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ANALYZING USER EXPERIENCE FROM NEGATIVE REVIEWS: THE SALESFORCE CASE STADY

Abstract

The mobile business represents a rapidly growing market where user experience has a crucial role in sustaining the business. Its evaluation has gained interest, both in industry and academia, as it directly affects user satisfaction and loyalty, thus, competitiveness and company revenue. This paper aims to point to the reach of topic modeling in user experience evaluation. It is an effective approach to identifying aspects considered negative by mobile application users, relevant as a guideline for product improvement. The authors demonstrate this in the SalesForce mobile application case study using topic modeling to analyze 2.501 user reviews collected from the Google Play Store. Research results indicate key shortcomings of the application: compatibility, unreliability, slow loading, and excessive notifications. The research presents an innovative approach to user experience analysis and offers practical solutions for improving the SalesForce mobile business application.

Keywords: user experience, mobile business applications, SalesForce, topic modeling.

JEL classification: C38, M30, D83, C80

НЕГАТИВНЕ РЕЦЕНЗИЈЕ У АНАЛИЗИ КОРИСНИЧКОГ ИСКУСТВА: САЛЕСФОРЦЕ СТУДИЈА СЛУЧАЈА

Апстракт

Мобилно пословање представља тржиште које рапидно расте, где корисничко искуство игра кључну улогу у одржавању пословања. Његова евалуација је постала предмет интересовања како у индустрији, тако и у академским круговима, јер директно утиче на задовољство корисника, њихову лојалност, а самим тим и на конкурентност и приходе компаније.

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Овај рад има за циљ да укаже на ефикасност примене моделовања тема у процени корисничког искуства. Реч је о приступу који успешно идентификује аспекате које корисници мобилних апликација сматрају негативним, а који су релевантни као смернице за унапређење производа. Аутори то демонстрирају кроз студију случаја мобилне апликације СалесФорце, користећи моделовање тема за анализу 2.501 корисничких рецензија прикупљених са Гоогле Плау продавнице. Резултати истраживања указују на кључне недостатке апликације: некомпатибилност, непоузданост, споро учитавање и прекомеран број нотификација. Истраживање представља иновативан приступ анализи корисничког искуства и нуди практична решења за унапређење мобилне пословне апликације СалесФорце.

Кључне речи: *корисничко искуство, мобилне пословне апликације, СалесФорце, моделовање тема.*

Introduction

In today's digital age, where companies of all sizes increasingly strive to provide exceptional user experiences, analyzing user satisfaction becomes a key factor for success. Understanding the needs, preferences, and problems of users not only allows companies to offer personalized product and service recommendations but also to build long-term relationships with their users and nurture their loyalty, which ensures continuous and stable revenue for the company. In this context, user experience research becomes an imperative and a crucial strategic decision for companies aiming to stay competitive and achieve long-term market growth (Khan et al., 2015; Becker & Jaakkola, 2020).

The focus of this paper is on the mobile business applications market, which has become increasingly challenging in recent years due to its rapid growth, making competitiveness highly dependent on managing the user experience. Specifically, the goal of this research is to point to the reach of topic modeling in user experience evaluation. Topic modeling is a modern analytical approach, which has recently gained popularity and is increasingly being used in the domain of user experience analysis (Nguyen et al., 2023; Papadia et al., 2023; Park et al., 2018). It belongs to natural language processing (NLP) techniques and enables the automatic discovery of topics from a collection of texts. By applying topic modeling on a collection of online user reviews it becomes an effective approach to revealing user attitudes, desires, and complaints by identifying aspects considered negative by mobile application users. Negative aspects are particularly important as they indicate areas for product improvement. In this study, the authors demonstrate how topic modeling can be utilized to identify the primary negative aspects of user experience with the Salesforce mobile application. SalesForce is selected for the case study as it is the most widely used Customer Relationship Management (CRM) application, with a 21.7% market share in 2023 (Vailshery, 2024). SalesForce provides companies with access to various functionalities for effectively managing interactions with current and potential customers to establish long-term relationships and improve sales. Authors collected 9.308 online user reviews of the SalesForce mobile application from the Google Play store using the google-play-scraper Python library for

data scraping. Using the star ratings authors created a subset of reviews containing only those rated with one and two stars, leaving 2.501 reviews for further analysis. These are considered as negative reviews. After pre-processing the data through steps of cleaning, tokenization, and lemmatization, the Latent Dirichlet Allocation (LDA) topic modeling was applied to identify key topics in negative reviews.

Within the scope of the previously outlined research, the authors sought to answer the following research question using empirical findings:

RQ: Which aspects negatively influence SalesForce mobile application user experience?

The structure of the paper is divided into three main parts. By reviewing relevant literature, the first chapter provides an overview of relevant views on user experience, including the importance of user reviews and online evaluations in modern business. The second part describes the methodological steps of the research, from data collection to the application of topic modeling. The third part presents the research results, highlighting which aspects users are dissatisfied with when using the SalesForce mobile application. The conclusion summarizes the key findings of the research and provides recommendations for improving the SalesForce mobile application, as well as suggestions for future research in the field of user experience management.

User Experience Management

User experience management encompasses all the interactions of users with a company's products, services, and brands. This includes interactions with the user support team, as well. While user support and services represents the type of effort companies introduce in the crisis situations, in the sales process, during or after consumption of the product and service as a one-time action taken in response to a specific problem, user experience management encompasses every aspect of a user's interaction with the company, from the first contact to the departure (Fisher & Kordupleski, 2019).

User interactions with company, product, or a service may trigger different emotions and reactions. Some have positive responses, others may react negatively, depending on their predispositions (Oliver, 1997), which influence users to either continue loyalty to the company, switch products or services, or recommend their experience to others (Bravo et al., 2021). Berry et al. (2002) emphasize that if customers are to be satisfied, all the signals they get in the purchase process have to be carefully managed, whereas Gentile et al. (2007) supplement that user experience is a result of a sequence of interactions between the user and the product, company, or its parts, comprising rational, emotional, sensory, and physical responses to the service (Palmer, 2010).

Collection and analysis of user feedback should represent the foundation on which businesses decide on their user experience management strategy (Fisher & Kordupleski, 2019). User feedback analysis is crucial in defining the emotions, thoughts, and comments that lead users to make decisions on retention, switching to competitors, or recommending the product or service to others. Meyer and Schwager (2007) suggest user experience management approach based on monitoring past, present, and expected

trends. They identified three important behavioral patterns to which companies' attention should be paid: 1) past user behavior, 2) present user activities, and 3) user expectations of the future. For this purposes, data should be collected at every touch-point of interaction with the users, through surveys, interviews, focus groups, or online forums. Knowledge in all touch-points allows companies to assess user satisfaction and better understand its users' needs and desires, thus improve the overall user experience. Although assessment of user satisfaction is recognized as a crucial aspect of user experience (Chou & Chuang, 2018), many companies make mistake of designing user experience based on subjective perception rather than by incorporating user feedback into the products or services.

Traditionally, due to the limitation of time and technology, companies had to carry out either physical or online surveys using questionnaires to gain knowledge about user opinions, thoughts, emotions, attitudes, and feelings. Digital age and the rise of social media enabled users to share their experiences with products and services in real time. By sharing impressions through user-generated content on social media, i.e., photos and texts, future users' decisions are also affected and electronic word-of-mouth recommendation system among consumers is developed (Marić et al., 2022). Given this, the analysis of user opinion is recognized as increasingly important (Mirzaalian & Halpenny, 2019; Bu et al., 2021), while publicly available data, like online reviews, forum discussions, blogs, and posts from Facebook, Twitter, and other social networks, become important data sources of user opinions allowing companies to uncover nuances in user experience. Both large corporations and small-sized companies have recognized social media as a valuable resource for collecting and processing information about users, as well as placing marketing campaigns based on that information (Stefanović & Gardašević, 2024).

Topic Modeling in User Feedback Analysis

Topic modeling is a technique used for the identification of latent thematic structures, or "topics," within a set of textual data based on the present keywords. By grouping the keywords in topics, it indicates the most salient information conveyed within the text (Gluščević et al., 2024). Through topic modeling companies can discover sentiments and opinions shaping user behavior or experience, the interrelationships between topics, and monitoring of their evolution over time that points to potential trends. In this way, topic modeling identifies business areas that need improvements and provides insights for product development, marketing strategy, or user support (Gluščević et al., 2024). Bearing this in mind, topic modeling is an important technique for the analysis of user reviews. Instead going through every review manually, topic modeling will allow companies to automatically go through the reviews and categorize them according to the most prominent topics present in the documents. A method like this not only saves time and resources but helps businesses learn on a large scale, which otherwise might not have been possible with manual methods (Egger & Yu, 2022).

Recognizing new trends and recurring topics in user reviews contributes to understanding which product or service attributes contribute to positive and negative user perception. Such knowledge is helpful in decision-making processes, ranging from product development to improving user support and service. Additionally, the process

of monitoring and analysis of the sentiment of user reviews allows an organization to link the sentiment to a number of topics in order to identify exactly which aspects of the offer are valued positively or negatively by users. The results obtained can also be used to develop a priority list of areas for improvement or to highlight positive features in promotional campaigns (Papadia et al., 2023).

Research in topic modeling of user review collections has been steadily increasing over the last few years in many domains, such as health, education, social media, finance, with hospitality being particularly fertile. Among others authors, Park et al. (2018), Nguyen et al. (2023), Sutherland and Kiatkawsin (2020), Gregoriades et al. (2023), Taecharungroj (2023), and Zolfaghari & Choi (2023) used topic models as a core method to analyze the emotions and opinions of the user experiences in the tourism industry. To the best of our knowledge, topic modeling was not utilized as a tool for user experience evaluation of CRM mobile applications. Regardless of the domain of its application, topic modeling provides valuable insights that can help in the enhancement of user satisfaction and loyalty - the two most important aspects of business survival in the market.

Research Design and Methodology

The research methodology is focused on the analysis of user satisfaction with the SalesForce mobile application through a case study based on application of topic modeling over the collection of online reviews. Main objectives include assessing user perception of the SalesForce's quality, identifying shortcomings, and providing an insight into areas needing improvement. The reviews collected from Google Play Store will add value in terms of feedback that will enable the company to refine business strategies to accomplish user satisfaction. Methodologically, this involves:

- **Scraping reviews:** Data were scraped from the Google Play Store, including but not limited to review IDs, usernames, star ratings, and timestamps. A total of 9.308 reviews were collected.
- **Negative comments extraction**: Negative comments were identified and extracted from the collection using the Python library google-play-scraper, specifically focusing on online reviews with 1 and 2 star ratings. This case study is based solely on the analysis of this subset of data. After filtering, 2.501 reviews remained for analysis.
- **Data cleaning and preprocessing:** The reviews were prepared for analysis by changing text to lowercase, removing noise, such as punctuation and stopwords, and applying lemmatization for word reduction to root words.
- **Method selection:** *LDA* was deemed the most suitable method for uncovering hidden topics within the reviews, as it is the most widely used topic modeling technique for short-text analysis in academic research, particularly in the context of online reviews (Laureate et al., 2023). Laureate et al. (2023) demonstrated that 79.79% of studies focusing on short texts employ the LDA approach.
- **Selection of model with optimal number of topics:** Several experiments were carried out based on coherence measures for determining the optimal number of topics, such that the model captures relevant topics. The coherence

score was highest at 0.645 with 11 topics.

- **Results and discussion:** LDA modeling showed that compatibility, reliability, and notification overload were the main concerns of users in reviews.

These steps provided a structured approach to understanding user feedback and delivering actionable insights for improving SalesForce.

Research Results and Discussion

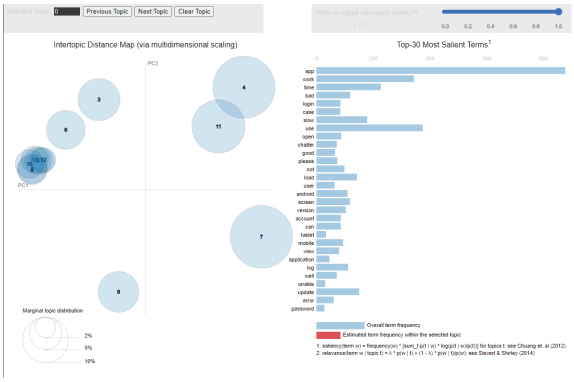
The discovered topics in negative reviews identify sources of user dissatisfaction with the SalesForce mobile application and potential sources of product improvement to enhance user satisfaction and experience. The analysis points to users often experiencing issues with the SalesForce's compatibility across different mobile devices, they find the SalesForce unreliable, loading time slow, consider the need for updates as frequent, and experience discomfort due to the high volume of notifications. Figure 1 illustrates resulting topics, their distribution, and dominant words within those topics. The following visualization has been created in Python using the pyLDAvis library.

Based on the keywords each resulting topic contains, the topics are interpreted as follows:

Topic 1: Issues in User Interaction and Functionality. This topic unveils issues that users have with basic functionalities, which most of the time are perceived as useless or redundant. Users have reported challenges in using such features.

Topic 2: Performance and Device Interactivity. This topic indicates that frustrations are caused by user incompatibility across all devices and responsiveness issues across device sizes such as desktop pc and mobile phones. The users also complain about issues with method of payment, logging out of the application, and poor user support.

Figure 1: *Visualization of topics in negative sentiment reviews using the pyLDAvis library*



Source: *Authors, 2024.*

Topic 3: Performance and Reliability Issues. Performance in this topic refers to data processing speed and data management. Several complaints have been made about frustrations due to system slowness and inability to maintain files easily, citing stability issues.

Topic 4: Issues about Functionality and Usability. The users' opinions are full of complaints about the page loading speed and too frequent application updates. Other issues include problems with production and compatibility on different devices, and navigation, uncaring and below expectations of users.

Topic 5: Performance of the notification system. It is the most frequent topic, 33.3% of the whole corpus. Users in these reviews often complain about not getting proper service, obtaining the required information, pointing to issues related to authentication and overall performance.

Topic 6: Frustrations with Interface and Dashboard. Users mention system ,problems, poor interface responsiveness when adding or loading user data, failure in proper information display on a dashboard. There are also complaints about the design and usability of the interface.

Topic 7: Quality of Service and Support. This topic speaks to dissatisfaction with service and support quality on the platform, including slow response time, inaccuracy in information, and improper functionality when offline.

Topic 8: Issues with Interface and Functionality. Concerns about reliability and performance continue, and problems keep recurring. People mention there is no interest in the SalesForce because of current interface and performance issues, which need attention.

Topic 9: Constant Instability and User Frustration. The topic includes frequent crashes, application freezes, and general complaints about user experience. Typical problems are errors that need reconfiguration very often, and users are forced to reinstall the application hoping to solve problems; thus, wasting time.

Topic 10: Installation and Compatibility Challenges. Users commonly complain about installation issues, especially with Android devices, and also report usability issues on older models. The issues of software updates also mount, and many have been driven to uninstall the Salesforce application. The installation process has often been cited as too complicated and in need of simplification, especially for Android users.

Topic 11: Authentication problems. This topic comprises issues of account access and problems during the login process, which eventually result in blank screens. Some users even reported receiving error messages and further inability to get past the login screen.

Application users also tend to express frustration and dissatisfaction in reviews using words with negative sentiment. Some of the critical keywords related to performance are *slow*, *crash*, *bug*, and *freeze*; keywords related to inability to run the application are *useless*, *unacceptable*, and *unusable*; and keywords related to degraded user experience are *error*, *crash*, and *constantly*. Expressions of dissatisfaction regarding

the user interface and user support are present as well. They are reflected by terms such as *poor*, *inconsistent*, and *support*.

Reviews reveal some dissatisfaction related to the authentication process and security features of the SalesForce. This is evidenced by the use of *password* words like *login*, *password*, and *security*. Users are upset because of SalesForce updates and installations; *update*, *install*, *version* are frequent terms in reviews. Such reviews hint strongly at performance and functionality issues, which are substantially factored into user experience and overall satisfaction. Negative feedback often reflects deep frustration that there is a disconnection between user expectation and the actual performance of the SalesForce, showcasing an area of needed improvement in design and functionality to enhance the user's experience.

Conclusion

Given the increasing importance of digital solution, understanding and working upon improvement of user experience is the key to any application's success, which includes mobile platforms like SalesForce. This study, based on the application of topic modeling techniques on a large dataset of user reviews, has revealed some major negative concerns related to the SalesForce mobile application. Issues pertain to compatibility problems, application unreliability, slow performance, and excessive notifications. These are very important concerns to address because they will further enhance the user experience and improve their loyalty. They represent a valuable feedback that SalesForce company can use to identify specific areas of improvement. It will enable them to satisfy user expectations more successfully, making the application much stronger and secure. The results of the case study point toward the importance of leveraging user feedback for driving product development. This way, it can help resolve current issues and predict or avoid any potential ones. SalesForce is able to consolidate a better position in the market and build a much better experience for its users in terms of continuing business and user retention.

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