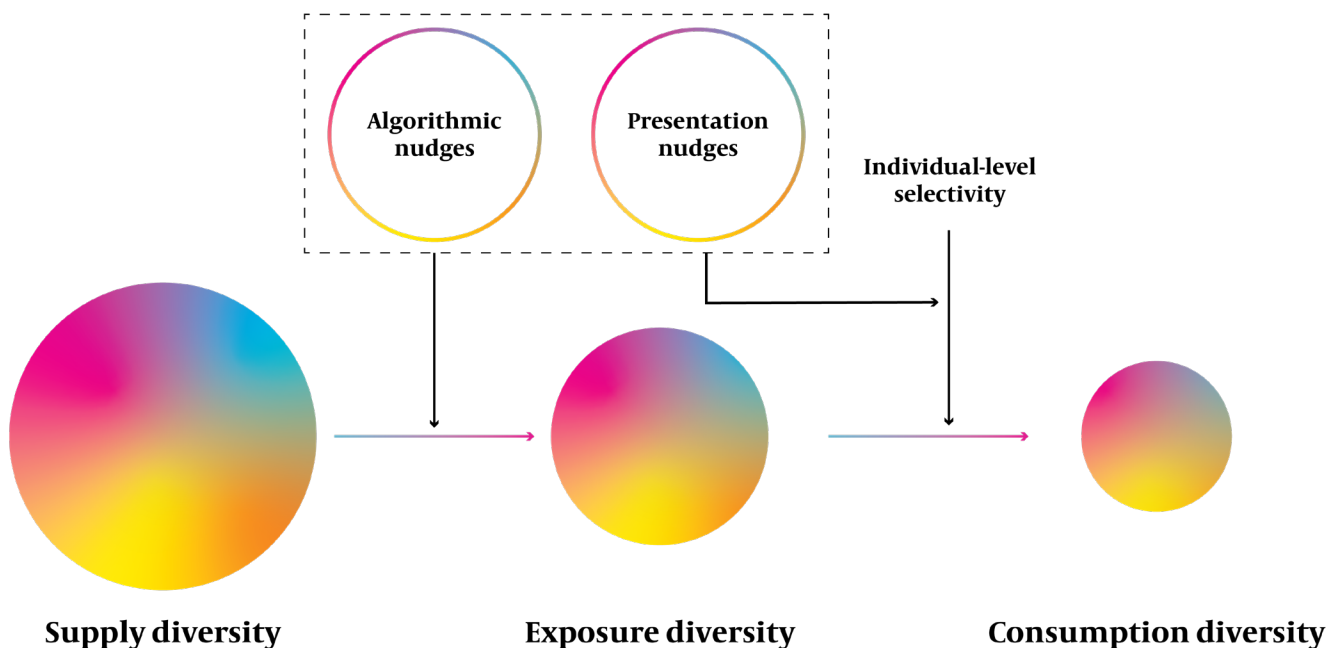


Figure 8: The diversity influenced by two types of nudges as defined by Mattis et al. (2021)

In this process personalisation can intervene at two moments. Between the supply diversity and exposure diversity an ‘algorithmic nudge’ can decide what content appears on the top based on the personal preferences of the individual (Mattis, 2021). The second moment that personalisation could impact the diversity of news that reaches the reader is a presentational nudge. This is personalisation that presents the articles in a way that is tailored to the individual’s preferences. For example by showing it with a type of picture that it predicts that the individual will like or highlight the text of one of the articles to nudge someone toward a specific choice.

In order to define the diversity that a recommender system can provide it is good to start with assessing different types of recommender systems and their effect on this diversity. In 2018 a study was performed that used de Volkskrant as a test case for such a study (Möller, 2018). It used 500 respondents to test three different approaches towards recommender systems:

General popularity of the item among all users

The best read articles.

Semantic filtering.

This approach recommends items that match the currently used item or previously used by the same user.

Collaborative filtering

Items are recommended to a user based upon values assigned by other people with similar taste.

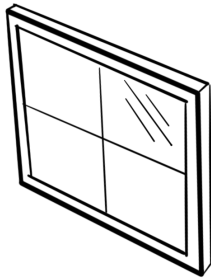
The test was done in a way that the semantic and collaborative filtering was done in two ways, an item-to-item way (so what matches this specific article or readers who liked this, also liked) and in a way that took the history of the user into account, this is personalisation.

The study (Möller, 2018) showed that the recommendation systems did not differ much in diversity from the recommendations a journalist would have done. Next to that it demonstrated that the recommendations with the history in the account were more likely to be clicked. The personalised recommender systems did not reduce in diversity from the non personalised recommender systems, the personalised collaborative filtering even produced the most diverse set of recommendations. Other studies (Bernstein et al., 2021) have proposed similar concepts, they combined semantic and collaborative filtering with an algorithm that recommends the latest content and got similar results on diversity.

The mixing of different algorithms throughout is a common proposal, as it is a feasible way to develop such an algorithm in the coming years. A more conceptual take is done by researchers in America, they propose a recommender system that works like a table d’hôte (Abdollahpouri, 2021). A table d’hôte is a sequence of courses that creates a balanced and pleasant food experience. News should be the same according to them. The way to achieve this is to always deliver a variety of surveillance, the information that a reader needs to know and serendipity, the articles offering unexpected surprises.

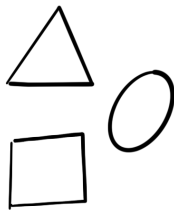
When I sent my motivation letter to DPG Media for my graduation project, the reaction was immediately enthusiastic. DPG Media has been working on personalisation for the past years, to see in what way it can strengthen their business and improve the user experience. The latest user-oriented study DPG Media (2021) performed into personalisation was at the start of 2021. Through Whatsapp they sent out surveys for 5 days in a row to 17 participants of which 6 Volkskrant subscribers. In this study they looked for the perception and opinions of personalisation among subscribers.

The study aimed to define what personalisation is for the readers, how they perceive it and what they would want it to look like. The most interesting insights were captured in three terms: transparency, diversity and autonomy.



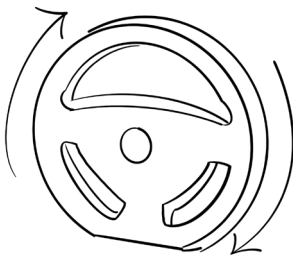
Transparency

Transparency was of high importance to all participants, it allows the readers to trust the personalisation mechanism. The examples in research like ‘aangeraden op basis van je leesgedrag’ (recommended to you based on your reading behaviour), were clear enough.



Diversity

In the test they tested proposing recommendations of other news titles, these were appreciated by the readers. This could help broaden their vision and offer new insights.



Autonomy

Readers would want general news above personalised news in order to prevent the filter bubbles. Most readers are not afraid of their own bubble, but fear for others and see it as a societal problem. Putting general news above personalised news offers them the decision to look at it or not.

Readers want to be in total control when using a personalised news service, but an on/off-button would already be sufficient for that. Too many possibilities for control would feel overwhelming and demand too much time and effort.

Relevant features

Further important insights from this research were in two features that users appreciated when implementing personalisation. The first is the possibility that an app tells you what is most important since your last visit.

The second feature is user-driven personalisation. This type of personalisation suggests content based on users that have a similar profile to you. Readers trusted it better and felt more comfortable with this type of personalisation.

What do we see elsewhere?

For de Volkskrant personalisation is completely new, but competitors have already started implementing the first personalisation mechanisms. In this section I will show these competitors, and also the pioneers of personalisation. These examples function as inspiration for the design process, and help in explaining the theories in the previous section.

Pioneers: outside of journalism

Spotify

Spotify is the master of personalisation. The music-streaming platform sees discovery as its main business. The focus in Spotify is on Content Ranking recommender systems. Within Spotify multiple recommender systems help users find new music, 'Discover Weekly' is the most famous and relevant example. Spotify creates a playlist for every user, every week with 30 songs that might be of interest to the user. It does this based on both explicit and implicit personalisation. The explicit personalisation is clear, in Spotify users are able to follow their favourite artists and these will very likely be featured in this list when they publish new music.

The passive personalisation is what they are famous for, it is user-driven. User-driven is a term that is used for an algorithm that analyses the data of a user to create a profile and compares that profile to profiles of

other users in order to decide on the right suggestions for a user. In Spotify's cast this means that if two users both listen to Nile Rodgers and one also likes Earth, Wind and Fire. The second user is likely to like Earth, Wind and Fire too. Spotify looks for music that they listen to that a user has not heard yet. In this way it is expected that a user will like the recommendations, because people with the same taste in music like it too.

Goal

Spotify measures its goals in the amount of new music and artists users discover, that is the main target of the discovery-business. Spotify believes that a lot of platforms are capable of streaming music, but this is the way to offer something unique to their user. It creates value in their product.

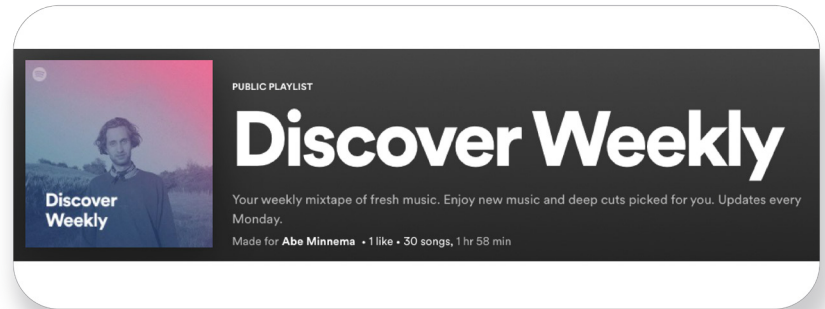


Figure 9: A screenshot from my Spotify Discover Weekly playlist

Netflix

Netflix also uses personalisation algorithms to do their content ranking and see what movie or series suits you as a consumer. What is very different from other examples is their specialty in personalising the presentation of their service. They do this in many ways, showing certain types of trailers or even changing the layout of the homefeed, but the best way to explain it is the thumbnails they use.

All popular series or movies that are available on Netflix have a set of different thumbnails. Netflix uses passive personalisation to pick which one might fit you the best. As seen

in Figure 10 Stranger Things has nine different options. If you always click on thumbnails that are dark, Netflix will most likely pick the first or last image for you.

Goal

Netflix is aware of the influence of thumbnails, that is why they deeply research what works best. They are afraid that if a user takes too long to pick a movie, they might leave and do something else. That is why every movie needs to be as attractive as possible.

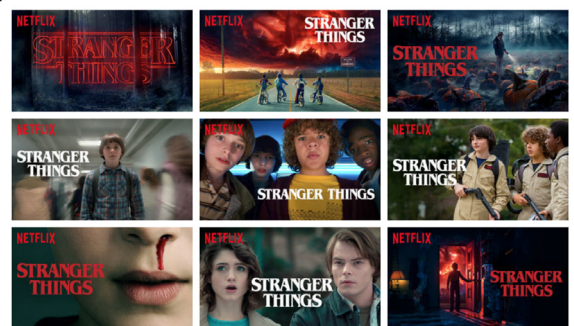


Figure 10: Nine different cover images for Stranger Things

Tech-companies experimenting in media

Google News Initiative

Google News Initiative is Google's entrance in journalism. Google emailed me in October with their personalisation offer, they propose three possibilities which all three are relevant for the possibilities for my project.

Nieuws voor jou

News for you - a recommender system by Google that uses passive personalisation. They recommend the user news based on their previous behaviour, Google collects a lot of a user's history so it is unclear to me where they get this information from and how they define what is relevant for me.

Goal

This is what Google sees as the future of news, a social-media like platform that is focused on news and shows all kinds of different sources based on your preferences and needs. In this way they try to get all traffic through Google and they can collect this data and influence what people see.



Nieuws voor jou

Volg bronnen en interessegebieden waarvoor je belangstelling hebt en bekijk er meer artikelen over in 'Voor jou'.



Je lokale nieuws

Blijf beter op de hoogte van wat er in de community's gebeurt die je volgt.



Het hele verhaal

Krijg een completer beeld van nieuwsonderwerpen uit verschillende bronnen met 'Hele verhaal'.

Je lokale nieuws

The second relevant feature was 'Your local news' it keeps the user up-to-date about the latest news in the location that a user follows or is currently at.

Goal

This has the same goal as the previous part, it is a useful way to see what is happening in the neighbourhood.

Het hele verhaal

The third is the most interesting 'The whole story'. It shows one topic or event with multiple stories from different media. In this way it combines perspectives and gives better insight into events.

Goal

This is a new way to do research in an easier way. This is a unique selling point towards other media.

Figure 11: A screenshot from a mail Google sent me

Crux - The Financial Times

Crux is a start-up that is implementing gamification in journalism. The most famous example is in The Financial Times. This is an example of passive personalisation and is a way of content ranking. It offers the reader

the knowledge tracker immediately after the first article.

The image as seen on the right appears at the bottom of an article, it shows the 'Knowledge Tracker'. The tracker shows the amount of points

the user has collected in a certain topic. If the user wants more points he can click on one of the three options to dive deeper into the topic. This stimulates them to continue to read.

Goal

This gamification tool serves the goal to let users read more articles and to convert them into subscribers. The articles that give the most point are always premium-articles and demand the user to pay to continue. It is a solution that fits The Financial Times well, in the financial world it is valuable to be totally up-to-date and people also feel the pressure to work on that. This tool triggers that emotion.

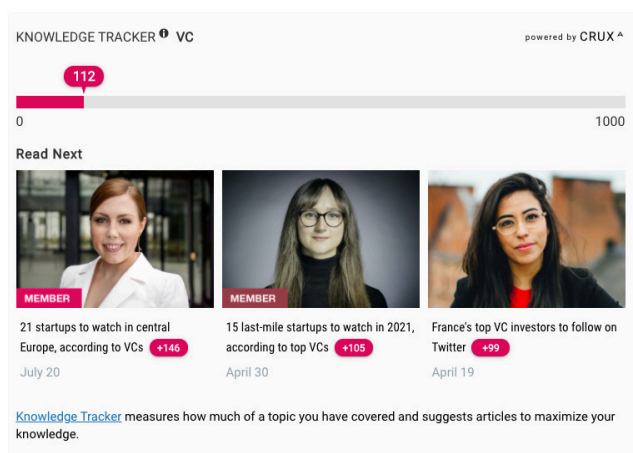


Figure 12: A screenshot from the Knowledge Tracket of the Financial Times

Newspapers

The New York Times

The New York Times is the pioneer in digital journalism. They have a digital-first mindset of working, meaning that they think about where an article shows up in the app before it shows up. This also comes from the fact that The NYT has readers from all over the world. The New York Times has implemented certain types of personalisation in its applications.

Figure 13 shows the offer for their personalised newsletter (Owen, 2018). This direct point of contact is especially interesting, it serves a mix between curated and personalised news. A time of NYT Editors go through the articles of the past week and creates four selections:

The best productions of the past week
The news that users might have missed
Extra comments on the news by interesting thinkers
Highlights from lighter news

After this collection is created an algorithm decides what goes to which subscriber. The final selection is done through personalisation. This combination of human curation and personalisation is interesting as it fits a quality newspaper like the NYT and also de Volkskrant. Human curation is currently a valued asset, as an expert decides what is the most relevant news currently.

Goal

These personalised newsletters are an extra value to all subscribers, improving loyalty and giving an extra reason to subscribe. It adds an extra layer of selectivity to the curation in the form of personalisation. So that the newsletter will not be an overload.

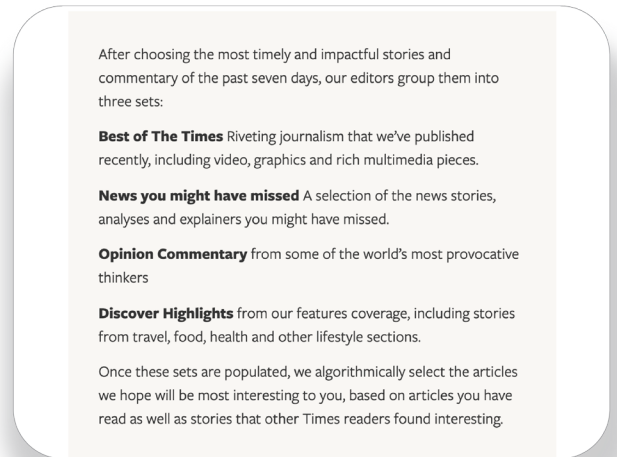


Figure 13: A screenshot from the New York Times

NRC

NRC is de Volkskrant's most important competitor in the Netherlands. In the field of personalisation it is further developed than de Volkskrant. NRC allows users to follow their favourite subjects, columns and journalists.

NRC allows users to create a reading list, with articles they want to save for later. This can also happen in collections, in this way a user can save all his/her favourite 'weather'-articles for example. NRC allows users to find their reading history, so it is easier to find an article that he/she has read before.

Goal

These simple, but effective personalisation methods offer an extra advantage for NRC. It allows the user to stay up-to-date with his favourite topics.



Figure 14: A screenshot from NRC app

Conclusion

The examples from the previous pages are combined in the quadrant proposed at the beginning of this chapter, shown in figure 15. Within this quadrant it is clear that Netflix is the only presentational example mentioned.

The other examples are within the content ranking. The combination of implicit and explicit ranking in Spotify and Google News Initiative are more advanced examples of how personalisation can work. The Spotify example has proven to work very well for the discovery of new music

and offers control to the user, while also saving the user time to find new songs and artists.

The current personalisation of NRC is still very much in the early stages, offering the possibility to follow journalists and themes and offer this as a chronological overview in a new feed. These could be valuable functions for my project as well.

The personalised newsletter of the New York Times is my favourite example. It combines implicit and explicit personalisation, but what makes it interesting is that

the first selection of articles is done by journalists and the final selection afterwards by an algorithm. Combining journalistic and algorithmic efforts.

The fully implicit personalisation of the Financial Times is an interesting addition to the suggestions after the articles. The combination of personalisation and gamification seduces the reader to get a subscription or read more articles. While this is interesting it does not seem like a good fit for this project as it is almost purely focused on commercial targets.

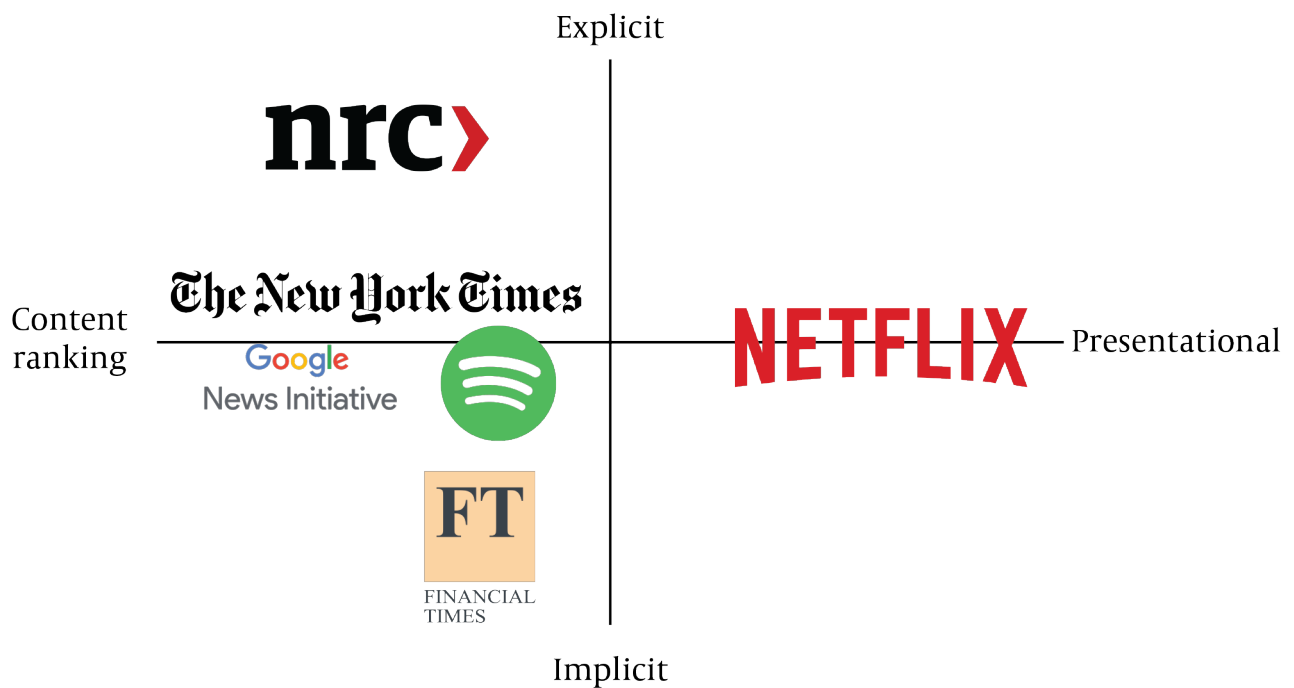
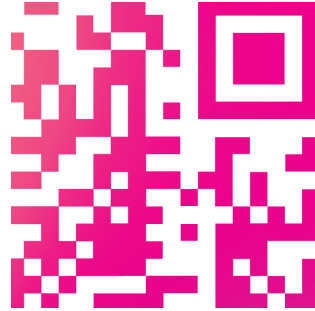


Figure 15: The examples placed on the axes of personalisation

Conclusion

This chapter has explained different types of personalisation: presentational and content ranking personalisation. For my project the content ranking is best fit for my design challenge to use personalisation to offer the readers of de Volkskrant a diverse set of news. The chapter has also shown ways to combine multiple types of algorithms to allow for a diverse selection of news. Also the input of data through implicit and explicit collection was discussed, these could both be useful for my project.

Next to diversity, DPG Media also defined transparency and autonomy as key characteristics for valuable personalisation. These should also be taken into account for the design brief. In the examples was shown what different kinds of goals personalisation can reach. Within the next chapters, the reader needs and the opportunities for the current product are discussed. For the design brief I'll define which problems could be solved through personalisation.



The readers 4

of de Volkskrant

The previous chapters have given an overview of the current state of innovation in journalism and the possibilities of personalisation. Now it is time to examine the needs of the users of de Volkskrant. Through earlier studies by DPG Media, studies of other mediums into the needs of

newsreaders and five explorative user interviews, I will explore and define the most important needs of the readers of de Volkskrant and what they need from the current digital products of de Volkskrant. These insights form the foundation for my problem statement. The final section

describes an exploration of the current perception that these readers have about personalisation. The current perception can guide me in defining what personalisation could mean for these users and what their requirements are for implementing personalisation for de Volkskrant.

For this project, I have chosen to focus on current readers and subscribers of de Volkskrant. I chose this because they will be the first to be using personalisation when it will be implemented in the digital services of de Volkskrant.

De Volkskrant currently has 335.000 subscribers (51% print, 33% hybrid (print & digital), and 16% digital) (Bron DPG, 2021). Figure 16 shows that the average age for the website and mobile website is 44, for the app this is 53. Half of the users have an education of HBO or higher.

DPG Media has performed a study to define the basic information on their current digital readers. What is most interesting for my project is that 79 per cent of the digital readers never read the paper Volkskrant, and 88 per cent of digital readers read the physical newspaper less than once a week. This shows that the digital services are rarely used in combination with the physical newspaper and serve a different target group.

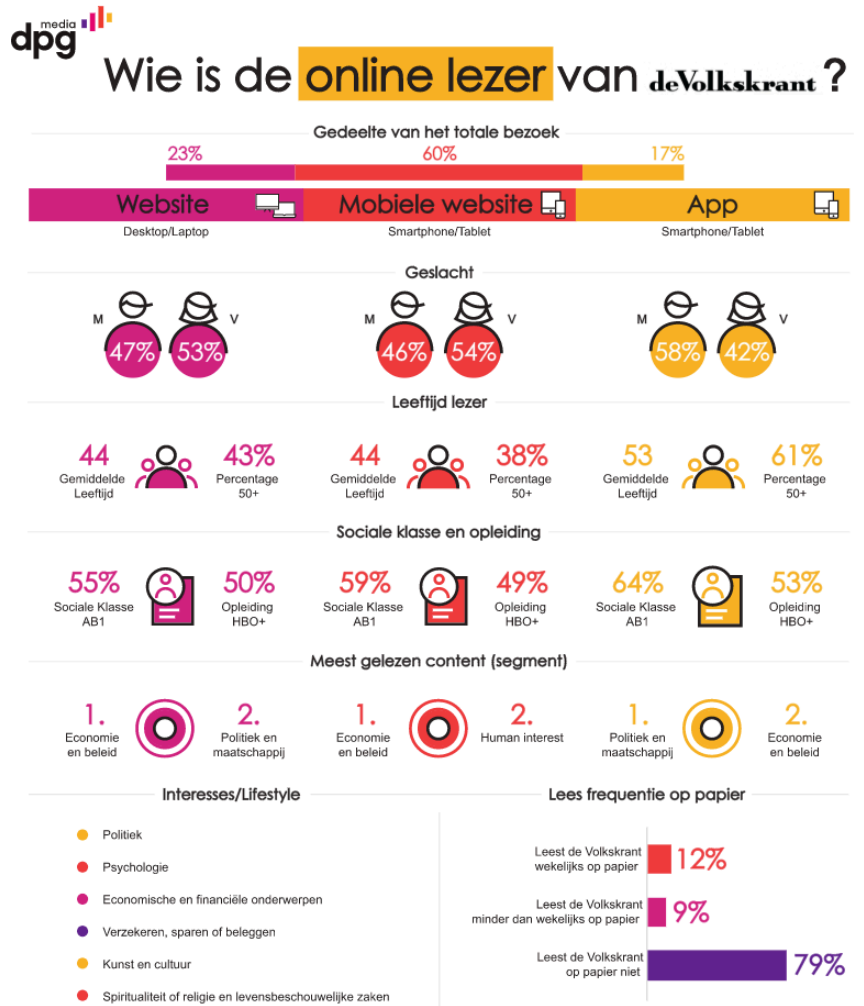


Figure 16: The journalist profile

Mediaprofielen binnen Mentality

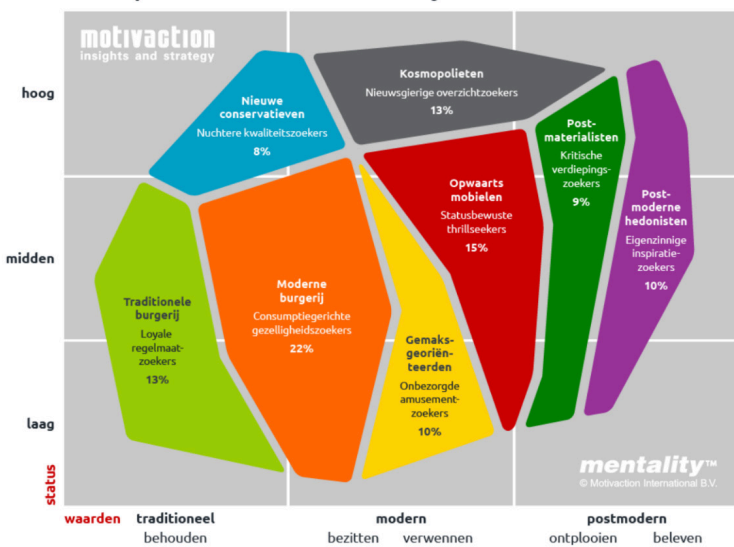


Figure 17: The journalist profile

To describe the readers of de Volkskrant more in depth the mediaprofiles by Motivation are used (Motivation, 2021). Motivation defined a set that they plotted on two scales: Status (from low to high) and values (traditional, modern, or postmodern). The UX-team at DPG Media has defined two profiles that fit the description of the readers of de Volkskrant very well: curious overviewseekers and critical deepeningseekers.

These profiles paint a picture of a persona's needs and rituals concerning the news. Curious overviewseekers think it is important to stay up-to-date and have access to objective journalism. That is why they have a subscription to a quality newspaper, that they read both physically and digitally. They also like podcasts, but think there is way too much choice wso they listen to recommendations by friends.

The critical deepeningseekers are more traditional, they prefer the news on paper. They do have a paid subscription to de Correspondent, for surprising and deepening content. They highly prioritise honest and good quality information. That is why they use different sources: Radio 1, podcasts and when away from home also use the Volkskrant- and NOS-app.

Reader needs

Theory

In order to create a better understanding of what readers want to read, the past few years a few large news companies have done research into their reader's needs. Two of these models are relevant for my project. These needs are defined based on the journalistic content of newspapers like de Volkskrant. Later in this section I will also discuss the needs of the platform the articles are shared on.

The first reader needs model is by Dimitry Shishkin (Woudstra, 2020), he has identified six user needs for the users of BBC (see figure 18). These needs are used to measure what type of articles are in demand for the readers of the BBC. Using these insights the journalists can write their new articles for a certain need. The needs are also used between journalists to present their new article ideas. By doing this the chief of an editorial team can compose a well-balanced news offer, addressing multiple user needs. It allows the journalists to work more user-centred.

The user needs as defined by Shishkin are:

Update me: The most basic user need. It fits the traditional format that newsrooms use for their news articles. So called 'hard' stories, no analysis, just the report of a certain event.

Keep me on trend: These articles are focused on what people are saying about the topics of the news. What do people need to feel about something that has happened? A collection of interesting reactions to news events.

Educate me: These articles help the reader learn new things. They serve readers that want to understand what happened and why it happened.

Give me perspective: These articles help readers to form their opinions. These articles often pull experts into the conversation. These articles help readers to engage in the conversations about the topics described.

Inspire me: This is a user need that looks for a good feeling. These articles are written from a solution and not from a problem. These articles work well with a younger target group.

Divert me: These articles are meant to surprise the reader and bring a smile to their face. It is a softer kind of article in between all the 'hard news'. It can function to lighten the total overview of news.

These needs are now largely incorporated into the ways of working in newsrooms around the world. Different companies have started to form their own user needs for their own title. Another interesting example was created by the Atlantic (Goligolski, 2022). The Atlantic has defined their needs for both reading and listening, the needs that they have found were:

Give me deeper clarity and context, users look for an understanding of what they have read.

Help me discover new ideas, this is about finding new areas of interest. The feeling of being surprised. Challenge my assumptions, users of the Atlantic services are not just looking for one perspective but are willing to read factual proof that they might be wrong.

Let me take a meaningful break, users don't want mindless content for when they are on their phone. They want a break in which they learn something.

Introduce me to writers at the top of their craft: users are looking for journalists that offer a higher level of articles than they find elsewhere.

The Atlantic uses them as inspirational goals for their digital news services. The needs are a well-defined list of goals to work towards as a newsroom and as a designer for a newsroom. Readers do not want to just see the latest news when they open the app. They look for different facets of journalism. The presentation of the articles on a website or app is the key to fulfilling these needs at the right moment for the user. Both the needs model of the BBC and the Atlantic mention the balance between fulfilling these needs, if one need is focused on too much the others will not be able to be fulfilled.

For de Volkskrant every article is now labelled with the need that it should fulfil for a user. A new study at DPG Media (2021) shows three graphs: the amount of articles published per need and the average reading quality per need. The reading quality is a quantified measure used by DPG Media to assess how much a reader appreciates an article, a part of this assessment if readers finish reading the article. The bar chart can be found in the appendix 12. The results of this study showed that the focus is currently on the 'update me' and 'give me context' articles, while these are not the highest valued articles. Hard conclusions can not yet be pulled from the data, as you can not write too many 'touch me' articles for example (then they will lose their effect). It does demonstrate though that it is good to experiment with a higher diversity in needs, to see how it affects reading quality.

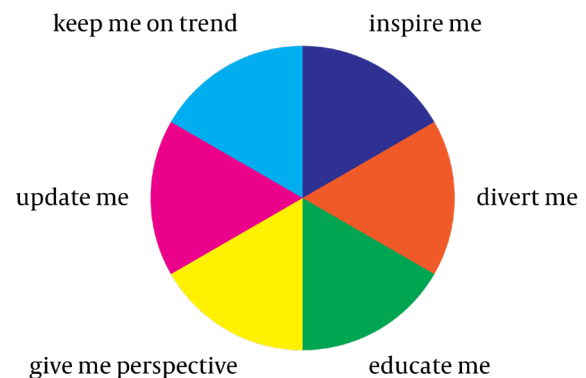


Figure 18:
The reader needs by Shishkin

Interviews

To study the needs for the readers of de Volkskrant I conducted five explorative user interviews. The participants (four female and one male interviewee, aged between 24-58) were all news consumers, who read or watch the news every day. The complete interview guide is found in appendix 12, as well as a more extensive overview of the outcome of the interviews.

The interviews were split in two parts, The first part of the interviews focused on the reason the readers chose de Volkskrant, why they read the news and the news rituals of the participants. The second part of the interviews examines the perception of personalisation. In this section the first part will be described. The interviews helped me deepen the understanding of the reader needs and create an image of how readers currently perceive personalisation, the results are not representative for all readers of de Volkskrant.

News-based needs

The first part of the interview focused on a user's news consumption: why do they read the news, what sources do they use and what more would they need for their news consumption? Through these questions I have tried to define their needs expressed. The needs that were named by the readers were categorised into the following:

Staying up-to-date: all of the interviewees thought it was important to be up-to-date with the news and knowing what is up with the world. They all see it as a must for themselves and one even has trouble with people that don't do it.

"I think it is important to stay up-to-date, I think I should be informed. I can also get annoyed by people who are not well-read at all."

- Multi-newspaper subscriber (58 years old)

This combines the needs 'update me' and 'keep me on trend' from the Shishkin model. This need is fulfilled all throughout the day when quickly scrolling through their phones for a maximum of 20 minutes. Often other sources like NOS or Nu.nl were also used for this need.

Creating a better understanding of the world. The readers mentioned often that de Volkskrant is a great source for fulfilling this news, describing it as quality journalism that

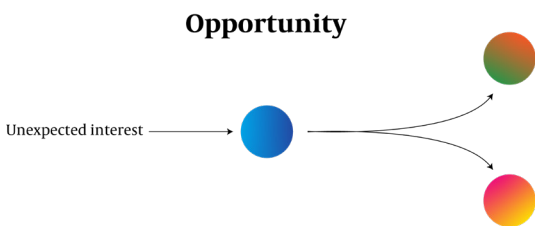


Figure 19:
The opportunity after an article

Figure 20:
The reader needs as identified by in the interviews

always looks at multiple sides of the story and takes the time to do research for their background stories.

"I prefer reading de Volkskrant for in depth articles and when I want to get to know more about something."

- Multi-media newspaper subscriber (23 years old)

This need contains parts of the Educate me, Give me perspective and the Inspire me needs. This is a need that the participants really associated with de Volkskrant and praised it for. This need was often fulfilled in longer sessions (20 minutes plus) in the train or when they sit down at home to take time to read the news.

Being surprised and amused by the newspaper, with novelty or fun facts. Music and theatre reviews were mentioned as parts that were consistently read every week, to discover new things. Also the magazine was mentioned for this, for always showing stories that otherwise would have never crossed the path of the reader.

"I do always really like the music reviews and then I always immediately check it on spotify."

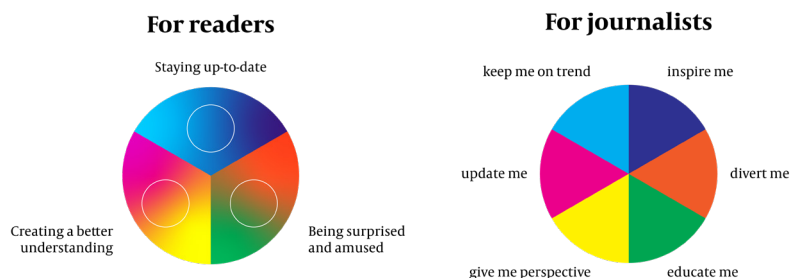
- Digital news fanatic (54 years old)

This need combines parts of the 'Inspire me' and 'Divert me' needs. This could happen at any given time and could sometimes be very short or be an in depth article with an inspiring person.

Insights

Within these three needs the needs as described by Shishkin can be found, it is not as split as stated above. These three needs are not meant to replace the needs as defined by Shishkin, but helped me analyse the user needs in the context of the participants. Figure 20 is a visual of this analysis. What was notable was that the participants tended to describe their needs by activities. Updating themselves happened all throughout the day. For longer reads they had specific moments planned, like in the train, or during breakfast. The final 'surprise and amuse' category could happen during a quick update session, but also happened often during relaxing moments.

The favourite moments that were described were moments of unexpected interest, they started reading in an update me-form and landed in another need, when they found something inspiring, interesting or amusing. This was greatly appreciated and can be linked to the need for serendipity as earlier mentioned in the report. Finding a way to facilitate these moments of unexpected interest could be a great opportunity for de Volkskrant.



To create an understanding of the current view that readers have on personalisation, the interview also contained questions on this topic. All participants knew personalisation from platforms like Spotify or Facebook. When asked to describe personalisation, a participant said:

“Personalisation is when an app or website adapts itself to your own preferences, without you filling in what you like.”

- Digital news checker (24 years old)

Although correct, it seems that users associate personalisation only with passive personalisation. Readers expect personalisation to read data and in that way figure out the preferences for that specific reader. In a lot of cases they are quite pleased with it:

“I can imagine it being comfortable when personalisation fills in what I like for me and I can just use the app.”

- Digital news fanatic (54 years old)

The most described advantage of personalisation is the ease of use that it could offer: it takes away some of the effort a user would normally invest to find and define his own preferences. The biggest disadvantage users mention is the discomfort it could cause when the personalisation goes wrong. That is why a wish for turning it on and off is mentioned. The reason behind this is defined in three different factors:

Discomfort from the past:

“Sometimes when I use Instagram I am caught in a filter bubble that I don’t like and I just see the same thing over and over and I don’t know how to get out of that, I really dislike that.”

- Digital news fanatic (25 years old)

Fear of not being able find the articles you look for

“I would be afraid that the algorithm would make decisions for you and that if you want something else you can not find it.”

- Multi-media newspaper subscriber (23 years old)

Personalisation could limit the broadness of the news you see and therefore limiting your worldview

“I want to see what I don’t choose to read. You should be as broadly informed as possible.”

- Multi-newspaper subscriber (58 years old)

What could help to solve these problems on the user side can be split up in control and transparency. For the control, this could be both upfront as after an algorithm has decided what the user gets to see:

“I would like to follow certain themes or people in the news, but you kind of have it right. You can click yourself on certain topics. At the NRC I got pop-ups for certain subjects or news about certain countries; I like that.”

- Digital news fanatic (25 years old)

Or when an algorithm has made decisions that do not fit the needs, it could also be controlled or be turned on and off in the settings.

“I would like a combination of an algorithm that knows what I like, but it would also be nice if you would still be in control. To turn things on and off, so that you don’t feel limited.”

- Digital news fanatic (54 years old)

To do this also transparency is asked, it is important to define why someone sees what they see?

“I would be afraid that you don’t notice that you miss things, because you don’t know on what basis you miss things.”

- Digital news checker (24 years old)

This transparency could help with the feeling of not missing out on important things.

The six reader needs by Shishkin can also be used for de Volkskrant. The needs were in a simplified version mentioned by the readers in the interviews. Currently the focus is too much on the 'update me' articles, for my project I want to focus on facilitating the other needs in a more accessible way for the users.

The interviews showed that the reader needs are related to certain reading rituals, such as a moment to dive deeper into a topic in the train. These activities should be facilitated by the platform and the next chapter will go into this topic. A special opportunity lies in the activity of unexpected interest, when the user opens the app or website and they dive into something that catches their interest.

The perception of current personalisation was dual: readers recognised the comfort it could bring, but also expressed their fears. They felt like personalisation would take away the need to search for something and create a better user experience, but due to some negative experiences in the past some doubts were mentioned. To fix this concern I recognised two main themes: the need for control over the algorithm and transparency in what is personalised.



Driving change

5

at de Volkskrant and DPG Media

Creating and publishing quality journalism demands more than just good journalists. The other expertises that help create this news and the platforms that it is on are in a different part of the company. This chapter explores the current digital news distribution product, how it is created and in what ways different

teams at DPG Media and de Volkskrant are working on improving it for the future.

The goal of this chapter is to create an overview of the current product and to understand which teams need to get on board in order to create a personalised digital news service for

de Volkskrant and to see where in the current product the personalisation should take place. Through a product and company analysis, these answers should be answered. The chapter will also go into the company culture and the collaboration between the teams at de Volkskrant and DPG Media.

The current product offer at de Volkskrant

This graduation project aims to improve the way that the readers experience the journalism of de Volkskrant, through redesigning the current product and adding personalisation. The focus is to work with the content as it is produced today and not demand new types of articles from journalists. That is why this section dives into the current app.

Current product

My project focuses on the app of de Volkskrant. The current product designers always design the app first. The (mobile) websites are based on the design of the app. In this chapter I have made use of projects performed by the UXAD-groups of the DFI-master in the academic year 2020/2021. As described earlier, since 2018 de Volkskrant has a new app that makes use of the Selectives content and development platform. It is a digital foundation for the apps and websites of de Volkskrant het Parool, Trouw and a few other DPG Media titles. Every title has its own skin over it, but the digital core functions in the same way.

The core functionality of every Volkskrant news distribution product, be it apps, website, print paper or podcasts, is to provide the users with news. The first

application is the newspaper-app, it was introduced over 10 year ago and displays a digital pdf of the print newspaper. This app is not in development anymore and will slowly lose functionality in the coming period. The podcasts are available within the app and on all other streaming platforms, currently there are no subscriber-exclusive podcasts.

The app consists of five main tabs: Live, Edition, Best Read, Search and Service (see figure 21). These can be clicked on in a bar at the bottom of the app. Within this chapter the parts relevant for the project are described, all other product descriptions can be found in Appendix (8), alongside a functionality-hierarchy as created by group B2 of UXAD last year.

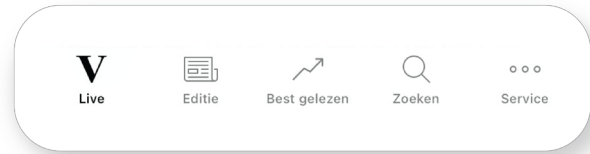


Figure 21: The navigation bar of the app of de Volkskrant



Figure 22: The current home feed of de Volkskrant app



Figure 23: The news list



Figure 24: The best read articles

Live page

The Live-page is the home feed of the app, this is what a user lands on when opening the app. The user can use this to scroll through the most important news. The list of news starts with 'het balkon', these are the two most important news items of the moment. Afterwards a newlist appears with ten news items, followed by a commercial, the top 3 best read articles and five highlighted articles in the style of 'het balkon'. On top of the home feed, it shows when the site was last updated and a highlighted column or special production (like a podcast).

The newlist, 'het balkon' and the highlighted articles are not in a chronological order. These items are curated by the sitemanager and news chief at de Volkskrant, these curators will be addressed later. After these articles, the online sections start. These are different from the standard sections in a newspaper.

Editie-page

The Editie-page is the second page of the app, it allows the user to have a (physical) newspaper-like experience. It offers the user two possibilities: the pdf of the newspaper of that day or a specially designed view with horizontal scroll bars (called swimlanes). These are the same as the sections in the physical newspaper. The Editie-page refreshes once a day, when the newspaper is finished in the morning.

When visiting user tests at DPG Media, I observed that the horizontal scroll bars often used by users to check if they have seen everything from that day. The fact that it is finite, offers overview to the reader.

Best Read-page

The Best Read-page, is a list of the articles that are best-read on the digital platforms of de Volkskrant currently. In user-interviews I observed that this feature has a social function as well. Users use this to get themselves up-to-date to discuss the news with their surroundings, it helps them to define relevance. During my interviews (from the previous chapter), one participant said:

“I think it is nice that you can see what is being popular, I use it every day.”

- Multi-media newspaper subscriber (23 years old)

Search and Service-page

The Search-page is currently very limited. It does not offer any possibilities to help a reader find what they are looking for and no search history. It is just the search bar. The Service-page is used for sending reviews to DPG Media or subscription settings.

Article-page

The content that de Volkskrant produces is best split up in three categories: written articles, podcasts and 'kijk verder'-productions. The Appendix (4) contains a full overview of these three types of content. This section describes the page of a written article.

De Volkskrant produces a wide range of written articles: short news articles, in depth background pieces and many columns and opinion pieces. All these items are presented in the same way, showing the type of article, intro, date, writer, title and picture before the text starts. In the left top corner it is possible to go back to the feed the user came from. In the right top corner there is the possibility to share the article on social media or through mail.

At the bottom of an article there are always three articles that are recommended after reading this article. These have to do with the subject of the article, or are mentioned in the article. Currently journalists pick these articles themselves.

Figure 25: The editie page in de Volkskrant app



Voorpagina



Figure 26: The article-page of the app



Figure 27: The suggestions at the bottom of the article-page

Perception of current product

In the previous chapter the needs show the reasons why the readers go to the app of de Volkskrant, this part describes how the platform fulfils these needs. This section describes the perception of the app of de Volkskrant, using the insights gained in these interviews.

Four of the five interviewees experience the current digital services as orderly and also quite nice working for normal daily use.

“I can see quite quickly what’s new and what I like. It is easy to use.”

- Digital news fanatic (54 years old)

The app also contains some functionalities that the interviewees use and perceive as nice:

“I think it is nice that you can see what is being popular, I use it every day.”

- Multi-media newspaper subscriber (23 years old)

“I really like the fact that you can read related articles at the bottom of an article, NRC does it as well. Clicking through articles that are older is something I do a lot.”

- Digital news fanatic (25 years old)

Finding an article that a reader saw in another place first is one of the problems that three of the readers faced, this happened in three ways, first of which was:

“I think de Volkskrant is quite orderly, but find it hard to find articles that are a bit older.”

- Digital news fanatic (25 years old)

The navigation to find what you have read in the past is difficult and there is no clear place to store or find these. Especially when trying to grasp difficult topics and looking for things that you have read about it before this is a problem. One of the interviewees proposed her analogue solution to this issue:

“If something is complex I tear it out and then I combine it with kept articles so that I can better understand the full picture and I can take more time for that.”

- Multi-newspaper subscriber (58 years old)

Another problem an interviewee mentioned was:

“... but I sometimes have the feeling that I cannot find the articles that I was looking for. I follow Sander Schimmelpenninck on Instagram and there I see that he has a new column. Then I click columns in the app and it is not there, because of this I have to use the search functionality.”

- Multi-media newspaper subscriber (23 years old)

When a reader expects a certain article in their feed and it is not there, this can be a frustration. Especially when it is a column or section that they read regularly. A solution that one interviewee proposed was:

“I always check the kiosk-version, then I can see what I have read in the morning, then I can find it again. Otherwise I cannot find it again. It is easier to find for me, through the composition and placement in the physical newspaper.”

- Digital news fanatic (54 years old)

Insights

The app of de Volkskrant fulfils the news needs quite well, checking the latest news is perceived as easy and the possibilities to see suggestions after an article are well appreciated. Finding specific topics or (older) articles is not well facilitated currently. The current app does not provide the overview to find such an article. This could both help facilitate someone’s reading habits and facilitate a better understanding of a topic.

Stakeholder analysis

DPG Media is a large media conglomerate, owning many newsbrands in the Netherlands, Belgium and Denmark. As its strategy is to continuously buy new companies and titles, the core of the activities is to on-board the titles that have been bought. Making sure that every title can still produce their content autonomously, but making sure all titles fit within the overall strategy of DPG Media.

De Volkskrant also fits within this structure. The digital platform it is on is the Selectives platform that is also used for Trouw, het Parool and a few other titles. This platform is developed, designed and secured by one team. In that way it is cost efficient and there are more people available to work on new developments.

This team is part of a larger department called Journalistiek en Product Ontwikkeling, the product development department. Within this department the teams for the different platforms are based. These teams consist of at least a graphic designer, a UX designer, a UX researcher, a data analyst, one or more product owners and developers. Everyone is also in a platform broad team, all UXers also collaborate to share new knowledge and insights. The platform teams work in an Agile way (Source Get Agile, Jongerius, 2012), which means they work in sprints. Such a sprint was for example the introduction of dark mode for de Volkskrant. As a graduation intern I am part of the UX team for all platforms and collaborate with the team that works on the Selectives platform.

The team of the Selectives-platform focuses on reaching commercial goals, through a customer-centred way of working. It is a product-focused team that does not get involved with the content of their titles. It uses qualitative data from user interviews and quantitative data from analysis on the websites to improve the products, focused on business and user targets.

The digital team of de Volkskrant that focuses on the product are focused on two main goals: creating the right content and getting the right content to the right reader. To create the right content they are experimenting with new types of media, creating podcasts and 'kijk verder' productions. These are immersive visual productions built by two developers working directly for de Volkskrant.

To get the right news to the right reader, the news that is presented online is curated. This is done through a collaboration between two journalists: a sitemanager and

a news chief. The news chief has an overview of the latest and most relevant news at that time, the news chief uses this overview to create a curated list on the services and chooses the right topics for 'het balkon'. The sitemanager represents the needs of the user here as well, through live data they can see what readers are currently clicking on. They are also responsible for creating a sense of urgency, so that people have the feeling that they are up to date with the latest news and have a reason to come back to the site.

The data that these sitemanagers use is created by a set of analysis systems controlled by the New Analytics Team (NAT). This team works on data generated through the content of the news site. They collect data on how much people click on a certain article and how much they value this article. When a sitemanager sees that a certain article generates very little clicks, even when in a prominent position. They can decide to put another article there, or see if the header or image is not attractive and edit it.

The final team that is directly relevant for this graduation project is the Recommendation and Search area (ReCoSearch). This is the team that develops the machine learning algorithms within DPG Media. They work on the search functionality in all digital services and experimenting with suggestion algorithms, fit for personalisation. This team works autonomously on these algorithms.



Figure 28: A kijk-verder productie in the app

Design and development

of current digital products

The different teams mentioned in the previous section all work on the digital services of de Volkskrant. The ways of working do differ, also the cultures at both sides do differ. This section describes those differences and projects that aim at creating a more digital first culture at de Volkskrant.

Through participatory observation (Patton, 2002) during the past five months, I have tried to see what those differences are and how they affect the developments in the company. Firstly I'll describe the JPO-department. This is a data-oriented product development department, it aims to validate all its decisions through user research and data analysis. It has a sole focus on the digital products and their growth. The targets that are currently worked with are also set by marketing departments, for example aiming to get more users to log into the services of DPG Media.

De Volkskrant's day-to-day business is creating and sharing

Push towards a digital mindset

But, it is time for change. Within DPG Media and de Volkskrant there is a clear need for getting everyone involved in the digital developments at de Volkskrant. Within de Volkskrant a team has stood up to get the journalists more data-oriented and in collaboration with the earlier mentioned NAT-team they are working on future-oriented journalism.

This project consists of measuring data on written articles at de Volkskrant. It assesses every article on two quadrants: Volume and Value. The volume scale measures how many people have clicked the article, relative to other similar articles. The value scale measures how much people appreciated the article by measuring if readers finished reading the article, also relative to similar articles. These scales can constructively help journalists improve their articles, by measuring them relatively instead of absolutely.

A team within the Volkskrant is helping the journalists to start working with this information. The collaboration between the NAT-team and this team goes well. The Selectives-team and the digital team at de Volkskrant are not yet really collaborating. Currently these teams report to each other what they are working on, but are not yet working on projects together. The demand for this collaboration is starting to grow and when asking around for earlier experiences for this collaboration within DPG Media, a colleague told:

articles through their platforms. Within de Volkskrant this has created a culture of quick decision-making. Within their decision making processes they trust in the expertise of their colleagues. Within their articles this works excellently, fact-checking their articles and sticking to the journalistic codes. When putting together the full newspaper, the decisions are made really quickly. This was a big difference in comparison to the meetings at the JPO-department.

Another big difference is the paper-focus of de Volkskrant, the journalists are still very much focused on the location of their article in the physical newspaper.

"Have we already filled page 2 and 3 for tomorrow?"
- Journalist at de Volkskrant

This is a more common question than asking for the digital presentation of a certain article.

"When the Edition-page was published, all of a sudden the journalists that had always acted like a digital newspaper could not exist, started getting involved with the digital presentation of their articles. Their input has helped us afterwards to develop a better digital journalistic product, all they needed was a concrete example of what it could be."
- Manager at product development DPG Media

The need for this collaboration is clear, but due to different ways of working and different views on digitisation it does not yet work as well as it could. With this graduation project I aim to help push this in the right direction. Personalisation can fit the wishes of all stakeholders, and that also demands input from all stakeholders. The goals of this project should be both aimed at the commercial view of DPG Media to have the platform serve the users, as well as de Volkskrant to allow for better news curation.

Through regular meetings with stakeholders within both DPG Media, as de Volkskrant and a co-creation with both sides involved I want to spark the interest and help them in getting to know each other. Journalists should be involved in the process of designing a new feature that can have a big influence on the way the people use their platforms.

Perception of personalisation

To start understanding the differences between these stakeholders for this project I set up five stakeholder interviews (two from de Volkskrant and three from DPG Media). I studied the perceptions on personalisation and the reason behind these perceptions. Afterwards different types of personalisation were discussed to define further clarification of these perceptions and the possible opportunities and problems that are currently seen.

De Volkskrant:

Within de Volkskrant two journalists closely involved with digitising the journalistic practices of de Volkskrant were interviewed. They were aware of the intention of this graduation before the interview and are familiar with personalisation. When asked for the possibilities of personalisation one said:

“It could make the process of being the sitemanager more clear and dynamic. You could for example show people new things if they have already read an article before.”

This mindset was reflected in both their responses, personalisation should always be combined with the vision of a journalist:

“Personalisation could be a great extra service or addition to the current newspaper, never a replacement.”

and

“I feel that a lot of readers appreciate the fact that now someone is curating their news for them. It is part of the service of a newspaper like de Volkskrant.”

They proposed personalisation as a great add-on. The human guide role is essential to the newspaper for them, and also representative for the character of the newspaper. The biggest fear for personalisation is focused on the fear of data of poorly read topics:

“Journalistic independence could be at risk, if we stop writing about topics like Africa that would be really bad. Even if we know that the target audience for those articles is really small.”

This is a common fear that the quadrants (mentioned on the page before) of the NAT-team try to tackle by measuring every article with articles that were alike. This fear also expressed the fear that a more data-driven Volkskrant could lose interest in its' most niche articles.

DPG Media:

For DPG Media three people were interviewed, all working in the product development department. They are focused on innovation and digital products. This group was very positive on the development of personalisation:

“One of the biggest problems a lot of users are feeling is the overload of content everyday, so if this could limit the content to what is relevant for a reader then it is great!”

They recognised that with the amount of news that is produced today, the users could not fully keep up. This could be perceived as an overload and by presenting them the right articles, that could be fixed. A fear that was mentioned in the interviews:

“If the algorithm is faulty then the user experience will be really bad for everyone, so it should be working very well first and then it can be nice.”

This came from previous experiences as well. If the personalisation algorithm is not able to recommend the right articles, it can really annoy users.

Insights

For the people at de Volkskrant I spoke to, personalisation is definitely a possibility, but it should first be introduced as an add-on. This could also help cover the fear of a faulty algorithm as expressed by the stakeholder at DPG Media. A stakeholder also expressed the fear that niche articles might get less exposure in a personalised Volkskrant-app. That is the opposite of what I want to achieve for the design and good to keep in mind.

Conclusion

The current app fulfils most basic needs of the readers, but is lacking in facilitating the search for certain topics and fulfilling the habits of the readers. This lack of overview was mirrored in the interview with the DPG Stakeholder stating the overload of news is a problem for the user and personalisation could be a way to solve this.

To implement personalisation in the app of de Volkskrant a collaboration across teams needs to happen. Firstly the Selectives-team within the Journalistiek Product-Ontwikkeling team needs to be on board, they are responsible for further development of the concept and designing what it would look like. In order to get the algorithm working, the ReCoSearch team needs to get on board as well, they are responsible for all machine learning principles within DPG Media.

Next is the NAT team, they are responsible for the improvement of the journalistic content through data, this is a vital team for two reasons. It can help link the articles together and they have a large role in building a more data-oriented mindsets in the newsrooms. This can help getting the final important stakeholder on board, the team at de Volkskrant. The key digital stakeholders need to believe in the addition of their current news creation and curation. They do not have an official veto, but if a newsroom wants to block a new development they can.

Currently the mindset towards personalisation is already quite open, the interviews have shown that the personalisation would be best appreciated when it will be combined with the way of working of a journalist. Another very clear reason to keep the journalists involved during the whole process.



Design Brief 6

To conclude the analysis of this graduation project, this chapter describes the most important conclusions necessary for designing a personalised news service that fits de Volkskrant. The goal is to give

direction towards the design and create borders for developing the ideas within the scope of a design for an app involving a content ranking personalisation-algorithm.

The analysis has shown how digitisation has changed the possibilities for journalism. The rise of the quick headlines news media (NOS.nl and Nu.nl), the constant news availability on social media, tech companies as news platforms and the rise of in-depth research platforms like de Correspondent demand action from de Volkskrant to move along in the digital innovations. As the scope for this project is personalisation, the design should contribute to the way de Volkskrant positions themselves as a digital company.

As de Volkskrant is currently developing their multi-media offer and the offer is larger and more diverse than ever. The digital services of de Volkskrant are currently not able to display these in the right way. The structure of the home feed is set up to mainly update the readers. Even though the subscribers look to also fulfil their needs 'to create a better understanding' and 'to be surprised and amused' in their subscription for de Volkskrant. All these needs should be fulfilled by the new design for a personalised news service.

As the amount of stories (articles, podcasts, etc.) that de Volkskrant produces, the lack of overview in the app also grows contributing to the overload that the readers feel. The study by Song et al. (2016) has shown the overload that readers experience. This overload is not just experienced in the Volkskrant-app, but de Volkskrant should not contribute to this overload. Adapting the app to the habits of the users and making it easy for them to find the stories they are looking for is key for a new design.

Combining these insights the final design should offer the reader of de Volkskrant extra value in their journalistic experience. To do so the personalised design should contribute to the mission and vision of de Volkskrant. For this project, they are formulated as:

Vision:

A world in which news enriches people's life and stimulates inspiration, joy and development.

Mission:

Offer a personalised multi-media news experience that educates, updates and inspires consumers in order to broaden their perspective and enrich their life.

The mission contains the goal to broaden the perspective of the readers of de Volkskrant. To create a personalisation algorithm that does so, studies (Möller, 2018; Bernstein, 2021; Abdollahpouri, 2021) suggest combining multiple types of algorithms in order to create a diverse result and allow for serendipity to take place. The concept of the personalised newsletter of the New York Times that combines journalist curation with algorithmic curation could also be a solution for this (Owen, 2018).

To offer this personalised design in an ethical way de Volkskrant has to take to more aspects into account the need for autonomy and transparency for the users. In the first implementation of personalisation the users would prefer to control and recognise whether they are in a personalised app or not. This should also show that when a reader would want to dive into a certain perspective, they are aware that they are in a personalised environment and always can quit and go back to the broader perspective.

Within the company

For the development of this design it is important to include multiple stakeholders in this process. Next to the readers, these will be the ReCoSearch Area and the product development area at DPG Media and the editorial team at de Volkskrant. Research (Diakopoulos and Koliska, 2016) shows the importance of this type of collaboration in developments that have to do with algorithms in journalism. Next to that I found in the stakeholder interviews that this is an area a graduation intern can really contribute to the company, getting the departments aligned in my project.

The problem statement

The problem to solve for this personalisation design is:

The digital services of de Volkskrant do not completely fulfil the needs of their readers and do not use the full potential of a digital service. Currently readers can and do experience news overflows, leading to news avoidance and limiting the diversity of news that these consumers see.

Through a personalised new app, that aims to distribute a broad perspective of news, DPG Media and de Volkskrant can make their stories accessible to their subscribers who are interested. While being transparent about how the personalisation works and proving to both the readers and the journalists that the app does not create filter bubbles.

The problem that personalisation should solve is the overload of news that is limiting people from the diversity of the news they see. An overload creates an unsatisfying user experience and does not fulfil the responsibility of a quality newspaper. That is why the personalisation should not just stop the overload, but also give a diverse offer to each individual reader.

In order to design such a personalised news service it is important to involve the different stakeholders in the design process, informing them on the user research and designing concrete examples of what personalisation would look like. So the different teams also see personalisation as a means to help de Volkskrant achieve its mission.

The design goal

Design a personalised digital news service, that fits the vision and mission of de Volkskrant. It should limit the overload of news content, while offering a diverse set of articles to not just update the readers, but guide them in a better understanding of the news and occasionally surprise the reader with new topics and insights. This will facilitate the process of broadening the horizon for the reader and improve their reading experience.

If personalisation is executed well it can make the diversity of articles more accessible to the subscribers. A better understanding of the dynamic user needs as defined in the analysis can improve the user experience and can help users spend more time enjoying the content than finding the right content.

For this project the personalisation is focused on the app and the ranking of content, not the content itself. This means that this project focuses on the order of content as shown in the app. In the current situation, the focus is on the 'update me' need. The personalisation could help in facilitating the need for a better understanding and the need for amusement and surprise better. This could also mean that the personalisation could focus on getting the right niche articles to the right readers.

The goal of this project is not to replace the current curation of the news by journalists. The analysis showed

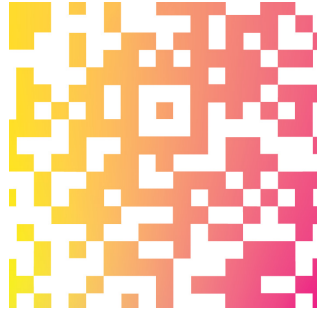
that the human and expert curation for the articles is valued by both journalists and readers, this is often reasoned with arguments about not wanting to miss out on most important news for everyone. Even though the earlier analysis has shown that this is not necessarily the case, the personalisation designs will build upon the current curation of the news.

This could highly increase the feasibility. Firstly because it will foster the acceptance of multiple stakeholders. Secondly because the combined curation will be less dependent on a complex algorithm making consistent right choices. AI should always be a means to an end, not a goal in itself. The core goal is to get the right articles to the right readers at the right moment. A simple mechanism can suffice that need. This could also be an advantage for showing the readers and the internal stakeholders that the personalisation will not lead to a rabbit hole.

List of requirements

In order to reach the design goal, I created a list of requirements that should be taken into account in the design process and should be met in the final design.

- 1** ***Transparency and control:***
The personalised Volkskrant app should always tell the reader which parts of the app are personalised. The reader also should be in control whether it wants to be in a personalised environment or not.
- 2** ***Limiting the news overload:***
The final design should limit the feeling of being overwhelmed by the news and as a result create news avoidance or the feeling of missing out of news the reader would have wanted to see.
- 3** ***Diversity and serendipity***
The personalised curation of the app should offer a diverse set of stories for the user. In this way serendipity should be facilitated, this creates the desired feeling of being surprised by de Volkskrant.
- 4** ***Facilitating the reader needs***
The new design should fulfil the needs to be updated, to create a better understanding and to be surprised and amused.
- 5** ***Adding value for the consumer in the Volkskrant-app***
The final design should deliver value for the user through fulfilling their needs and allowing them to broaden their horizon and limiting their filter bubble. In this way it would add to their loyalty to the services of de Volkskrant.



Design Process

7

The design process aims to synthesise the most important insights from the research phase into visual and (later on) interactive prototypes. As the term personalisation can be abstract, it is important that the design will

clearly communicate its functionality and capabilities.

Throughout the whole project, the different stakeholders were involved. Within this design process, the

users are involved in the testing and afterwards, the journalists and product development department will also evaluate the presented designs.

The goal of this design process is to turn the chosen personalisation principle into an interactive prototype, so that it can be tested with users and test the insights I found in research. The design brief contains a clear design goal and the prototype being interactive can help in validating its success in solving the problem statement. Through multiple iterations, the final product is an interactive online prototype, made in Figma, that is clickable and has been tested with users.

The personalisation principles as presented in the end of the design brief function as an opportunity space. This is the foundation of the divergence of the design process: setting borders and goals for what the final design should do.

A co-creation session with multiple stakeholders from both DPG Media de Volkskrant and external experts helped to decide on the most relevant and interesting personalisation principle. In which six possible concepts were proposed to make this idea tangible. A collective brainstorm with my team at DPG Media proposed two concepts as well.

Afterwards the prototyping began, starting with paper prototypes. This prototype was tested with Volkskrant readers and iterated on to propose the final design. In the delivery phase this design will be cut up in smaller pieces in order to make them more easily implementable at DPG Media.

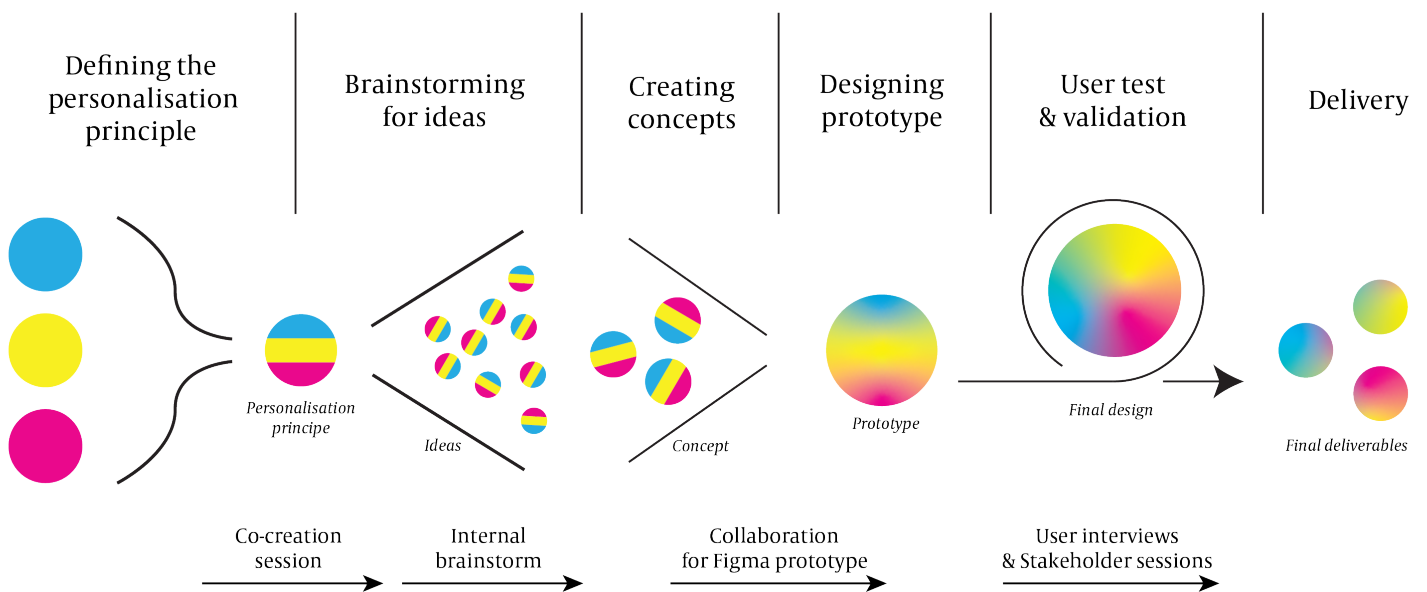


Figure 29: The design process

Personalisation principle

Two personalisation principles were designed based on the design brief, they worked as an opportunity space. Opportunity spaces are areas of ideas and opportunities that you can create value in. The opportunity spaces proposed two ways that personalisation could work for de Volkskrant and what the purpose of this type of personalisation then would be.

Needs-based co-curation

This personalisation principle consists of two main ideas. The first of which is co-curation: a collaborative effort to curate the news visible on the digital services on de Volkskrant. The second is needs-based: from my research it was shown that a Volkskrant reader has six needs to fulfil when reading the news. This type of personalisation proposes that a human sitemanager is capable of fulfilling these needs in a different way than an algorithm can do that.

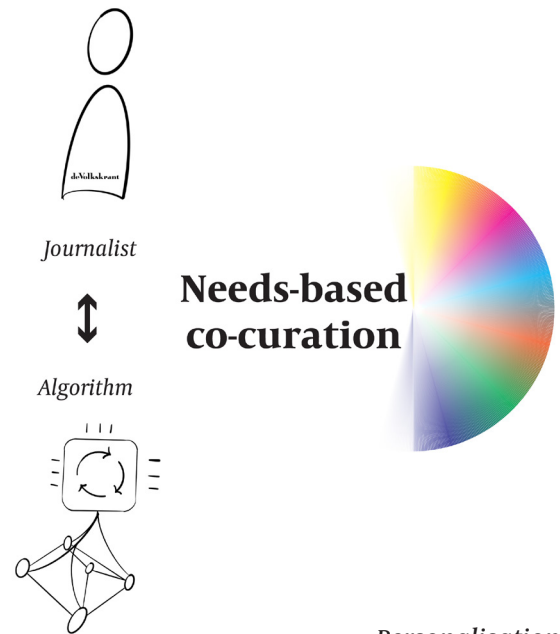


Figure 30:
Personalisation principle 1

Your layer behind the news

This type of personalisation is based on an algorithm that helps you connect to the journalists that write the news. It allows the journalist to make suggestions or share sources they have used for their articles. The algorithm makes sure that it ends up at the right readers.

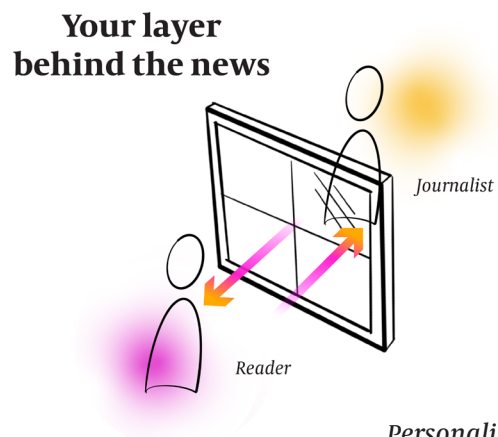


Figure 31:
Personalisation principle 2

Evaluation

As a first start of the synthesis phase, I proposed three personalisation principles to two stakeholders within DPG Media and to two stakeholders at de Volkskrant in one-on-one meetings of an hour. These three personalisation principles were iterated into two principles as presented above (the original principles are found in the Appendix 5).

These two principles were presented in my co-creation session. My co-creation session consisted of 6 participants plus myself as a facilitator (2 Volkskrant, 2 DPG Media stakeholders and 2 external experts). This session took place digitally through Miro and Zoom and lasted for 2 hours, the full workshop setup is in the Appendix 10.

Within this session the Needs-based co-curation was picked as favourite principle for two reasons:

- Working Needs-based with 6 reader needs is currently in development at both DPG Media and de Volkskrant, so it has a closer connection to what the company is working on.
- The Co-curation idea shows the different capabilities of a human curator and an algorithm. Further defining these specific differences could help the curators of de Volkskrant in determining a consistent way of working.

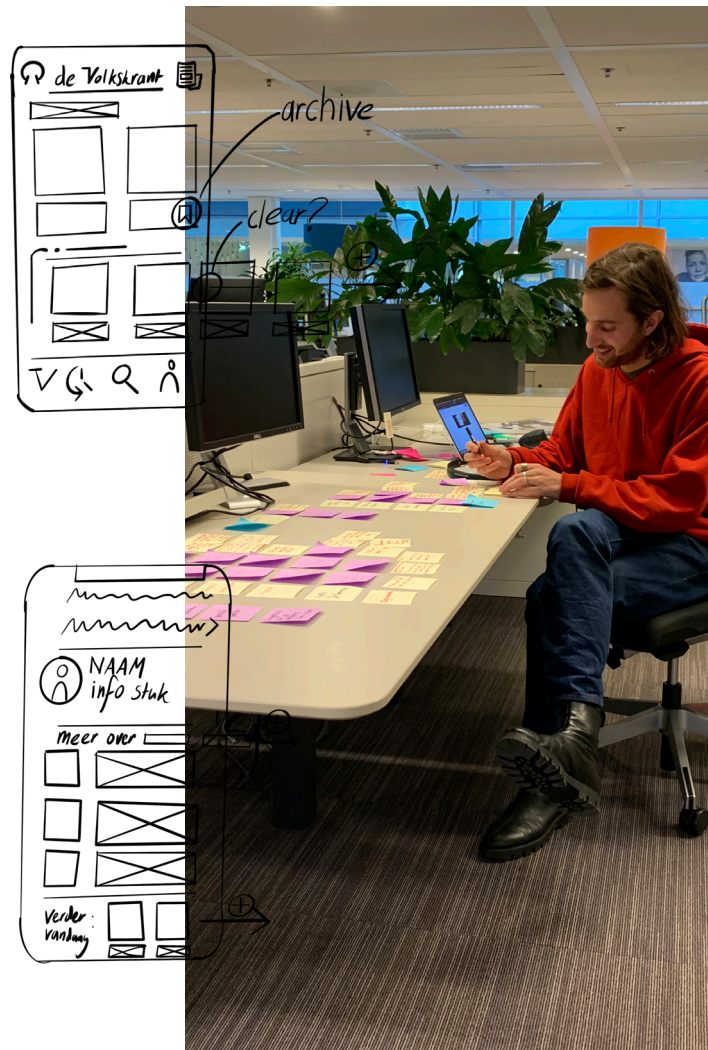
Developing the prototype

To develop a digital interactive prototype, I developed a set of rules to make sure that the user test could help me validate my insights and the prototype was possible to create within the right amount of time.

- 1** The prototype should be in the form of an app-prototype, for mobile phones. Within the Product Analytics Team, most new designs are done within the app. These are easy to test through the available software at DPG Media (Lookback). And the amount of app users is quickly growing.
- 2** The algorithm behind the prototype does not have to function. The app should be very communicative about what parts are based on an algorithm, what input it uses and what output it afterwards creates.
- 3** The prototype will be designed in the new style of de Volkskrant, as was created in the design sprint of de Volkskrant in Octobre 2021. This is to design my prototype as part of a future vision for de Volkskrant app. This does mean that my additions to the design are not the only novelty for the participants of the test. By creating my additions in the same style, I have tried to make them stand out less.

Figure 32:
A brainstorm in the office

The first ideas were sketched on paper, designing a set of screens. These screens I could quickly test with colleagues and fellow students. The starting point of the screens was based on the concepts of the co-creation session and the results of an hour-long brainstorm with the whole Product Analytics Team (10 persons, consisting of data-analysts and UX Researchers). These sketches were focused on the form of the app. What could personalisation in a home feed look like? What does co-curation look like for the user? In what ways can a reader dive deeper into a topic that they like? What is the best way to let the app know what you like?



In the design process I tried answering these questions through sketches and brainstorms. When coming closer to the prototype I started using these sketches and ideas to create concepts in Miro. These combined multiple ideas, to see if they could work within one concept. I tested these on screen, to see if they were understandable and iterated.

The final stage was putting them into Figma. To do this I collaborated with a fellow intern at DPG Media, a Communication and Media-Design student. We used the Figma Library of de Volkskrant to create a prototype that looks like a real Volkskrant-app.

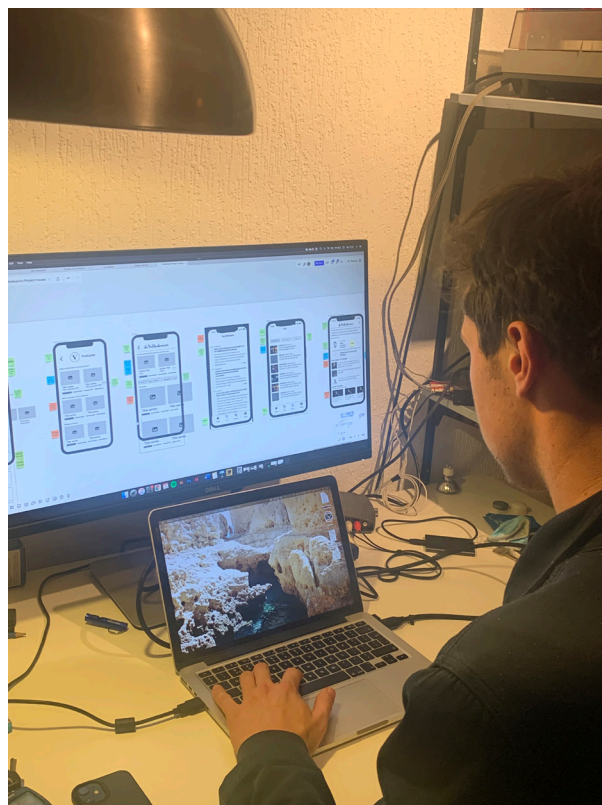


Figure 33:
Wireframing with roommates in quarantine

Figure 34:
A result from a Miro brainstorm

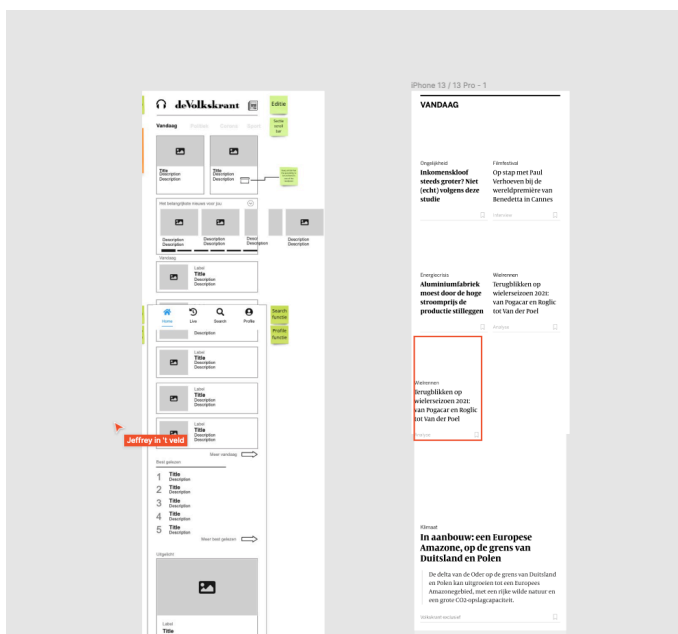
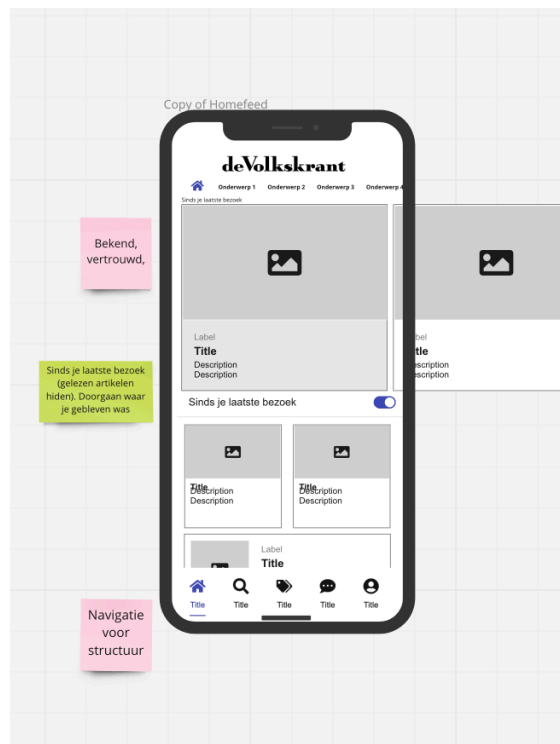


Figure 35:
Designing the Figma prototype



The prototype

The prototype is designed for the user test. That is why I chose to put it in a set of different personalisation types in the design of the prototype. In this way the user test can function as a validation session for multiple ways to personalise de Volkskrant.

As the perception of personalisation is often influenced by preconceptions about the word or term, the word 'personalisation' is only found in the settings of the prototype. The copy used for the personalised part always consists of specific words to show that the content is specific to you. The content in the prototype however is not picked for the participants, the content is picked based on a sense of neutrality so it does not trigger a reaction.

The personalisation algorithm in the prototype feeds itself with data of the reader through two mechanisms. The

first is an explicit form of data collection: the prototype features the possibility to follow a certain section or journalist in order to see new articles in the future. The second mechanism is through 'reading lists' (leeslijsten). This is an explicit way of gathering data about the interests of the reader, because the reader fills it in themselves.

The 'leeslijsten' or reading lists function as a way to archive the articles that a reader wants to save for later. This could be for collecting journalism on a certain topic, or saving something to be able to take a closer look later in time. The topics and journalists often collected will be designated as interesting and therefore be used as interests in order to give future recommendations.

This section shows the most important screens for the test. In Appendix (8) all screens are shown.

Homefeed: 'Het belangrijkste nieuws voor jou'

This is the first personalised feature the user sees. It is prominent on the homepage of the design. The personalised bar shows the news that is most important to you, 'gebaseerd op jouw favoriete journalisten of thema's'. The prototype does not tell the user how the personalisation knows what you specifically are looking for. The bar contains four articles, two columns, an interview and a special photo-production.

All articles have a button next to it, to save the article to one of the reading lists. This is done so that someone can save an article for later, if they don't have time now.

The podcast and 'editie'-pages are placed in the top corners. This is done because these are features of the app that users usually directly look for when opening the app.

The navigation bar consists of four items: the Home Feed, Live, Zoek (Search) and Profiel (Profile).

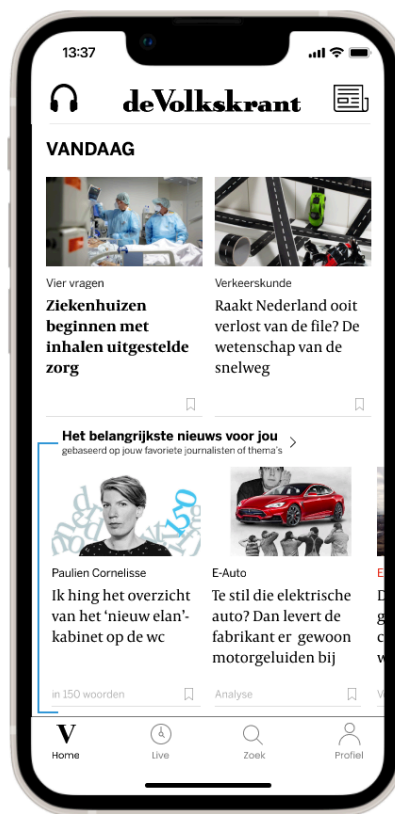
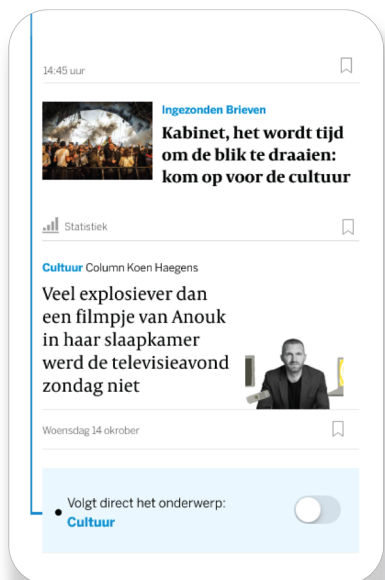


Figure 36: The home feed of the evaluation prototype



Home feed: 'Volg direct het onderwerp'

At the bottom of every section a switch was added, this gives the possibility to follow a certain section.

Figure 37: The possibility to follow a certain theme on the home feed

Bottom of an article: Toevoegen aan jouw leeslijst

At the bottom of every article multiple features were added. The top part is focused on the journalist of the article. It shows a picture, the name, a small introduction and a follow-button. The follow-button makes sure that new articles of this journalist will be added to the personalised bar on the home feed.

The second feature is the possibility to add the article to a reading list. This has been personalised to add it directly to the most fit reading list, in this case climate (Klimaat).

The third feature is a renewed 'meer over'-section. This adds suggestions to the article based on a specific theme. It allows a reader to dive deeper in the theme that they like.

The fourth feature is 'verder vandaag', a horizontal scroll bar with the rest of the news that day. This allows the reader to continue reading directly, without having to go back to the home feed.



Figure 38: The new interface at the bottom of the article



Figure 39: The journalist profile

Redacteur/columnist-profiel (Journalist profile-page)

When clicking the picture in the previous screen the profile of the journalist opens. This contains the same top feature. It adds a search bar to find a specific article a reader is looking for that this journalist has written.

The next feature is a personalised bar that shows columns (or articles) of this journalist that are fit to the reader's reading lists. Underneath the recent publications are listed.

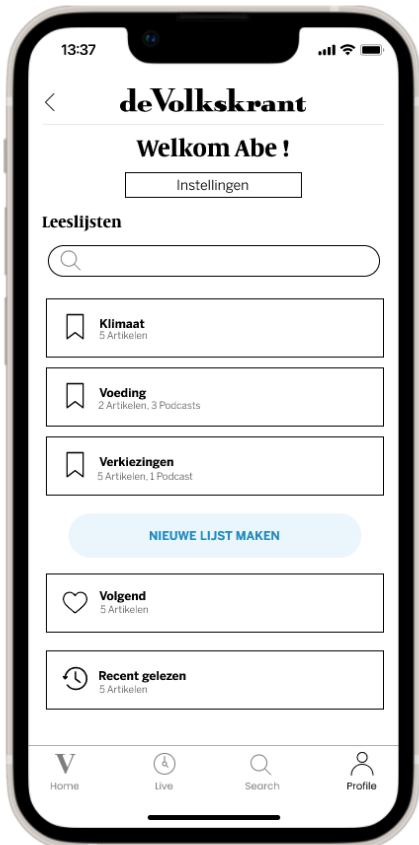


Figure 40: The personal profile page

Profile page

The profile page is selected through the navigation bar. From the top to the bottom, it tells the reader 'Welkom [Insert Reader's Name]' to show it is your personal profile. Below there is a button towards the settings.

Then it shows the reading lists, including a search bar if you have many. Under the lists, there is a button to create a new list. It is finished with a button to go to the overview of journalists and themes the reader follows and the recent article they have read.



Figure 41: The reading lists

Reading lists (Leeslijst page)

The reading lists are available through the profile page or directly when you have added a new article to it. It contains two main parts. The first of which is 'suggesties voor jouw leeslijst'. These suggestions propose articles that would fit to the reading list. This works like Spotify, proposing suggestions to music playlists.

The second part is the reading list itself. A chronological overview of the articles the readers have added to their reading list.

Conclusion

The prototype is a collection of personalisation ideas that I want to test with the readers of de Volkskrant. To do so I created an overview of the most relevant ways for de Volkskrant to be personalised. Through the sketching and wireframing process, these ideas came together to form a concept. The collaboration with my co-intern helped to develop it into an interactive prototype. This is useful for the user test, as it simulates the real situation of use then.



Evaluation 08

This chapter describes the user evaluation of my prototype design. To test my prototype, I set up a concept test. My prototype consists of seven different personalisation concepts, all of these concepts contain a different kind of personalisation. The goal is to evaluate every concept and define

which concepts could bring the most value to the readers of de Volkskrant.

I interviewed six readers that I collected through a call on the app of de Volkskrant. They tested my prototype and participated in a semi-structured interview. It is the final

round of user-testing and serves as a final evaluation of the concepts and a validation that personalisation could help to solve my problem statement. This chapter describes the set up of the test, the results, an analysis and the concept evaluation.

Set up of the user test

To test the prototype, six participants participated in this study. The user test was digital through a video call on Lookback. This service allows you to look at the on-screen activity while also seeing the participant. The video calls last for 40 to 60 minutes. Within this duration, the user tried the prototype and answered questions in a semi-structured interview. The participants were selected after they admitted themselves through a call on the Volkskrant app. They were selected to have a 50/50 male-female ratio and a spread in age from 23 to 62. All participants use the app every day.

To perform consistent user tests, I created a test guide according to the theories provided by Patton (2014). The script and interview guide are in the appendix (9). Next to the individual participant, I am also present as an interviewer. One of my DPG colleagues was also an observer during (a part of) these sessions, the participant was aware of their presence but could not see the observer.

The research goal is to test the

potential of different types of personalisation. It is a concept test for multiple concepts within one design. This test aims to test their perception of the functionality for their experience, not to test the perception of personalisation. The questions asked in the interview were also formulated in a funnel-way. For every concept the questions were first very descriptive: *‘Can you describe what you see when you scroll through this screen?’*

These questions fulfilled the answers of what their first interpretation was and what they thought of it. These questions built up to more specific questions: *‘What would you use this functionality for?’*

Using this funnel to ask the questions will help me discover unclarities about the design first, help define their perception of the functionality of a concept and finally define their opinion about the desired functionality of such a concept.



Figure 42: My call on the app of de Volkskrant (The bottom of the newlist)

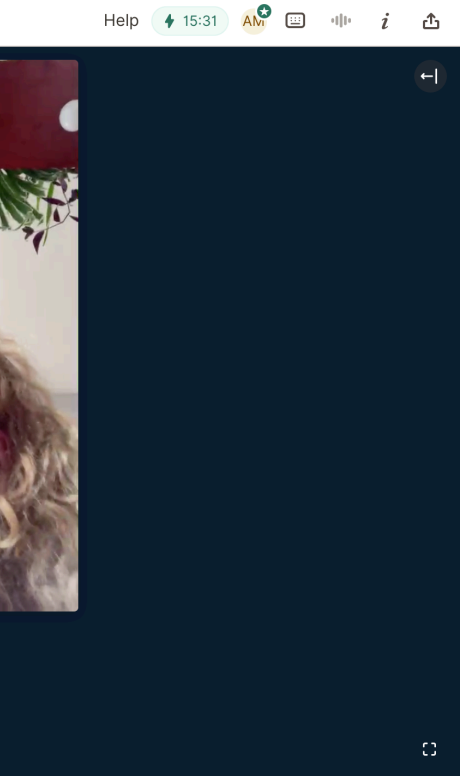


Figure 43: A testcall for my user evaluation with my roommate

Lookback USER MOMENT → LiveShare → LiveShare with Puck Gräffner

Help 15:31 AM

Results

As this user research consisted of six semi-structured interviews, the results of this study do not provide quantitative proof for the concepts. The goal of this study was to find the reasoning behind the opinions of the participants and find their perception of the design as presented to them. That is why the quotes of the participants are used to write an analysis on the different parts of each concept.

The prototype presented seven types of personalisation.

Personalisation

During the explorative interviews at the start of my project, personalisation was judged based on earlier experiences. This could sometimes provoke negative reactions to these algorithms. The prototype was the first visual and tangible expression of what personalisation could be for de Volkskrant. As the prototype combined journalistic and algorithmic curation on the home feed, the overall reactions were very positive.

“Personalisation is great as long as I can see the bigger picture, I would really like to get suggestions.”
- Digital news fanatic (23 year old)

The quote came from the final part of the interview when I first mentioned personalisation. The reaction was positive and showed the demand for a broad perspective. The overview with the most important news as selected by journalists was key to their personalisation experience.

Within the interviews two functionalities stood out: the personalised block on the homescreen ‘het belangrijkste nieuws voor jou’ and the functionality at the bottom of the article. These functionalities were defined as most relevant to the participants. That is why this section focuses on the insights on these two functionalities. Firstly I will present the overall conclusions of the research, before diving into the specific functionalities.

“I would not like personalisation when it is too narrow. That would make me feel like I miss things.”
- Digital news checker (27 years old)

This showed the need for news diversity in the personalisation bar as well. When it would just show similar articles or content, it could still give this participant the feeling of being in an echo chamber.



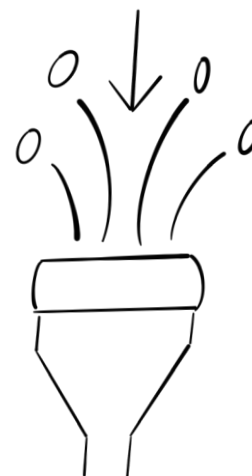
Data collection

In order to create a well-functioning personalisation algorithm, the data of the individual user is necessary. To clearly communicate where the data was collected the focus of the prototype was on explicit personalisation. The reading lists in combination with the possibility of following a journalist or a theme are the possibilities for this. Two participants were more fond of implicit data collection.

“I would appreciate it if the app recognises my preferences because of my reading behaviour.”
- Digital news fanatic (43 years old)

The explicit data collection would demand more effort from the user and also it would ask from them to exactly know what they like. The implicit data collection would demand more trust from the readers, as the full reading behaviour would be tracked. Luckily this was not a problem for the users.

“I trust de Volkskrant with my data, they probably know it already.”
- Digital news fanatic (23 year old)



Saving articles

The reading lists are among the most important assets of the prototype. They functioned as a way to archive articles and were a way to tell the app that a reader is interested in a certain theme or topic. The idea of saving articles for later on was an idea that was appreciated (and maybe even surprised that it was not already possible).

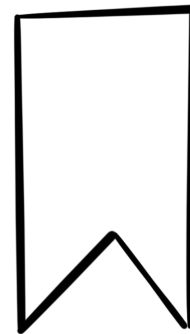
“I would like to have an archive of very good articles”

- Digital news fanatic (47 year old)

What stood out though, was that building up archives for different themes was too much of an effort for these participants. One reading list (or maybe two) would be sufficient, so that they could save articles for later to read or to show to others.

“I would use reading lists to save larger articles for when I have time later on.”

- Digital news fanatic (43 years old)



Following journalists and themes

The possibility to follow journalists was received with mixed reactions, it felt logical but most participants did not really follow a specific journalist. Following a specific columnist or a theme was an addition that was more relevant. It was noted that broad themes would not really help the user, so specific themes should be presented.

“I would prefer following themes over journalists. The themes should be specific though.”

- Digital news fanatic (23 year old)



Reading guide

The participants are described as news checkers or fanatics. A checker is focused on quickly checking the news throughout the day, a fanatic is more of a deep diver reading multiple sources to understand the news better.

Het belangrijkste nieuws voor jou



Functionality

The first personalised addition is the personalised block on the home feed. The horizontal scroll bar shows 'het belangrijkste nieuws voor jou, gebaseerd op jouw favoriete journalisten en thema's'. During the interviews I did not tell the participants about what the goal was of this bar. The participants all recognised it as a personalised part of the app. The perceptions about the functionality were focused on the suggestions like mentioned above and the expectation to find the columns and sections that they regularly read.

"It looks like an easy access to my favourite articles, but without it being just that."

- Digital news fanatic (47 year old)

Position



The personalisation bar is currently placed directly after the two articles in 'het balkon' and above the newlist. It has this place in the prototype so it would be immediately visible when opening the home feed. The users did not really have an explicit opinion about this, what was very clear was that it should be placed much further than the newlist, as nobody ever scrolled further than this.

"I do not really scroll much further than this (the newlist)."

- Digital news checker (27 years old)

"Scrolling through the whole of the current home feed is exhausting, I don't want to scroll too far to below."

- Digital news fanatic (43 years old)

Layout



The new layout of the prototype should be calm and in the style of the app from the design sprint done by de Volkskrant. The 'Belangrijkste nieuws voor jou'-bar should stand out just enough, to see that it was different from the rest of the news list.

"It is very important to me that the app is calm, the new block is designed in a calm way but catches my eye immediately."

- Digital news checker (32 year old)

"The new piece 'Belangrijkste nieuws voor jou' stands out directly."

- Digital news fanatic (43 years old)

What was one of the most important aspects was that it was clear that it could be horizontally scrolled. This was not mentioned, but all participants started scrolling without extra instructions.

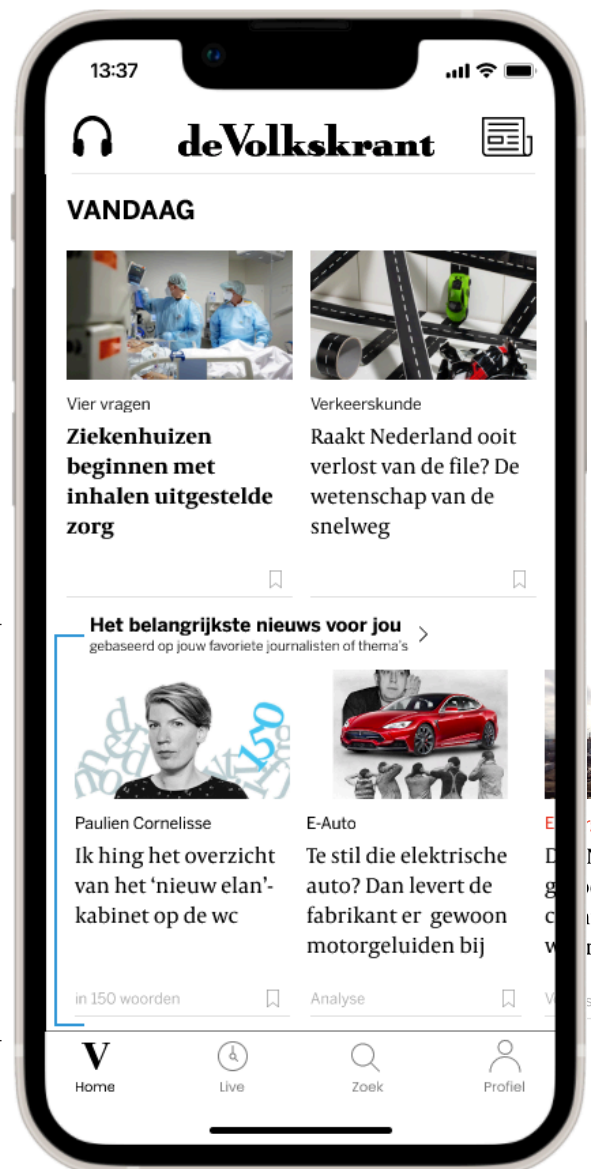


Figure 44: The homefeed of the evaluation prototype

Copy/text

“Is it news, or is it also non news?”

- Newsfanatic on paper and online (62 year old)

‘Het belangrijkste nieuws voor jou’ was fine for most participants but this quote questioned the distinction between the personalised and non-personalised news. As the personalised scroll bar does not necessarily contain news. The second part ‘Gebaseerd op jouw favoriete thema’s en journalisten’ was clear and transparent enough for the readers.

Form - Swimlane

The horizontal scroll bar, also often referred to as a swimlane, is a good fit for the participants. It allows for enough content, while also easily ignored when unnecessary. It should not distract from the news curated by the journalists.

“It does not disturb me from the rest of the news and is easily ignored when you do not feel like using it.”

- Digital news checker (27 years old)

One of the participants mentioned the extra effort the horizontal scroll bar would cost them. As the horizontal scroll it is a different motion than vertical scrolling.

“The sideways scroll is a bit more time-consuming.”

- Newsfanatic on paper and online (62 year old)



Finity

“The current home feed is way too long, it is confusing. It takes a lot of time to find the right articles. Don’t add too much on it”

- Digital news fanatic (43 years old)

The amount of articles in the swimlane should be finite, as a too long swimlane would add too much to the huge amount of articles already on the homepage. That could create a lack of overview creating the feeling of overload. The exact amount of articles that should be in it is not yet clearly defined, a number two of the participants proposed was 6. This is not yet final. This could be fixed well through an A/B-test.



Contents

During the interviews the content that was chosen for the test was that they were not direct ‘news’ and could not evoke a too emotional reaction. Also a column and a special photo reportage were added to show it was not regular news. The participants did not get any additional information on why it was selected and it was no personalised content. When asked what they would appreciate new topics as well next to their followed journalists.

“It would be nice to get suggestions for my news or new topics.”

- Digital news checker (27 years old)

And: an important note. Avoid doubles in the first screen at all times.

“Double articles would be super annoying.”

- Digital news fanatic (47 year old)

Conclusions

The new personalised block on the home feed was appreciated way better than expected. Suggestions about favourite topics and journalists combined with surprising recommendations were seen as an additional value to the app of de Volkskrant. The horizontal scroll bar is the right form for this new block, it is easily skipped but allows for enough content. The amount of articles in the bar should be updated, just as the copy used in the current prototype.

Het doorlees-menu

Functionality



The combination of these items is to allow the reader to directly continue reading after an article. In the current app three suggestions are selected by the journalist. This does not fully allow the user to continue reading directly but demands the reader to go back and forth to the live feed or the editie-page.

“Why can’t you swipe directly to the next article?”

- Newsfanatic on paper and online (62 year old)

The second goal is to allow a reader to get context about the article that was just read, through looking at the introduction of the journalist and being able to click through to the . The third is to allow the reader to dive deeper into a topic, if they find it interesting.

Design



At the bottom of every article a total redesign has taken place. The new functionalities are best split up in four parts, with each their own design choices and the functionality (from top to bottom in the interface):

- The Redacteurprofiel
- Archiving the article to a reading list
- Meer over (specific themes)
- Verder vandaag

All four will be analysed separately, but it is good to first assess the overall layout design. The first impressions of the interface were not positive:

“Continuing with other articles at the bottom is too busy, a bit like nu.nl.”

- Digital news checker (32 year old)

“Lack of overview, too many buttons and possibilities to click.”

- Digital news fanatic (43 years old)

The overall view is currently too busy, as mentioned on previous pages, the calmth is an important aspect of the current Volkskrant app to the readers. As the different elements combine a list view and a horizontal scroll bar and different types of picture, the next analyses should look at what is most essential to keep for the next iteration of the app.

Figure 45: The interface at the bottom of an article in the evaluation prototype



Verder vandaag

The final addition is the functionality for ‘Verder vandaag’, the idea was that it showed the rest of the news of that day. This did not come across to the participants. When explaining it, they proposed swiping to the next article would make more sense.

“‘Verder vandaag’ is now really unclear in its addition. What exactly should be in it? And how does it help the reader?”

- Digital news checker (32 year old)

Redacteurprofiel

The top part of the new interface is an overview of the writer of the article. It consists of the name, an introduction and a picture of the journalist. It is clickable and will lead the reader to a more broad overview of the writer, with their latest articles, recommended articles and podcasts. The goal is to give the reader an insight into the perspective that the journalist had while writing the article.

“For the sake of completeness, a journalist profile would be very clear.”

- Digital news fanatic (47 year old)

This functionality was appreciated. The overview could be simplified though, the picture of the journalist was seen as unnecessary. They had no added value. The illustrations currently used for the columnists were appreciated, as they were not too personal but recognisable.

“I do not really need to see the pictures of the journalists, the illustrations are more neutral and really cool!”

- Digital news checker (32 year old)

Following journalists was not necessary for all participants, although most of them immediately

came up with exceptions in which it could be useful. Following columnists was a functionality that was logical for all participants. Finally, the clickability of the journalist was not clear enough, all participants had to be told that they could click on the profile of the journalist.

“The journalist profile does not yet look clickable.”

- Digital news fanatic (43 years old)



Artikel opslaan

The second part is the possibility to save the article to a reading list. The design of this functionality was appreciated, but the functionality was not fully optimised. In the current design an article could only be saved when finishing an article, while it may be more logical to also save it during the reading to finish it later.

The second unclarity was that it was not clear how to change the reading

list to save it to. In the prototype the reading list was automatically picked based on a theme. This functioned as a part of the data input for the personalisation on the home feed. Most participants said they only needed one (or maybe two) ‘read later’ reading lists.

“Now seems like you can’t choose which reading list to put it into”

- Digital news fanatic (23 year old)



‘Meer over ... (Thema)’

The third functionality is the newly designed ‘Meer over ...’ section. The functionality is mostly about allowing the user to dive deeper into a theme they are interested in. Three themes are selected that are best fit to the article.

“The possibility to continue reading per theme after finishing an article is great. Reading another perspective would be even better.”

- Digital news fanatic (23 year old)

but this functionality could also help select different perspectives to the exact same topic. Another participant proposed the idea to show the sources used in the article, that would be a great addition for digital over the physical newspaper

“Meer verwijzingen in de tekst naar achtergrondartikelen of dingen op het web zou een digitale stap vooruit zijn.”

- Newsfanatic on paper and online (62 year old)



The need for another perspective was addressed by one of the participants. It proposed the idea that it should not just be linked to the same theme,

Conclusions

The functionality of this interface is useful for the participants, allowing a deep dive into the themes and understanding the context through the journalist add value to the journalistic experience. Saving the article is useful but does not need to be theme specific and be possible throughout the whole article. “Verder vandaag” should be replaced through the possibility of swiping to the next article. Taking these improvements into account a calmer and cleaner interface should be designed.

Concept evaluation

The problem statement:

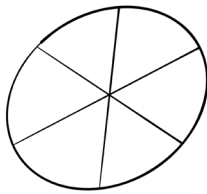
The digital services of de Volkskrant do not completely fulfil the needs of their readers and do not use the full potential of a digital service. Currently readers can and do experience news overload, leading to news avoidance and limiting the diversity of news that these consumers see.

Through a personalised new app, that aims to distribute a broad perspective of news, DPG Media and de Volkskrant can make their stories accessible to all their subscribers who are interested. While being transparent about how the personalisation works and proving to both the readers and the journalists that the app does not create filter bubbles.

This consists of four parts: the current app does not completely fulfil the needs of their readers, it is not at the full potential of a digital service, it should limit the overload and it should not create filter bubbles. This section evaluates these four parts through the results of the user test, do both concepts combined help solve the problem statement for the users?

1. Facilitating the reader's needs

The final design of my project should fulfil the needs to be updated, to create a better understanding and to be surprised and amused. The test mainly proves the ability to create a better understanding. The need for updating was already achieved in the current app. The need for a surprise or amusement turned out hard to test without actual personalised content in the prototype.



2. The possibilities of digitalisation

One respondent was especially excited for the new design. The lack of digital development of de Volkskrant bothered them. They thought this could be a step forward in using the possibilities digital has to offer.



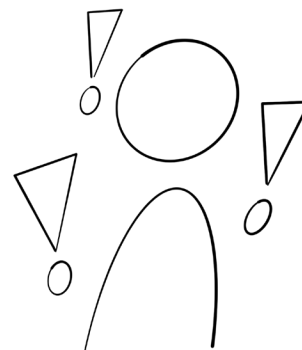
3. An extra service for the platform of de Volkskrant

Another respondent mentioned the possibility of connecting this to a subscription. They saw a business model in it. This is the first step towards creating a viable proposal for personalisation. It does not yet confirm that people would be willing to take a subscription because of the personalisation.



4. Limiting the overload of news

The lack of overview of the home feed was a problem mentioned by multiple participants, the fact that it is so long does not help. It created the feeling of it being 'too much'. This is partly solved, because they don't have to go there anymore, because they now know where to find their favourite subjects and journalists.



Conclusion

The prototype as shown in the previous chapter combined many different concepts into an (almost) over-personalised test design. The test has shown that two elements of the design really stood out and would make a change for the way readers would currently read. The first is the possibility to keep on reading after an article, the second is the personalisation bar on the home feed. These will also be the focus of the delivery to de Volkskrant and DPG Media.

The difference in perception of personalisation as compared to earlier user interviews was really big. The addition of a tangible prototype helped clarify what personalisation can be and changed the experience of the readers. This is an absolute boost for the project, the interviews gave energy to start delivering the ideas at DPG Media and helped emphasise the most relevant requirements once again:

'Personalisation is great, as long as I can see the bigger picture and can choose myself when I want to read outside of my bubble.'

- Digital news fanatic (23 year old)



Stakeholder evaluation 09

In order to create my final design I evaluated my project with stakeholders at DPG Media and de Volkskrant. I created a new iteration of the prototype after my user evaluation and presented my results to two stakeholders at de Volkskrant and four stakeholders at DPG Media.

These conversations focused on the aspects of my project that needed to be clarified in my design and on the storybuilding for the final presentation of my project.

During this delivery phase I was able to identify and reflect on what

the value was to the company. The stakeholders highlighted the need for a common language for new innovations, the value of visual prototypes and the impact on clear user insights.

My project has always had the goal to connect the product development area with the journalists, to be a part of the bridge that is currently being built between these two departments. That is why in my stakeholder evaluation I decided to present the exact same story to all stakeholders involved and focus on cutting out all technical and other types of jargon. In this way, I hoped to finalise a common language for DPG Media and de Volkskrant, in order for personalisation to become a subject that can be discussed. The conversations furthermore focused on what is still unclear about the design, what still needs to be improved and identifying the added value of my project.

De Volkskrant

The two stakeholders are both part of the online team at de Volkskrant are both closely involved in the innovation projects at de Volkskrant but both have a journalistic background. This perspective is relevant for the project to define how it would impact the work of a journalist and how it would improve the app to enhance the way de Volkskrant achieves its' mission.

The stakeholders reacted positively to the presentation. One part of the story stood out to one of the recipients specifically: a slide with a definition of what the capabilities of an algorithm are in comparison to the capabilities of a human journalist. A short definition of these differences helped the journalist see that the goal is not to take away the job of the journalist, but to add personalisation to the current offer.

Conclusion:

The project has clarified how journalists and algorithms can exist alongside each other. It shows the added value of the algorithm and can also help the site managers to define their expertise.

DPG Media

The stakeholders at DPG Media are all involved in product development and work on the Selectives-platform that de Volkskrant uses. These stakeholders would be responsible for further studies on personalisation. They also have a clearer idea of defining the business value and getting other stakeholders within the company on board.

These conversations also focus more on realising such a design. What would it take from the development teams? As this is not yet the state of my project, I focused on conveying the concept more than just the interface designs.

Conclusion:

The project could be a valuable part of starting a new personalisation project for the development and design teams at DPG Media. The involvement of the journalists shows to be a great extra. The project is very user-centred now. How could it be translated to business value?

Specific improvements

The following themes were most relevant for my final design:

The selection of the algorithm:

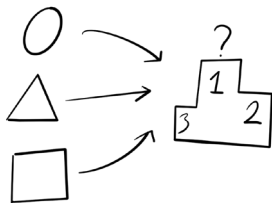
As the actual algorithm and content selection have not been tested yet, this is the most important point of improvement for all stakeholders. Picking clear types of content for the personalisation bar on the home feed is a good first step, but what would be the best way?

'The behaviour of the algorithm is still a point of doubt. It would require more studies on what readers would like.' - Stakeholder at de Volkskrant

The presentation showed four ways to choose articles for a reader. This type of concrete explanation helped the journalists see how it would be different from human behaviour. The resulting effect has not been proven yet, this is something to work on later.

DPG: 'The input for the algorithm is logical now, the prioritisation is a whole different project.' - Stakeholder at DPG Media

The stakeholders at DPG Media were mainly interested in the involvement of the readers and the journalists in the project. Their direct input on the type of content that would be selected through the algorithm was appreciated. Two stakeholders asked more practical questions about the prioritisation of the algorithm. They also quickly noted that this would be a project on its own and this project could be directly communicated to machine learning engineers.



The location of 'de belangrijkste verhalen voor jou'

The horizontal scrollbar on the home feed has a prominent place in the prototype, directly below the top two articles. The user evaluation proposed different kinds of places for this bar.

'When the algorithm would work well, the prominent place makes sense. But should it not be dynamic throughout the day?' - Stakeholder at de Volkskrant

One of the stakeholders proposed that the personalisation bar could have a dynamic location. Sometimes being more prominent and sometimes further down, depending on the type of use of the reader.

How to follow a theme

Within the user evaluation, the reading list was found too complex. The new iteration presented a way to follow themes, just like following the journalists.

'What would be the right way to pick themes for an article and how are journalists involved in picking the themes?' - Stakeholder at de Volkskrant

One stakeholder at de Volkskrant warned me for involving journalists in picking and deciding on the right themes. In earlier experiences this had led to thousands of different themes within one month: not really helpful. A good way to solve this would take the concept to the next level.

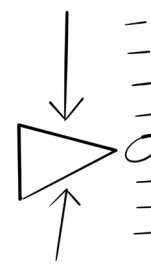
'The themes have been a longer lasting project for DPG Media, the News Analytics Team have built an algorithm for this.' - Stakeholder at DPG Media

Great news: the themes can be identified through an algorithm built by the News Analytics Team. They have also built one that can define the three most relevant ones for an article. This can be included in my final design.



'The bar could first be placed further down and could go up, when it has been proven to work.' - Stakeholder at DPG Media

Two stakeholders proposed that the personalisation bar should not be this high in the app in the beginning, but it could go up later on. The risk of a faulty algorithm would then be less bad to take.



Conclusion

The evaluation sessions have helped me finalise the design. The topics discussed with the stakeholders at de Volkskrant and DPG Media were alike, but the perspectives were diverse. The fact that the presentation was understandable for all stakeholders is a good result for my project. The conversations also led to new research questions that are not within the scope of my project, but will be part of the recommendations and future steps for DPG Media and de Volkskrant to dive into.



Getting the reader to the right article ...



... and allowing the reader to build a better understanding of the stories in de Volkskrant.

Final design 10

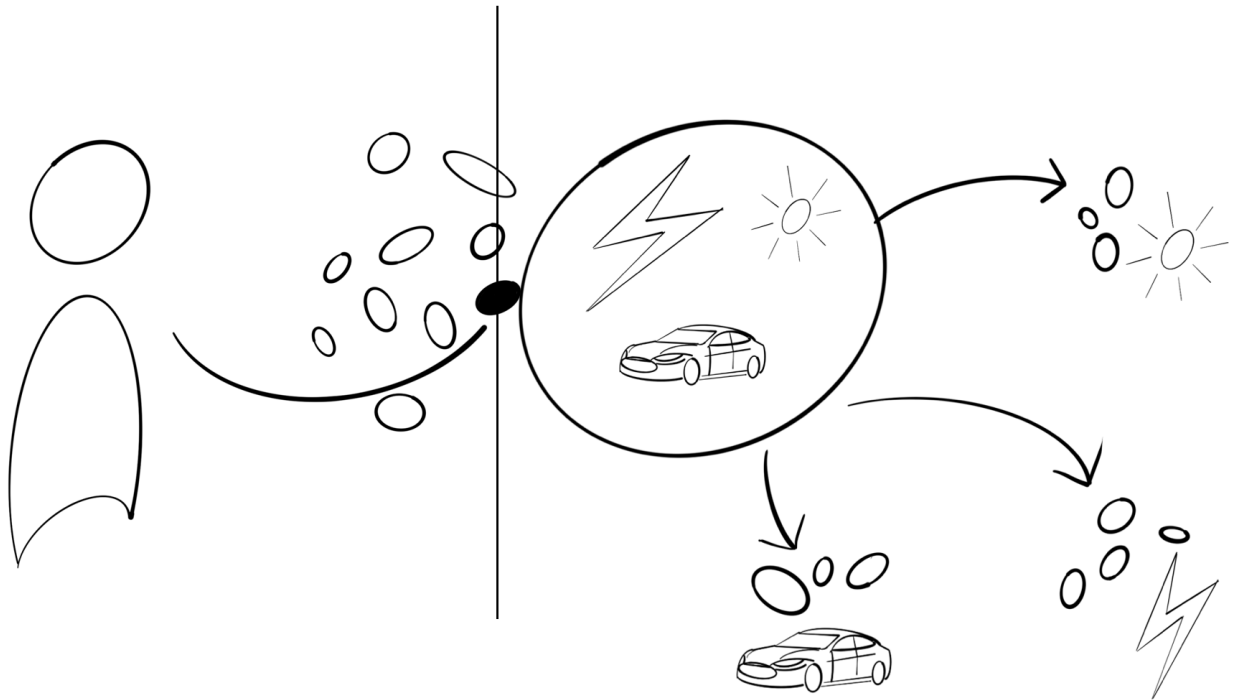
After having tested the prototype with the user and evaluating results, now the final design for this graduation project can be created. The design will be presented through two scenarios that describe the functionality of the

design and how it works.

The final design aims to inspire both de Volkskrant and DPG Media, show the results of the user tests through the design choices and aims to be

clear and concise enough so it is easy to define further research for possible implementation later on. The final design will be used in the delivery and validation sessions at the company.

The final design presents a newly designed interface for the app of de Volkskrant. The new app is personalised in two ways, to fulfil the reader needs at two separate moments on which the reader decides what to read. In this presentation of the design, the interfaces are presented along these scenario's.



Getting the reader to the right article...

The home feed of the app of de Volkskrant serves to make the most relevant news as accessible as possible for the reader and to provide a clear overview of these stories. This scenario focuses on the reader finding an article they want to read in the home feed.

Through personalisation a new interface aims to present a different set of stories to every reader. By combining this personalisation algorithm with the selection of a journalist, a reader will not miss out on the biggest news. A new horizontal scroll bar in the home feed, is the next step in getting the readers of de Volkskrant to the article that they want to read.

and allowing the reader to build a better understanding of the stories in de Volkskrant

When a reader finishes an article they valued, they need to be offered the possibility to do two things: find context for what they just read for a clear perspective. Or take a deep dive in the topic to learn everything there is to know about it.

This personalisation design focuses on offering the reader the possibility to dive deeper into a certain theme, or discover the context of the article. Through a newly designed interface at the bottom of an article the reader is offered new possibilities to create a better understanding of the topic that they are interested in.

To create a personalised home feed for de Volkskrant a horizontal scroll bar was added. This bar is presented after the two news blocks directly under 'Vandaag', the most relevant news of de Volkskrant for everyone at that point in time. The horizontal scroll bar says 'De belangrijkste verhalen voor jou' which means the most important stories for you. The under title says 'gebaseerd op jouw favoriete journalisten of thema's' which means based on your favourite journalists or themes.

The new interface aims to create a clear differentiation between the two types of offers. The news blocks directly under 'Vandaag' (Today), are on top and have the highest priority as defined by the journalists of de Volkskrant. The small blue line and the horizontal scrolling direction visually separate the personalised bar from the rest of the feed. The text has been chosen to be transparent on the personalisation and what it is based on.

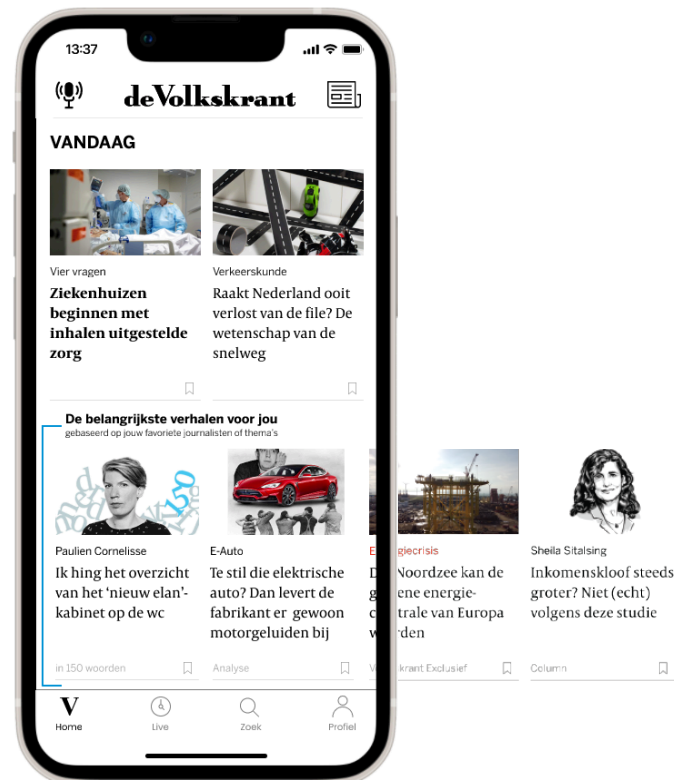
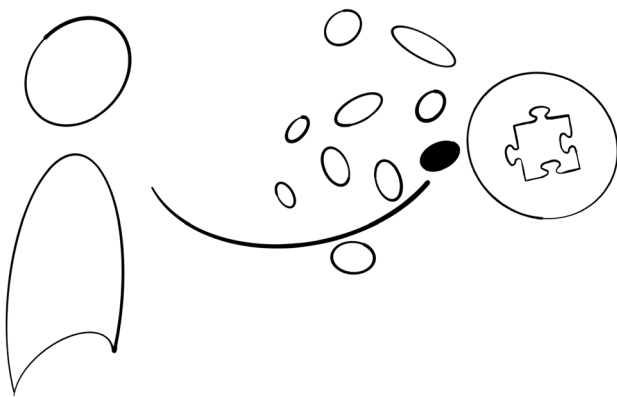


Figure 46: The home feed of the final design



The new home feed focuses on catalysing the process of picking the article that suits the current need of the reader. To always have a broad enough offer to be the right fit for the reader's current need. It does so through co-curation, it combines the curation of a journalist and the curation of an algorithm.

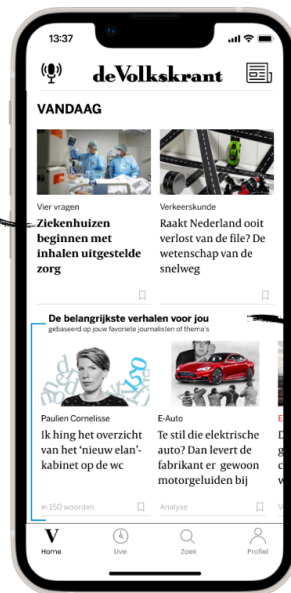
The combined feed presents the most important news events, as chosen by the site managers and news chefs, often fulfilling the need to be updated. And of top of that now also offers 'de belangrijkste verhalen voor jou' fulfilling the habits of the reader and suggesting stories that help the reader dive deeper into topics that they like, or broaden their perspective. This allows for other types of articles to be directly in your home feed, that might fulfil different needs than the 'update me' need.

Co-curation

Co-curation in the home feed is the result of the chosen personalisation principle 'need-based co-curation'. It allows for two ways to get an article to the home feed, through a journalist or through an algorithm and the two do not interfere with each other. The goal is not just to add personalisation to the current way of presentation, it uses the algorithmic addition to clarify the role of the sitemanager in curation. In this way the sitemanager can focus on the news and the algorithm can also pick non-news stories.



Human curation



Algorithmic curation

Algorithms - Bringing the niche articles to the right surface

The algorithm behind 'De belangrijkste verhalen voor jou' knows the preferences of the reader and helps the reader in three ways: fulfilling one's habits, deepening one's knowledge in specific topics and every now and then surprising the reader through a suggestion out of one's filter bubble.

Sitemanagers - Delivering on the promise of bringing the most important news.

The human curators of de Volkskrant are aware of what happens within the editorial team, what stories are the journalists currently working on and what special productions deserve special attention. They also have a clear overview of the most relevant news events. This information and the current skills of the sitemanager make sure that they can select the most important and latest news.

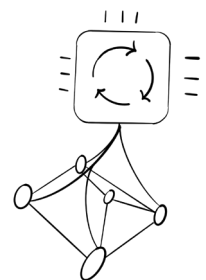


Figure 47: The co-curation implemented in the design

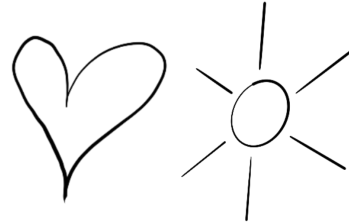
Algorithmic Selection

So what exactly does the algorithm select? The algorithm for 'the most important stories for you' selects the articles based on two goals for the reader. The first is to fulfil the reading habits of the reader, the second is to deepen and broaden through suggestions of different perspectives on themes read earlier. It does so based on the following types of data it collects about the users.

Fulfilling the reader habits

Favourite journalists

The first type of suggestions is based on the journalists that the reader follows. For example a favourite columnist that writes a column every week. The purpose of these suggestions is to help the reader fulfil the standard habits without having to look for it actively. This is a form of explicit personalisation, as the reader has to follow a writer.



Favourite themes

This type of suggestion is based on the themes that the reader follows. Following themes was a feature that was in demand in the user test. When a new article comes out directly related to this theme, a suggestion will be added to the personalisation bar. This is a form of explicit personalisation, as the reader has to explicitly follow a theme.



Deepening and broadening through suggestions and different perspectives

Suggestions from your favourite journalists

When a journalist that a reader follows finds an article or story (from another journalist) valuable, they can suggest this for their followers. These suggestions could be out of your filter bubble, as they might propose topics a reader might not normally read. The suggestions can be more appealing to the reader, as they are now related to a name the reader already knows. This is also explicit personalisation, as the reader has to follow the journalist.



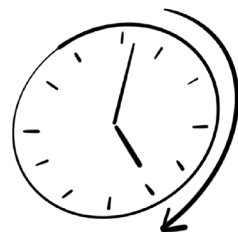
Suggestions based past behaviour

This is the only form of implicit personalisation for this design of the app. The algorithm selects suggestions based on the reader's behaviour. These suggestions can be categorised within three themes and will be discussed more in depth on the next page:

The follow-up of an earlier read series.

A deep dive into a topic that one has read an article about.

A different perspective on a topic.



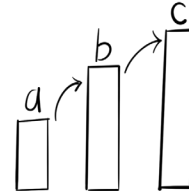
Suggestions based on the past

During the user evaluation of the concept the readers expressed the need that the new personalisation should work as simple as possible and would not demand too much input. That is why an implicit type of data collection was added. The suggestions that this data will give the reader are as follows:



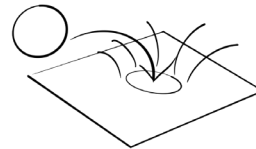
The follow-up of an earlier read series

When an article is part of a larger series, the chances are high that when a reader finishes the first (few) article(s). They will also like the next article of the series. These will be recommended through this input.



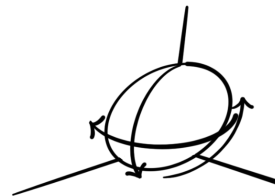
A deep dive into a topic that one has read an article about

What often happens at de Volkskrant is that a news article is published very quickly after a certain event, and a few hours or days later the in depth article appears. When a reader has read the news article, it will now also get the in depth article as a suggestion.



A different perspective on a topic

When a large interview has been published or a big news event has happened, multiple perspectives are published at de Volkskrant. When a reader has read a single perspective, other perspectives will be offered afterwards. The interview with Joris Luyendijk for example (Berkeljon, 2022), got reactions from columnists like Aaf Brandt Corstius (2022) and was later analysed in a reconstruction by Hassan Bahara (2022).



An overview of the new homefeed

An overview of the newly designed home feed concludes this first part of the final design. As the home feed is designed based upon the new style of de Volkskrant app, the graphics are different from the current app. The newly designed overview is based on the insights in research for other improvements and is optimised for the functionality of the personalised scroll bar.

The home feed starts with two articles, next to each other. When a large news event happens the sitemanager can choose to put just one article for extra emphasis. I chose this so the personalisation bar is immediately visible when opening the app. In the current app the two blocks are under each other and cover the full screen.



The title 'De belangrijkste verhalen voor jou' is chosen to show that it is specifically for you. Also the word 'verhalen' (stories) is chosen, because it is placed next to the news. This puts the responsibility for news more towards the site managers. The copy 'gebaseerd op jouw favoriete journalisten en thema's' explains to the reader why they see these articles. This decision was made based on the user evaluation.

The personalised 'De belangrijkste verhalen voor jou' bar is a horizontal scroll bar so that it is easy to scroll by when looking for regular news, but can still carry more than 2 articles.

The horizontal scroll bar was appreciated by the participants of the user test, it was clearly distinctive from the normal news articles and allowed for skipping when unnecessary in a certain use case. The small (circled) teaser of the next article in the scroll bar was a clear enough use cue to show it was a horizontal scroll.

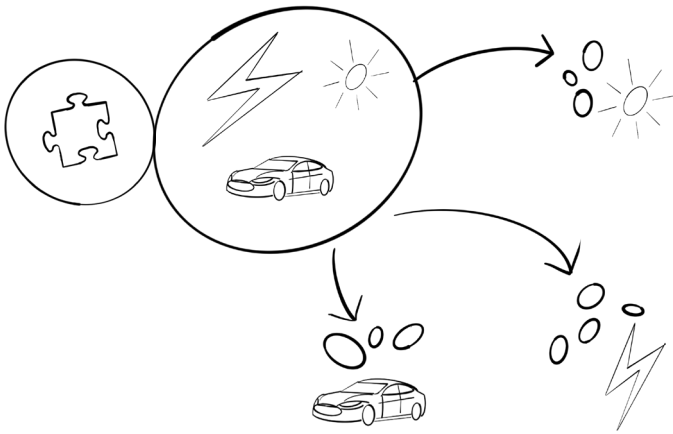
The amount of articles in the horizontal scroll bar is finite. Currently the amount is at six articles, this came from suggestions from the participants of the user test. This is not yet validated. The fact that it is finite is important, it makes sure that the bar does not distract from the rest of the feed and in this way it does not contribute to the feeling of overload. An infinite bar would be overwhelming.

All articles have the option to be saved to a reading list. When clicking a pop up will appear asking for what reading list to put it in. The test participants have said that one would be enough most of the time, the possibility to be extra could fit a selective group of readers and is therefore in the design.



After the bar the news list continues. Directly afterwards the best gelezen section comes up. This is longer than in the current app, from three to five. This is chosen to give readers the feeling of being socially up to date.

Figure 48: The overview of the homefeed



The moment a reader finishes an article, the reader values the content of the story. A meaningful moment to facilitate the process of reading further into the subject. Currently three suggestions picked by the journalist are presented in the app, the newly personalised design adds new functionality.

The new interface at the bottom of each article is now partly personalised and is designed to allow the reader to continue reading after finishing an article that they liked or found interesting. The goal of this new interface is to offer the reader the possibility to dive deeper into a certain theme, or discover the context of the article.

Through a newly designed interface at the bottom of an article the reader is offered new possibilities to create a better understanding of the topic that they are interested in. To get a better understanding the reader has three possibilities:

- Dive deeper into the theme they found in interesting in the article
- Discover the context of the writer and see if there is earlier work about it
- Save the article to share and discuss it later, or read it again.

These possibilities allow the reader to make a better use of the possibilities of a digital news platform. These features help the reader to build their knowledge on a specific topic and keep doing so in the future.



Figure 49: The interface at the bottom of an article in the final design

Three new functionalities

The new interface offers three new functionalities as opposed to the current one, while still aiming for the calmth that the participants of the user evaluation were looking for. The following three functionalities have been added to the design:



A short profile of the journalist that wrote the article, adding a short introduction to the name of the journalist. It is possible to follow the journalist, to keep track of this author's stories in the future. The profile is clickable to find a more extensive profile and recent publications.



The possibility to save the article to a reading list, when clicking the archive button. This button is now placed in the header so it is available throughout the whole article.

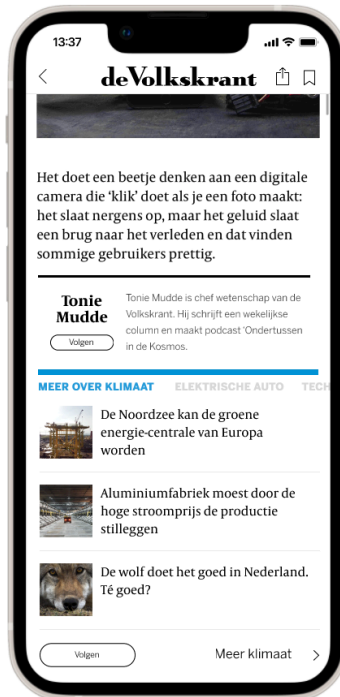
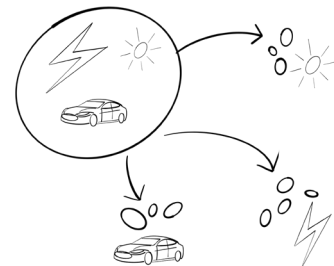


Figure 50: The three new functionalities in the interface

The 'meer over' section is based on themes. It allows the reader to select which theme they want to continue diving in. It also allows the reader to follow such a theme.



The journalist of the article

The first addition to the interface is the overview of the journalist profile. The name of the journalist and a short introduction are presented, as well as a follow-button. When clicking the name of the journalist, a new interface opens with a profile for the journalist, this includes the same introduction with an additional search bar for the articles and podcasts of this journalist. Afterwards a list is presented with the most recent publications and (if available) recommended podcasts by de Volkskrant. The picture has been left out consciously, the results of the user tests showed that this was not an addition.

The addition of a journalist introduction text and a profile allows for an understanding of the perspective of the journalist, immediately after reading an article. The text and the recent articles tell about the expertise of the journalist. The podcast picks have been added, the users in the user test appreciated this. Picking the right new podcasts is difficult in the overload that exists, that is why recommendations from credible people are appreciated. The journalist profile will also be findable through the search functionality.

**Tonie
Mudde**

Tonie Mudde is chef wetenschap van de Volkskrant. Hij schrijft een wekelijkse column en maakt podcast 'Ondertussen in de Kosmos'.

Volgen

Figure 51:
The journalist introduction and follow button



Figure 52:
The journalist profile

The follow button is an important addition for the personalisation on the home feed. It is an explicit trigger for the algorithm and will make sure that the reader will see the future stories of this journalist. For future research it could also be that this would give notifications to a reader, when a new article arrives.



Archiving an article

The archive button has a location in the header of every article, when clicking the article an overlay opens. This allows you to add it to one of your reading lists, create a new one or cancel.

This feature makes it easy to pick the right reading list and allows for endless new lists. When first using the app a 'Read later' list is already presented. User tests showed that most readers are very likely to just use one list for things to remember or read later. This functionality allows for this, but also facilitates building up themed reading lists for those interested..



Figure 53: The new header for the article page

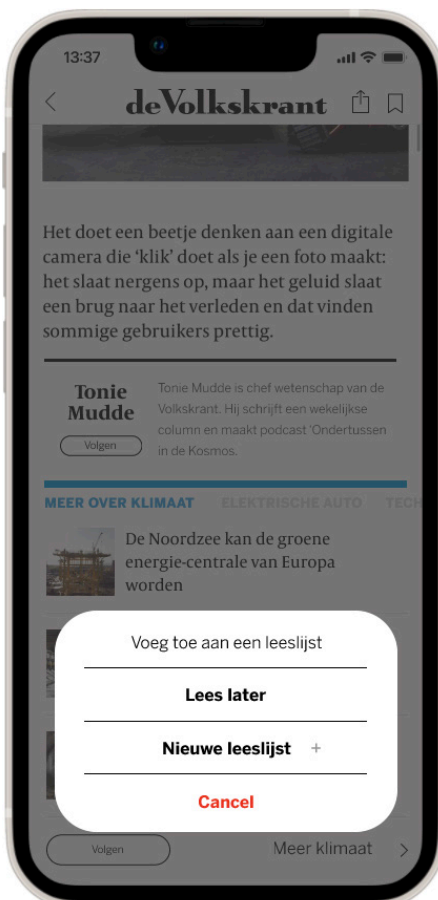


Figure 54: The pop up to save an article

The reading lists do not function as part of the input for the personalisation algorithm for the home feed. When opening the reading lists, it shows all articles that have been added to the list.

Within the prototype the reading lists were at core of the personalisation, giving clear information on what readers found interesting. This seemed inconvenient and indirect for the users. The data for the algorithm that was collected through the reading lists has been replaced with implicit information addressed in 'suggestions based on past' (the page before 75) and explicit information of following the favourite journalists and themes. That is why it is now left out of the personalised recommendations on the home screen. If a user is interested in a certain theme now they are able to just follow it directly.

Diving deeper into a theme

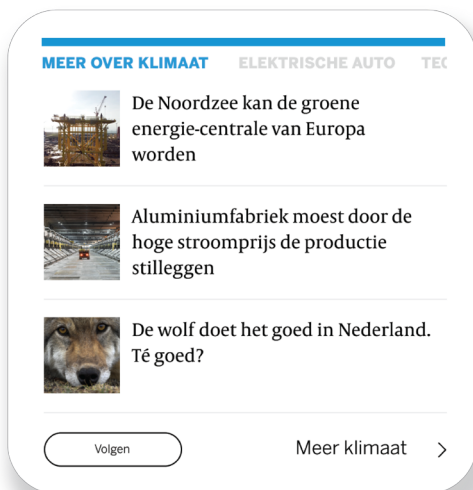
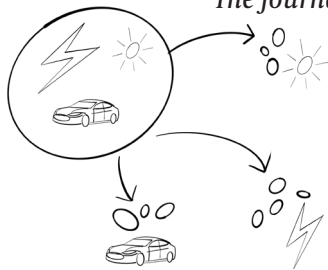


Figure 55:
The journalist profile



The overview of the 'doorleesmenu'

The goal of the layout of the interface at the bottom of the article was to facilitate continuous reading just enough. The goal is not to nudge people into clicking more, it is to offer context and allow for deepening further into a topic while retaining the calm look that fits de Volkskrant. This interface may not distract from the actual content.

The form of this design is a stripped version of the form in the prototype. The 'verder vandaag' has been removed, as well as the picture of the journalist. The split is in the blue divider. The part above is focused on the journalist giving context to the

The final addition to the current app is the themed 'meer over' section. In the current app, three suggestions are selected by the writer of the article. In this new feature three suggestions are picked based on the themes of the article. If the reader is interested in a certain theme, they are also able to follow the theme there. This is an explicit input for the personalisation algorithm, when following a theme new articles within this theme will be displayed in the 'belangrijkste verhalen voor jou' on the home feed.

In the presented figure 55, the article was about a new development in electric cars. For this subject three themes were linked: climate, electric cars and technology. Depending on the interests of the reader these are arranged in a certain order. Within the user interviews this was a feature that

was applauded by all participants.

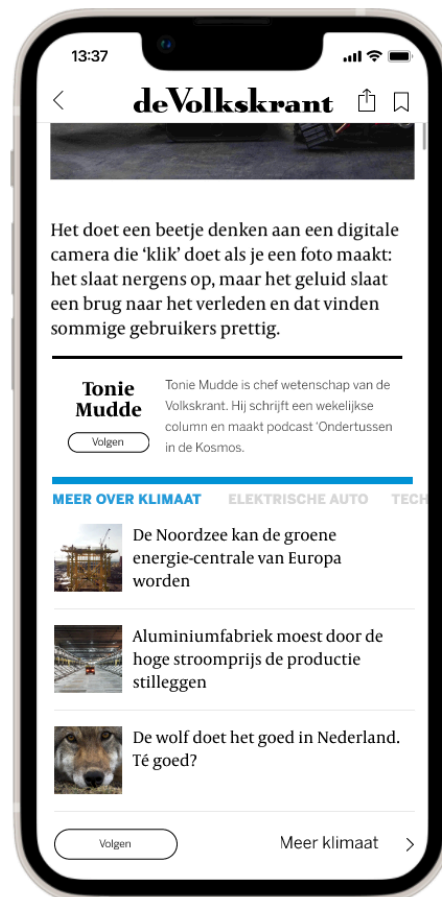
These themes can be automatically recognised and prioritised through a system developed by the NAT-team at DPG Media. In that way the system is already able to prioritise the best fitting themes and select the three most relevant ones.

An important addition after the user test was also to add an extra possibility called 'meer over dit artikel' (more about this article). This offers articles that are mentioned within the article or if the article is part of a series the rest of the series. Later on also reactions to the article could be placed here, for example a critical column after an interview. This serves to give different perspectives to the topic or offer sources directly to the reader.

article. The suggestions and themes part underneath allows for directly continuing to read in similar topics, focused on a direct deep dive.

The button for archiving the article to the reading list has been moved to the header. That allows for stopping halfway through the article to save it for later. By the button being in the header, this button is available throughout the whole scroll.

Figure 56:
The journalist profile



The final design now consists of two main new functionalities for the app of de Volkskrant. The personalised horizontal scroll bar to 'Get the readers to the right article...' adds algorithmic curation to the current home feed of de Volkskrant and het Doorleesmenu allowing for more reading when a reader liked a certain article.

The home feed allows for a different kind of content than normally displayed there. This would allow the reader to fulfil their reading habits and stay up-to-date with their favourite themes and journalists. Through the different kinds of the inputs, the selection should be diverse and should be able to provoke a feeling of serendipity. This fulfils the need of being surprised by the newspaper. The final need it could help achieve is the creation of a better understanding, through recommending in depth articles or continued articles from a certain theme.

The effect of serendipity has not been tested yet, as the personalised content was not part of the user evaluation. The horizontal scroll bar was appreciated, as it communicated clearly that it was chosen by an algorithm

and was easy to use and easy to skip when unnecessary. The location of the scroll bar on the home feed should still be studied, currently it is directly after the two main articles but in practice it could be after the newlist or best read articles as well.

The storyline of het Doorleesmenu focuses on creating a better understanding of a certain theme or the author who wrote the article. This screen also allows the reader to follow this journalist or a specific theme for later recommendations in the 'most important stories for you' bar. The articles can now also be saved during the whole reading process, so it can be saved when there is no time to read an article in full.

The redesigned Doorleesmenu is a lot calmer than in the user evaluation, which was the main feedback. The participants of the user test praised the themed 'meer over'-section and that is something to start working on for the current app. The possibility to save articles should be kept implemented as well. The exact content of what should be in the introductions should still be studied and discussed with a more diverse group of journalists.



Looking ahead

11

As the final design is finished, it is now time to look beyond the project. What were the biggest learnings throughout this project, does the final design fit the design brief and what are the best next steps? DPG Media has officially planned to start

working on personalisation again from July on. So, what do I think will help them do it in the best way possible?. This chapter then ends with a personal reflection, marking the end of this thesis.

My project has been a great exploration of what personalisation has to offer to journalism. It combined the perspective of the journalists, readers and product to study the impact of personalisation on the news. A start has been made to show that it can help improve the journalistic experience of readers and be of an added value for journalists getting the right articles to the right readers.

The combination of all these different perspectives have been the most valuable part of my project. Within the product development the idea for personalisation was already alive, this department is very much focused on creating direct improvements for the current services of

the app. I focused on creating a more thorough study, to test different types of personalisation with readers and use journalists' input on this topic.

The journalists were not immediately enthusiastic on the topic of personalisation, it could take away the guidance that the human curation has to offer and might limit the perspectives of the readers. Through involving them into every step of the design process, I could say there is at least a spark of interest in some of the journalists of de Volkskrant and an understanding of the potential that personalisation has to offer for the future: a big win if you ask me!

But I won't be in a filter bubble, right?

When first diving into personalisation the fear of filter bubbles and echo chambers is the first thing I ran into. These phenomena should be avoided no matter what happens. Now I wonder if that is the truth. I found two of my learnings on these filter bubbles and how to use them to create successful (partly) algorithmically curated news platforms. And don't get me wrong, I still strive to make a broad perspective as accessible as possible for every reader.

Focus on news diversity, not on the avoidance of filter bubbles.

A filter bubble is a complex term. It is hard to define when a reader gets trapped in a filter bubble and when it is gone again. The lack of clarity leaves you with an unclear problem to solve, an absolute no-go for designers. On top of this lack of definition, the term filter bubble causes many very vocal reactions already.

Forcing people into reading the whole spectrum is also not a solution, and too many nudges do not fit a newspaper that strives for objectivity. Instead, you would

want to facilitate their possibility to dive into whatever they feel fits them or is relevant to them at that moment.

I now believe that news diversity should be the focus in that case. It lets go of negative framing, studies propose ways to achieve it, and news diversity is measurable (Source Mattis et al. 2021). Would you as a news platform want to fulfil all of Shiskin's needs, show a broad set of themes or (hopefully sooner than later) want to display articles from a diverse group of journalists. These are goals to strive for.

It is not always bad to be in a bubble, as long as you are aware of it.

This is the second learning, people sometimes enjoy being in their bubble. And most of the time it can't do any harm. Reading on your favourite football team, celebrity or political party is perfectly normal. What does need to change though is that it should be clear that you are in that bubble. Transparency is the most important part. Showing a user that they are in a bubble and also offering a way out of it, when they do not want to be in it anymore.

A common (visual) language

During my first round of explorative interviews with journalists and readers, I found an aversion against the concept of personalisation, often based on poor earlier experience and negative associations from the news or social media. And even though I knew that personalisation goes beyond these associations. It created a difficult start, as I looked for ways of proving that they were wrong instead of focusing on my design goal.

The creation of my first visual prototype switched this mindset. The evaluation of my design with readers resulted in conversations about the functionality instead

of the term personalisation. The readers saw the potential of the concept.

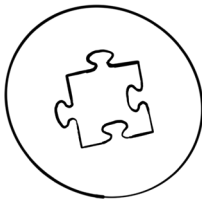
The prototype was presented to the different stakeholders internally with a visual presentation and clear, simple explanations of the parts of the designs and why they had been designed in this way. As it was easy to understand, all stakeholders could ask their questions and share my excitement about this design project, proof of the value of finding a common language.

The most important insights found in this study have been implemented in the final design, but to take this project to the next level in the future some steps are to be made. It is now official that the product development department at DPG Media will use my thesis for their projects this year, so here is what I would like to tell them.

The right content

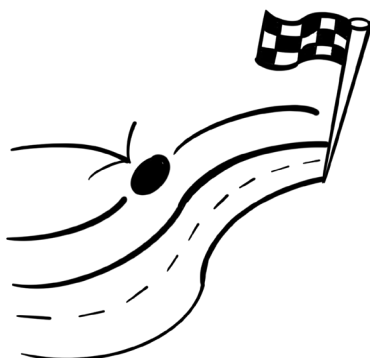
Getting the right content to the right readers is the main area that still needs a lot of research. What type of personalised content do readers appreciate and what does it achieve for them. In my final design I have presented types of content that fulfil your habits and content that can sometimes push a reader outside of their perspective a bit. What balance would a reader appreciate? And how much serendipity would a reader appreciate? These are studies that I look forward to seeing.

To test this the right user characteristics should be defined that can be matched with article characteristics and it should be tested over a longer period of time. Studying what DPG Media defines as a surprising suggestion and what type of content readers perceive as surprising. These developments go together with the more advanced developments of the algorithms. A more intense collaboration between the product development department and the machine learning area is something I am excited about.



Personalisation as a means and not as a goal

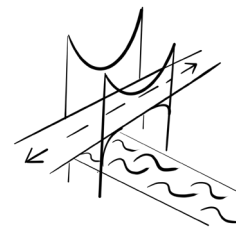
My project departed from exploring the possibilities of personalisation and how it could help improve journalism and the user experience. But personalisation has always been the means and not the goal. The problems that users currently experience, such as the overload of content they see every day and the fact that not all their news needs are fulfilled currently can be solved in many different ways. Starting up discovery projects for different ways to solve this in the future could lead to different digital innovations that help de Volkskrant achieve its' mission.



Bridging the gaps

In order to create a future proof newspaper and digital news platform I believe two gaps need to be bridged. The first is the gap between the journalists and the product development department. The journalists are also users of the platform and have a great vision on the presentation of the news. On the other side the journalists need to grow into a more digital-first mindset, exploring the new possibilities of digital developments.

The second bridge that has a lot of potential is the bridge between journalists and the readers. Interaction between these has a lot of potential, currently this does not really happen. Seeing of communication on the platform could be valuable or involving journalists in user tests could be a great addition to the expertise of the journalists. For the journalists it could be very valuable to see how readers use their digital platform, what they find important in their news and can give input on the articles.



Create a concept car

The current processes of the product development teams are very much focused on what needs to happen this year. As a lot of new titles are built upon the Selectives-platform and some issues with the current apps are the priority, this sometimes leads to a lack of time for projects on the future of the platforms. As the connection between some of the stakeholders can sometimes be difficult, a (visual) vision could help get the different teams within the department aligned. So a team that spends some time on a concept car for the future of news, might help with the developments that have to start today.



Design a personalised digital news service, that fits the vision and mission of de Volkskrant. It should limit the overload of news content, while offering a diverse set of articles to not just update the readers, but guide them in a better understanding of the news and occasionally surprise the reader with new topics and insights. This will facilitate the process of broadening the horizon for the reader and improve their reading experience.

This was the design goal formulated in the design brief. Throughout the design process this was continuously taken into account. When the user tests with the prototype took place, it was the time to test how this worked out for the users. What was great to see is that the reactions to the personalisation were really positive. The interactive prototype offered the users concrete examples of the ways personalisation could add to their news experience.

The personalised home 'belangrijkste verhalen voor jou' bar clearly communicated the personalisation to the users and was seen as a nice addition to the current home feed. A quote that stuck with me in the user evaluation was:

'The current home feed is way too long, it is confusing. It takes a lot of time to find the right articles.'

This felt like confirmation and gave energy to further develop the project. Showing the prototype to the users and the initial validation sessions with the two stakeholders at DPG Media and de Volkskrant gave confidence that the design was on the right track. It also validated the track of the design brief.

The biggest topic I struggled in defining was also validating whether it would help to limit the overload news readers can experience in combination with the need for diversity and not creating filter bubbles. The news diversity and the lack of filter bubbles were confirmed during the user tests, the lack of overload was mainly confirmed in the fact that the prototype could help guide the users to topics they found interesting and the new home feed gave them a clear overview. When a news platform does not provide a clear offer and overview that can lead to the feeling of overload.

The end of this project feels more like the start of a new project. My project has offered an overview of a combination of multiple perspectives on personalisation.

The impact of the project is shown through the change of perception of personalisation I have observed throughout my project. The cherry on top is the fact that the product teams will actually start working with the insights from my project. Finding mutual enthusiasm throughout the project was one of the most difficult parts.

I believe journalism is done with an idealistic view, an idea that journalism fulfils an important role in democracy and that objective journalism can really broaden the perspective of the reader. The initial approach of my project was really focused on this principle. During the design process I noticed that this would mainly help me as a personal driver and motivation, but different values were asked within DPG Media. Also from users that just want to read the news, I learned that this project could also be more user-centred. Not just to improve de Volkskrant's impact on society, but improve the app on the level of an individual. Reducing time to find articles that they find different, making it easier to find what they are looking for and allowing them to dive deeper into the topics they find interesting. A better user experience could then help the user to understand the news and stick to de Volkskrant.

A balancing act between idealism and being a commercial company. Within DPG Media this idea is definitely alive, but the work is mostly commercial. As a graduation intern, I feel very grateful to be able to spend more time on idealistic ideas and discussing this with internal stakeholders, readers and also external experts. This is what will stick with me after the graduation

The start of the project was difficult, because I felt the need to prove that personalisation does not directly drive you into a rabbit hole. That made me do two things: prove that personalisation is cool and prevent rabbit holes. These were not drivers that helped me convey my view on what de Volkskrant could be in a few years. When working on the design brief I found that I should take a step back, what do I want to achieve for de Volkskrant? What could personalisation bring? And what problems that users currently face could solve it? This approach created space for novelty, as I was not battling these prejudices anymore.

After this the design process felt more natural, with the gained knowledge of the first few months and discussing the personalisation principles with readers, journalists and colleagues at DPG Media, the design process felt natural. The great help I got from my company mentor and also the figma days I spent with my fellow intern were great fun and also helped me to get my ideas to a more concrete design.

Looking back now I have not just learned about the culture within journalism and the publishing companies, I have also tried to help it evolve. The cultural value for such a project was much more important than I anticipated when starting this project and I have noticed this was probably the part that gave me the most energy. Being able to use design skills, such as creating an interface, as tools to reach a bigger goal. The fact that I have now experienced this, made this whole project feel like a great success and allows me to leave the Industrial Design Engineering faculty with confidence to quickly dive into a new adventure again!

- Abdollahpouri, H., Malthouse, E. C., Konstan, J. A., Mobasher, B., & Gilbert, J. (2021). Toward the Next Generation of News Recommender Systems. *Companion Proceedings of the Web Conference 2021*.
<https://doi.org/10.1145/3442442.3452327>
- Bahara, H. (2022, February 16). Hoe zelfbenoemd 'zevenvinker' Joris Luyendijk het middelpunt werd van een mediastorm. *de Volkskrant*. Retrieved from <https://www.volkskrant.nl>
- Berkeljon, S. (2022, February 5). 'Ik zeg: we moeten het gaan hebben over de mannetjes zoals Joris Luyendijk'. Retrieved 2 March 2022, from <https://www.volkskrant.nl/mensen/ik-zeg-we-moeten-het-gaan-hebben-over-de-mannetjes-zoals-joris-luyendijk~bbd8b9ad/>
- Bernstein, A., C, V., & Helberger, N. (2021). Diversity in news recommendation. *Diversity in News Recommendation*.
- Chris Best and Hamish McKenzie. (2017, July 18). A better future for news. Retrieved 1 March 2022, from <https://on.substack.com/p/a-better-future-for-news?s=r>
- Corstius, A. B. (2022, February 6). Luyendijk wilde op de cover met zijn rug naar de camera staan. Dat lukt alleen de hele groten. *de Volkskrant*. Retrieved from <https://www.volkskrant.nl>
- de Correspondent. (2013, September 30). Manifest. Retrieved 1 March 2022, from <https://decorrespondent.nl/manifest>
- Diakopoulos, N. (2014). Algorithmic Accountability. *Digital Journalism*, 3(3), 398–415.
<https://doi.org/10.1080/21670811.2014.976411>
- Diakopoulos, N., & Koliska, M. (2016). Algorithmic Transparency in the News Media. *Digital Journalism*, 5(7), 809–828. <https://doi.org/10.1080/21670811.2016.1208053>
- DPG Media. (2021, March). *Wie is de online lezer van de Volkskrant?*
- European Publishing Congress [EPC]. (2021, June 18). Pieter Klok 'An extremely creative newspaper' (EN) [Video file]. Retrieved from <https://www.youtube.com/watch?v=BbdGZhTXnHM>
- Fan, H., & Poole, M. S. (2006). What Is Personalization? Perspectives on the Design and Implementation of Personalization in Information Systems. *Journal of Organizational Computing and Electronic Commerce*, 16(3–4), 179–202. <https://doi.org/10.1080/10919392.2006.9681199>
- Fink, K. (2018). The biggest challenge facing journalism: A lack of trust. *Journalism*, 20(1), 40–43.
<https://doi.org/10.1177/1464884918807069>
- Flaxman, S., Goel, S., & Rao, J. M. (2016). Filter Bubbles, Echo Chambers, and Online News Consumption. *Public Opinion Quarterly*, 80(S1), 298–320. <https://doi.org/10.1093/poq/nfw006>
- Follow the Money - Platform voor onderzoeksjournalistiek. (2020, May 20). Over Follow the Money. Retrieved 2 March 2022, from <https://www.ftm.nl/over-ftm>

- Friis Dam, R. (2021, January 2). The MAYA Principle: Design for the Future, but Balance it with Your Users. Present. Retrieved 3 March 2022, from <https://www.interaction-design.org/literature/article/design-for-the-future-but-balance-it-with-your-users-present>
- Goligoski, E. (2022, January 22). We've spent two years studying readers' & listeners' needs of The Atlantic. Retrieved 1 March 2022, from <https://building.theatlantic.com/weve-spent-two-years-studying-readers-listeners-needs-of-the-atlantic-2a84ff9a57d1>
- Hofstede, S. (2020, November 25). Gaat de journalistiek door een vertrouwenscrisis? Er lijkt eerder sprake van een kloof. Retrieved 2 March 2022, from <https://www.svdj.nl/nieuws/gaat-de-journalistiek-door-een-vertrouwenscrisis-er-lijkt-eerder-sprake-van-een-kloof/>
- Jongerius, P., Offermans, A., Vanhoucke, A., & Sanwikarja, P. (2013). *Get Agile!* Zaltbommel, Netherlands: Van Haren Publishing.
- Majid, A. (2021, October 28). Membership funding journalism: Exclusive ranking of top brands. Retrieved 2 March 2022, from <https://pressgazette.co.uk/membership-funding-journalism/>
- Mattis, N., Möller, J., & van Atteveldt, W. (2021). Nudging news diversity: A theoretical framework for facilitating diverse news consumption through recommender design. *Nudging News Diversity: A Theoretical Framework for Facilitating Diverse News Consumption through Recommender Design*.
- The MAYA Principle: Design for the Future, but Balance it with Your Users. Present. (2021, January 2). Retrieved 3 March 2022, from <https://www.interaction-design.org/literature/article/design-for-the-future-but-balance-it-with-your-users-present>
- McLennan, D., & Miles, J. (2018, March 21). A once unimaginable scenario: No more newspapers. Retrieved 2 March 2022, from <https://www.washingtonpost.com/news/worldpost/wp/2018/03/21/newspapers/>
- Möller, J., Trilling, D., Helberger, N., & van Es, B. (2018). Do not blame it on the algorithm: an empirical assessment of multiple recommender systems and their impact on content diversity. *Information, Communication & Society*, 21(7), 959–977. <https://doi.org/10.1080/1369118x.2018.1444076>
- Moran, R. E., & Nechushtai, E. (2022). Before reception: Trust in the news as infrastructure. *Journalism*, 146488492110489. <https://doi.org/10.1177/14648849211048961>
- Motivaction. (2021, January). *Motivaction Mediaprofielen: Mediadoelgroepen in Nederland*. Author.
- Newman, N. (2021, January 7). Journalism, Media, and Technology Trends and Predictions 2021. Retrieved 1 March 2022, from <https://reutersinstitute.politics.ox.ac.uk/journalism-media-and-tech-trends-and-predictions-2021>
- N.V.J. (2022, February 10). Code voor de journalistiek. Retrieved 2 March 2022, from <https://www.nvj.nl/themas/journalistieke-praktijk/ethische-regels/code-journalistiek>
- Okhuijsen, S. (2017, April 1). De papieren krant sterft in 2035 (column). Retrieved 2 March 2022, from <https://www.rtlnieuws.nl/economie/column/140756/de-papieren-krant-sterft-2035>

- Owen, L. H. (2018, June 6). All the news that's fit for you: The New York Times' "Your Weekly Edition" is a brand-new newsletter personalized for each recipient. Retrieved 2 March 2022, from <https://www.niemanlab.org/2018/06/all-the-news-thats-fit-for-you-the-new-york-times-your-weekly-edition-is-a-brand-new-newsletter-personalized-for-each-recipient/?relatedstory>
- Patton, M. Q. & Sage Publications In. (2014). *Qualitative Research & Evaluation Methods* (4th ed.). Thousand Oaks, Canada: SAGE Publications.
- Postma, O. J., & Brokke, M. (2002). Personalisation in practice: The proven effects of personalisation. *Journal of Database Marketing & Customer Strategy Management*, 9(2), 137-142. <https://doi.org/10.1057/palgrave.jdm.3240069>
- Quandt, T., Frischlich, L., Boberg, S., & Schatto-Eckrodt, T. (2019). Fake News. *The International Encyclopedia of Journalism Studies*, 1-6. <https://doi.org/10.1002/9781118841570.iejs0128>
- Song, H., Jung, J., & Kim, Y. (2016). Perceived News Overload and Its Cognitive and Attitudinal Consequences for News Usage in South Korea. *Journalism & Mass Communication Quarterly*, 94(4), 1172-1190. <https://doi.org/10.1177/1077699016679975>
- Statt, N. (2021, February 24). Facebook will match Google's \$1 billion news investment after Australia showdown. Retrieved 2 March 2022, from <https://www.theverge.com/2021/2/24/22299229/facebook-one-billion-investment-news-industry-australia-google-regulation>
- Woudstra, J. (2020, October 28). 5 questions about user needs with Dmitry Shishkin | smartocto. Retrieved 1 March 2022, from <https://smartocto.com/blog/5-questions-about-user-needs/>
- Zhou, S., Kiesow, D., & Guo, L. (2021). The Values of Print: Affordances and Sensemaking for Newspaper Consumers. *Journalism Practice*, 1-18. <https://doi.org/10.1080/17512786.2021.1910984>