



CENTRIC 2020

Impact of Advertising Intensity on Customer Churn for Web-Mail Services: Insights from a Customer Survey in Germany

Presenter: Jasmin Ebert

CAEBUS Center of Advanced E-Business Studies

RheinMain University of Applied Sciences, Wiesbaden, Germany

Authors: Jasmin Ebert, Stephan Böhm, Christian Jäger, Frank Rudolf

e-mail: jasebert@web.de, stephan.boehm@hs-rm.de



Agenda

- 1. Introduction**
2. Research Background & Objectives
3. Approach & Study Design
4. Results
5. Conclusions & Limitations
6. Outlook & Future Research



1. Introduction

Web-mail Services and Usage in Germany

- Industry study among customers of the web-mail offering of Deutsche Telekom, one of the popular web-mail services in Germany
- E-mail usage of Internet users in Germany increased from 38 percent in 2002 to 86 percent in 2019 [1]
- Thirty-five percent use more than one e-mail service
- Strong competition between German e-mail providers
- Customer loyalty is becoming increasingly important



1. Introduction

Web-mail Offering of Deutsche Telekom

- Deutsche Telekom is a leading European telecommunications company with headquarters in Germany
- Deutsche Telekom has over 184 million mobile customers, 27.5 million fixed-network lines and 21 million broadband lines [2]
- In 1995, the first mail service for the German mass market was launched under the T-Online brand
- In 2019, more than 2.5 billion e-mails were received daily via T-Online e-mail addresses [3]



1. Introduction

Increasing Importance of Online Advertising

- In 2017, the Internet replaced classic television as the world's most popular advertising medium [4]
- Internet ads will increase from 39 percent of total global spending to 49 percent in 2017 percentage until 2021 [4].
- Global spending on online advertising is expected to increase from USD 273 billion in 2018 to USD 427 billion by 2022 [5]



1. Introduction

Advertising Trends globally and in Germany

- Since 2017, global spending on mobile advertising has been 109 billion USD, exceeding desktop advertising spending of 104 billion USD [4]
- Gross expenditure on desktop ads in 2019 rose by only two percent compared to 2018
- Focus of online advertising concepts should be increasingly directed towards mobile, as the use of mobile devices and access to Internet offerings will increase significantly [10]
- Regarding Germany in 2018: Gross advertising expenditure totaled nearly EUR 12.6 billion, with desktop ad accounting for EUR 0.97 billion and mobile ad for EUR 0.36 billion [9]
- Global development of mobile ad media becomes increasingly visible in Germany: Growth of mobile ads in 2019 (from January to May) compared to 2018, increased by 26 percent [9]



1. Introduction

Growth of “Programmatic Advertising”

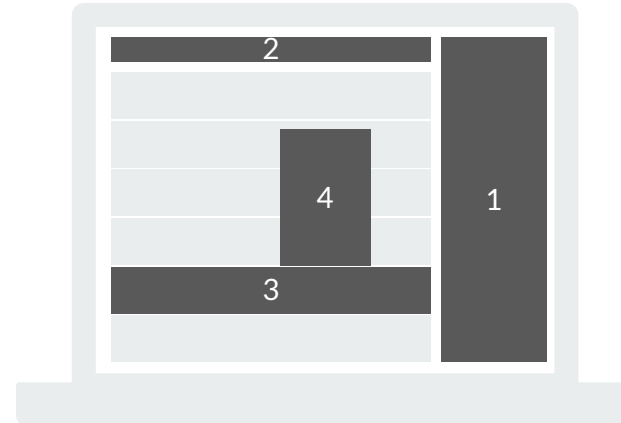
- Biggest growth is expected to be in display ads, due to high-quality content, better screens, Internet connections and the personalized approach to target groups thanks to “programmatic buying” [6].
- Programmatic buying or advertising refers to “... the automated purchase and sale of advertising space” [7]
- In the US, where digital ads generate the highest revenues worldwide, programmatic advertising is predicted to grow from 73 percent in 2017 to 78 percent by 2023 [8]

1. Introduction

Overview of Important Web Ad Formats

This overview shows the four most common online advertising formats for web-mail services within the desktop application.

Format	Screen Area	Description
Skyscraper	1	Vertical ad, static, animated or rotating
Text Link	2	Single-line ad text including hyperlink
Inbox Ad	3	Ad which is integrated into the message list
Transmission Confirmation	4	Pop-up appearing after an e-mail has been sent



Picture Source: Own Illustration



1. Introduction

Motivation

- Advertising is of great importance to Internet service providers, as their business models often depend on this revenue stream.
- Balancing act for providers between advertising financing and customer satisfaction
- Telecommunications industry is interested in predicting customer churn [11] because the sector is a rapidly growing and a highly competitive market [12]
- Customer churn has a direct impact on the competitiveness of a provider [13]. Thus, telecommunications companies often use churn as a KPI to make forecasts [14]
- High intensity of competition makes it more difficult for telecommunications companies to bind customers in the long term, as it is easy for users to switch between providers [12]



Agenda

1. Introduction
- 2. Research Background & Objectives**
3. Approach & Study Design
4. Results
5. Conclusions & Limitations
6. Outlook & Future Research
7. References



2. Research Background & Objectives

Related Work

- More and more sophisticated technologies supporting the process of selecting advertising messages relevant to users and deliver them with the lowest possible dispersion losses
- Placement of ads may be perceived as annoying/undesirable by users [15]
- Many studies focus on the opportunities for Internet providers to increase awareness of portfolios, to attract attention or to arouse buying interest among potential customers [16]



2. Research Background & Objectives

Research Gaps and Focus of this Study

- Besides a variety of approaches to measure customer satisfaction [17], there is a research gap in the investigation of negative effects of online ads on customer satisfaction
- Another research gap is the extent to which customer churn can be the result of excessive advertising by Internet service providers
- Apart from studies that analyze the effect of online ads from the perspective of Internet providers or customers (e.g. [6], [18]), there is a lack of studies combining both views



2. Research Background & Objectives


Research Objectives

- 01 Analysis of the users' perception of ads on the web-mail portal of Deutsche Telekom
- 02 Investigation of influences on customer satisfaction and the intention of web-mail users to churn
- 03 Evaluation of different ad formats and contents (e.g. personalization of ad content) and the parallel usage of e-mail service offers of competitors



Agenda


1. Introduction
2. Research Background & Objectives
- 3. Approach & Study Design**
4. Results
5. Conclusions & Limitations
6. Outlook & Future Research



3. Approach & Study Design

Analysis of Discriminant Factors


- Difficulty to divide customers into satisfied and dissatisfied customers. That is why it is investigated, if advertising is a discriminating/disruptive factor
- Discriminant analysis to identify distinguishing features and the significance of advertising intensity in the groups of users with and without the intention to churn
- Customers were divided into two groups: Churner = dissatisfied customers (Group A) and Non-churner = satisfied customer (Group B)



3. Approach & Study Design

Confirmation-Disconfirmation-Paradigm

- Customer satisfaction results from target-performance comparison between various intentions and requirements of potential customers with the subsequent individual experiences during actual use [19]
- Comparison of expectations and experiences is also known as Confirmation-Disconfirmation-Paradigm (C/D-Paradigm) [19]
- C/D-Paradigm forms the basis of many models for measuring customer satisfaction, such as the generally common Kano-Method [19]



3. Approach & Study Design

Empirical Survey

- 2,228 participants, randomly selected (1/400 per login) among visitors of the web-mail portal
- 12 day online survey period in May/June 2019 using the question tool software Typeform
- Measurement of the influence of online ads on customer churn using IBM SPSS Statistics
- Focus on usage of the e-mail portal on the desktop browser, willingness to change main provider and identification of disruptive factors



Agenda

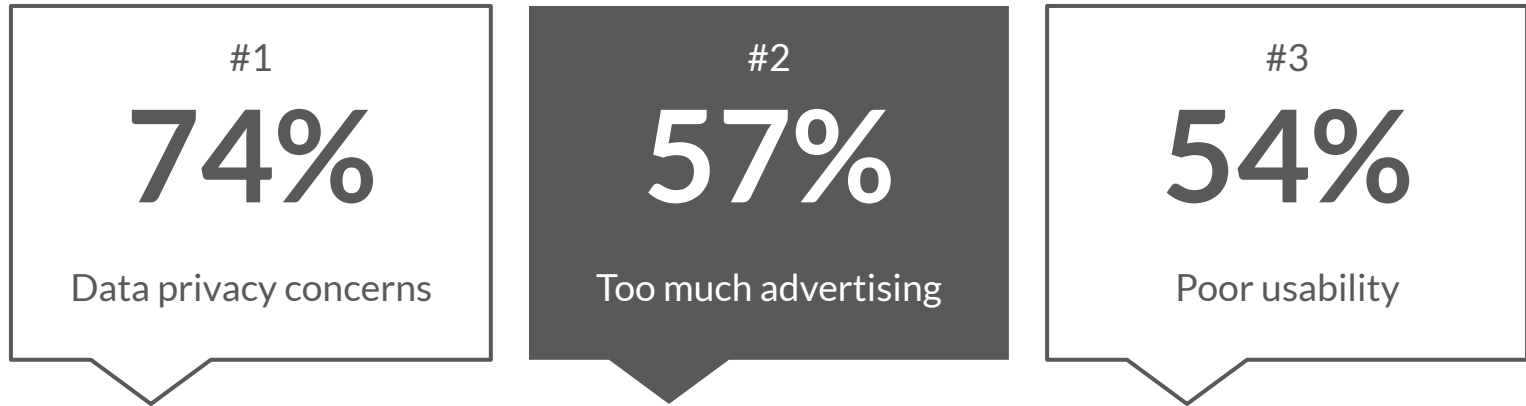
1. Introduction
2. Research Background & Objectives
3. Approach & Study Design
- 4. Results**
5. Conclusions & Limitations
6. Outlook & Future Research



4. Results

Key Reasons for Changing Main Provider

Most common motive for users to change the provider is data protection (74%), followed by too much advertising (57%)...





4.Results

Further Reasons for Customer Churn

... while slow update speed/data transfer has only a very small effect on the customers' willingness to change.

Results of the Discriminant Analysis	Percentage
Recommendation of a friend/acquaintance	13%
A desire for change/new things to try	10%
Too few functional and configuration options	5.5%
Update speed/data transfer too slow	2%



4. Results

Detailed Advertising Preferences

87 percent would not accept a higher advertising volume even in return for more functionality.

Advertising Preferences of the Study Participants	Percentage
No acceptance for more ads in return for more functionality	87%
Generally, not more ads, even if personalized	84%
Static instead of animated advertising	83%
Acceptance of a higher ad volume in return for unlimited storage space	73%
Acceptance of a higher advertising volume in return for more spam protection	71%
No personalized ads for data protection reasons	58%



4. Results

Implicit Recommendations for Action


Not only for web-mail service providers, but also for advertisers, the following basic conditions can be considered as recommendations for action.

- **Text-Links** are the advertising format perceived as least disturbing
- Users attach great importance to **data protection** and the **usability** within the web-mail portal when it comes to reasons for changing their main provider
- Perception of online advertising as a **disruptive factor depends on age**: Young people feel less disturbed by advertising



Agenda


1. Introduction
2. Research Background & Objectives
3. Approach & Study Design
4. Results
- 5. Conclusions & Limitations**
6. Outlook & Future Research



5. Conclusions & Limitations

Conclusions

- A negative influence of a high advertising volume on the willingness to change the main web-mail provider can be verified
- High advertising volume plays a subordinate role alongside data protection concerns or poor usability
- The extent to which customer satisfaction ultimately triggers negative changes in user behavior, such as customer churn, depends on the respective provider. Telekom scores above average compared to its competitors



5. Conclusions & Limitations

Limitations

- Sample could be enlarged to avoid possible distortions and to represent the total population
- The inclusion of other web-mail services (e.g. from several countries) could increase the generalization of the results
- As this is still a preliminary study, the analysis is mainly explorative and no explicit research model, e.g. for the validation of cause-effect relationships, has been formulated



Agenda

1. Introduction
2. Research Background & Objectives
3. Approach & Study Design
4. Results
5. Conclusions & Limitations
- 6. Outlook & Future Research**



6. Outlook & Future Research

- The more intangible a service is, the more often satisfaction measurements should be analyzed [19]. Therefore repeated tests at regular intervals will be required [6]
- Connection between the influence of online ads on customer satisfaction and the pressure to monetize for advertising-financed Internet service providers could be examined
- It is advisable to determine how strongly placed ads are generally perceived by customers
- It would be conceivable to investigate the willingness to pay for web-mail services, e.g. to what extent customer satisfaction influences the willingness to pay [20]
- It would be interesting to know what leads to a homogeneous increase in ad volume for most services. Maybe, churn rates do not change for the same ad volume of competitors



Agenda

1. Introduction
2. Research Background & Objectives
3. Approach & Study Design
4. Results
5. Conclusions & Limitations
6. Outlook & Future Research
- 7. References**



References 1/4

[1] Statista, E-Mail – Anteil der Nutzer in Deutschland 2019, 2020. [Online]. Available: <https://de.statista.com/statistik/daten/studie/204272/umfrage/nutzung-des-internets-fuer-versenden-empfangen-von-e-mails-indeutschland/> [retrieved: 07/15/2020].

[2] Deutsche Telekom AG, Führender Europäischer Telekommunikations-Anbieter, 2020. [Online]. Available: <https://www.telekom.com/de/konzern/konzernprofil> [retrieved: 07/20/2020].

[3] Infosat, Telekom startet neue Email-Domain @magenta.de, 2019. [Online]. Available: <https://www.infosat.de/entertainment/telekom-startet-neue-email-domainmagentade> [retrieved: 07/20/2020].

[4] J. Barnard, Advertising expenditure forecasts march 2019: Executive summary, 2019. [Online]. Available: <https://www.zenithmedia.com/product/advertising-expenditure-forecasts-march-2019/> [retrieved: 07/20/2020].

[5] Statista, Programmatic advertising, 2018. [Online]. Available: <https://de.statista.com/statistik/studie/id/54223/dokument/programmatic-advertising/> [retrieved: 07/15/2020].



References 2/4

- [6] D. Ahlert, P. Kenning, and C. Brock, Handelsmarketing: Grundlagen der marktorientierten Führung von Handelsbetrieben, 2. Aufl. Berlin, Heidelberg: Springer Berlin Heidelberg, 2018.
- [7] Statista, Ausgaben für Online-Werbung weltweit in den Jahren 2013 bis 2017 sowie eine Prognose bis 2022 (in Milliarden US-Dollar), 2018. [Online]. Available: <https://de.statista.com/statistik/daten/studie/185637/umfrage/prognose-der-entwicklung-der-ausgaben-fuer-onlinewerbung-weltweit/> [retrieved: 07/20/2020].
- [8] Statista, Digitale Werbung, 2019. [Online]. Available: <https://de.statista.com/outlook/216/137/digitale-werbung/deutschland> [retrieved: 07/15/2020].
- [9] Nielsen, Nielsen bereinigter werbetrend, datenstand 17.06.2019: Werbetrend: Top trends im mai 2019. 2019. [Online]. Available: <https://www.nielsen.com/de/de/insights/reports/2019/top-ten-trends.html> [retrieved: 07/20/2020].
- [10] Cisco, Cisco visual networking index: Global mobile data traffic forecast update, 2017-2022, 2019. [Online]. Available: <https://davidellis.ca/wp-content/uploads/2019/12/cisco-vni-mobile-data-traffic-feb-2019.pdf> [retrieved: 07/20/2020].



References 3/4

- [11] A. Ahmed and D. M. Linen, “A review and analysis of churn prediction methods for customer retention in telecom industries,” in 2017 4th International Conference on Advanced Computing and Communication Systems (ICACCS), IEEE, 2017, pp. 1–7.
- [12] O. Adwan, H. Faris, K. Jaradat, O. Harfoushi, and N. Ghatasheh, “Predicting customer churn in telecom industry using multilayer perceptron neural networks: Modeling and analysis,” *Life Science Journal*, vol. 11, no. 3, pp. 75–81, 2014, ISSN: 1097-8135.
- [13] A. Sundararajan and K. Gursoy, Telecom customer churn prediction, 2020. DOI: 10.7282/t3-76xm- de75. [Online]. Available: <https://rucore.libraries.rutgers.edu/rutgers-lib/62514/PDF/1/play/> [retrieved: 07/20/2020].
- [14] A. Amin, S. Anwar, A. Adnan, et al., “Customer churn prediction in the telecommunication sector using a rough set approach,” *Neurocomputing*, vol. 237, pp. 242–254, 2017.
- [15] R. Bell and A. Buchner, “Positive effects of disruptive advertising on consumer preferences,” *Journal of Interactive Marketing*, vol. 41, pp. 1–13, 2018.



References 4/4

- [16] M. Hudak, E. Kianickova, and R. Madlenak, “The importance of e-mail marketing in e-commerce,” *Procedia Engineering*, vol. 192, pp. 342–347, 2017.
- [17] R. Milner and A. Furnham, “Measuring customer feedback, response and satisfaction,” *Psychology*, vol. 8, no. 3, pp. 350–362, 2017.
- [18] J. van Doorn and J. C. Hoekstra, “Customization of online advertising: The role of intrusiveness,” *Marketing Letters*, vol. 24, no. 4, pp. 339–351, 2013.
- [19] H. Meffert, M. Bruhn, and K. Hadwich, *Dienstleistungsmarketing: Grundlagen – Konzepte – Methoden*. 2018.
- [20] N. Koschate-Fischer, “Preisbezogene Auswirkungen von Kundenzufriedenheit,” In *Kundenzufriedenheit*, C. Homburg, Ed., Wiesbaden: Springer Gabler, 2016, pp. 93–121, ISBN: 978-3-658-08688-6.



Thank you!

Presenter: Jasmin Ebert, M.A.
CAEBUS Center of Advanced E-Business Studies
RheinMain University of Applied Sciences
Unter den Eichen 5
65195 Wiesbaden, Germany

Authors: Jasmin Ebert, Stephan Böhm, Christian Jäger, Frank Rudolf
e-mail: jasebert@web.de, stephan.boehm@hs-rm.de