



A study on Subtrack – A smart subscription tracker

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Abstract

SubTrack has been designed to allow users to manage all of their Digital Subscriptions in one place. With the constant addition of subscription services, users frequently lose track of renewal dates and/or how much they spend on subscriptions over time. To help with this, SubTrack allows users to add, edit and delete subscription information about the name of the service, the price of the service, how often the service is billed, and when the service is due to renew. It also has a centralized dashboard that shows all the users currently active subscriptions, overall expenses on those subscriptions monthly and annually. SubTrack also sends the user reminder notifications about renewing the subscription prior to the renewal date to help them avoid unexpected charges.

SubTrack has been developed using modern web software technologies such as; Node.js, Express.js, MongoDB, HTML, Tailwind CSS, and JavaScript. This ensures that SubTrack will provide secure authentication and fast performance for users. Ultimately, SubTrack was created to promote better financial management by helping users eliminate unnecessary subscription costs while providing users with an easy-to-use interface.

Keywords: Subscription management, renewal reminder, expense tracking, web application, financial awareness, dashboard analytics, node.js, mongoddb, user authentication, digital services.

Introduction

These days, it's common practice to utilize subscription-based services like Netflix, Spotify, Amazon Prime, and a multitude of online learning platforms throughout our lives. While these subscriptions are convenient and entertaining, they can become unmanageable very quickly if you have multiple subscriptions. Often, end-users forget their renewal dates; thus causing them to incur auto-charges they did not want. SubTrack provides a web-based subscription management system that helps prevent this from happening. The SubTrack application allows users to track all of their subscriptions easily due to its excellent interface design. The subscription management system is straightforward, easy to use, and is financially identified, thus appropriate for all age groups.

Literature Review

Subscription service usage has exploded since the growth of digital services, including streaming apps, cloud storage, fitness apps, and e-learning. Researchers and developers have studied what's happened to users' spending habits with all these subscription-based services being used together by many consumers. Many people use several subscription-based services regularly, but they may not keep track of when the service needs to be renewed or how much they spend each month. This generally results in consumers not realizing auto renewals and losing even more money due to all these different services they use.

Current financial management apps have features related to budgeting and expense tracking; however, the majority of these apps are highly complex and; thus, have advanced tools that most people will probably never need. Research has indicated that people are more likely to use a simple and

focused app that does one thing very well compared to using a complex and overloaded app.

There have been many ways to address the tracking of subscriptions with various online tools and applications; however, the majority of them either have no notification/path finding system, do not provide a clear summary of expenses, or the user must pay for a premium version of the application. Additionally, security and user authentication are two of the biggest concerns regarding web-based financial applications, and studies have shown that it is necessary to protect user data and/or have secure log-in methods.

This review makes clear that there is a necessity for a simple, safe and user-friendly service to track subscriptions. SubTrack was designed to fill these gaps by offering a single dashboard, notification for reminders, analytics of expenditures and secure access to users. The focus of the product is to ease the tracking of subscribers' spending patterns through helping users become more aware of their spending habits in the digital space.

Research Methodology

The research methodology is the systematic approach to gathering, analyzing, and interpreting data about a study. Research conducted for developing the Subscription Tracker included an analysis of user behavior, how subscribers utilize their subscriptions, the financial problems serially created by auto-renewals, and whether users require an easy-to-use subscription management system.

The goal of this research was to understand and utilize real-world user feedback in order to design a subscription tracking application that would allow users to efficiently manage their digital subscriptions.

Research Design

This study is based on the use of descriptive research. Descriptive research provides an understanding of the user characteristics, behavior, and issues experienced by users in managing numerous subscriptions. A descriptive study is used to examine the manner in which users manage subscription service products and what features they desire in a subscription tracking application.

Type of Research

Primary data was collected directly from users and then analyzed using quantitative methods to identify ongoing real-life challenges related to managing their subscriptions (e.g., OTT services, music platforms, learning platforms, cloud, etc.).

Data Collection Method

A structured closed-ended questionnaire was created within Google Forms and included several multiple-choice questions that measure:

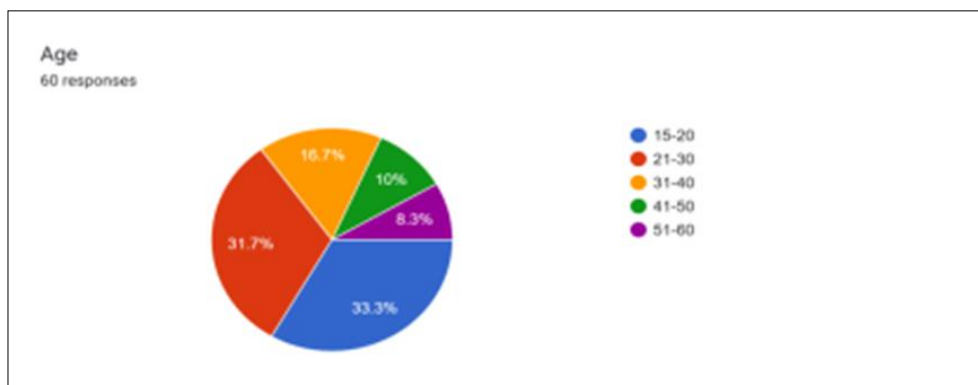
- The quantity of subscriptions currently being used by a user
- Any problems a user has experienced due to missing or forgetting renewals of their subscriptions
- The need for a reminder notifications
- Interest in a monthly summary of spending
- Difficulties with current financial applications
- Major categories of spending on subscriptions

Potential surveys were distributed on social media and various messaging applications to students, working professionals, and the general public. All potential respondents were asked to provide an accurate representation of their own experiences with subscription services.

Sample Size

The total sample size for this research is 60 respondents, with respondent ages ranging from 15 to 60. The majority of the sample consists of respondents between the ages of 15-30 representing a large user base of digital subscription services.

1. Age Group Analysis



Out of the 60 respondents:

- 15-20 Years Old 33.33% (20 Respondents)
- 21-30 Years of Age 31.67% (19 Respondents)
- 31-40 Years of Age 16.67% (10 Respondents)
- 41-50 Years of Age 8.33% (5 Respondents)
- 51-60 Years of Age 10% (6 Respondents)

Sufficient data was obtained from 60 completed surveys for an analysis of how-to-manage subscriptions as well as an identification of some of the general trends in subscription management.

Target Population

Populations which will be studied in the sample population are as follows:

- Students
- Working people
- Users of either music or video services on a streaming basis like Netflix and Spotify)
- Users that do online learning like Udemy or Coursera
- People that have just normal access/use a smart phone

Users in these categories use subscription based services daily or weekly and have issues keeping track of their payments i.e. due dates and when the subscription expires.

The collected survey or questionnaire results were analyzed using two methods - percentage analysis & distribution graphically in Google Forms. By examining each of the responses, we were able to track trends/patterns based on user preferences within the sample population. We then obtained an understanding of user needs as well as developed ideas for the features we want in the Subscription Tracker application based on those users needs.

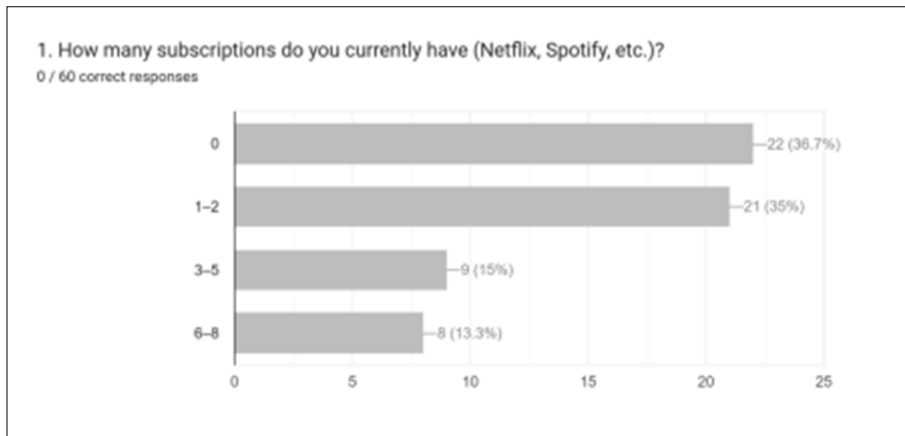
The research methodology provided us with evidence of what we believe to be the major obstacles to users using subscription based services as well as provided us with focus for how we can develop/substantially create/implement an easy, user-friendly/efficient subscription tracking system.

Results and analysis

A total of 60 responses were obtained via an online survey to determine user behaviors, usage patterns with subscriptions, and subscription management challenges. Data analysis utilized percentages and numeric analysis to provide useful insight.

Most respondents (approximately 65%) were between the ages of 15-30 years old, reflecting the demographics of those who use digital subscription services (e.g., OTT, music, and learning platforms). Consequently, younger users will benefit most from the proposed subscription tracker, since they are more likely to use multiple digital services regularly.

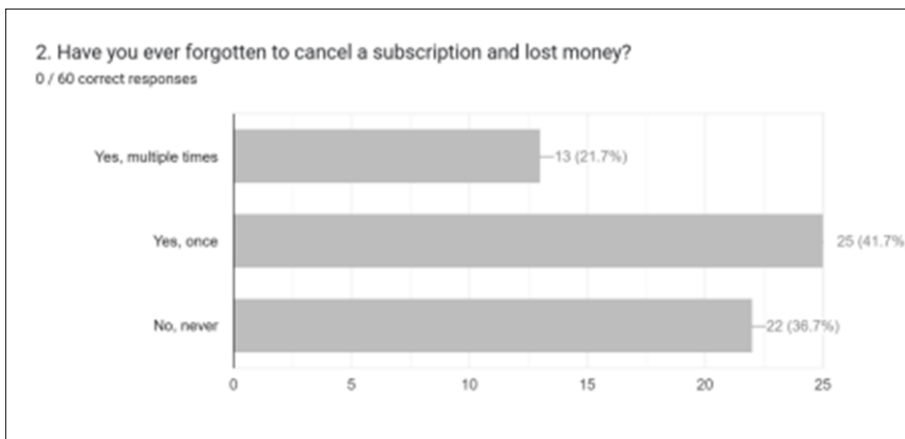
2. Number of Subscriptions Used



Of the users analyzed, 22/60 (36.7%) report no subscriptions, and 21/60 (35%) report 1–2; 9 respondents (15%) report 3–5; and 8 respondents (13.3%) report 6–8 subscriptions. As a result, it is clear that 35% have not fewer than 1–2 subscriptions. In contrast, only about 15%

of individuals who have more than three subscriptions will face difficulties managing those subscriptions. Consequently, the lack of proper tracking will lead to a greater need for a subscription management system.

3. Forgotten Subscription and Money Loss

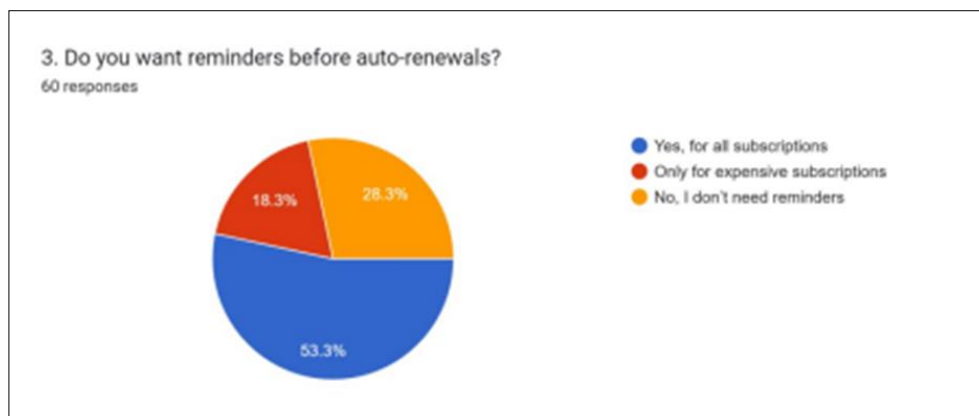


When respondents were asked if they had forgotten to cancel their subscriptions and lost money as a result, they answered as follows:

- Yes, one time only - 25 (41.7%)
- Yes, more than one time - 13 (21.7%)
- No, never - 22 (36.7%)

Thus, 41.7% of all respondents had lost money at least once because they forgot about their subscriptions being automatically renewed; this indicates that many subscriptions can result in loss of finances due to renewals without reminders. This data supports the need to implement tracking systems with reminder notifications for subscriptions.

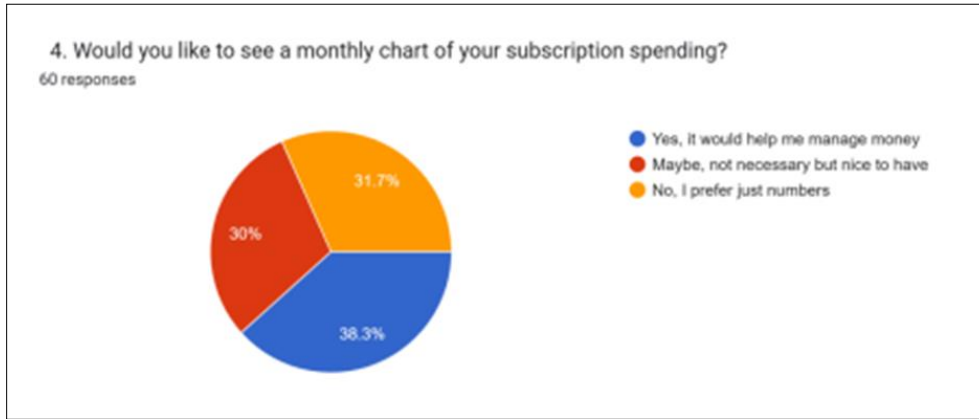
4. Need for Reminder Notifications



In terms of response to the reminder features of each subscription, 53.3% of respondents indicated that they would like to receive a notification prior to an auto-renewal in order to allow for subscription cancellation or continued

use, depending on the specific needs of the user. This statistic indicates that reminder notification alerts are considered to be a critical enhancement to a subscription tracking application.

5. Monthly Subscription Spending Chart

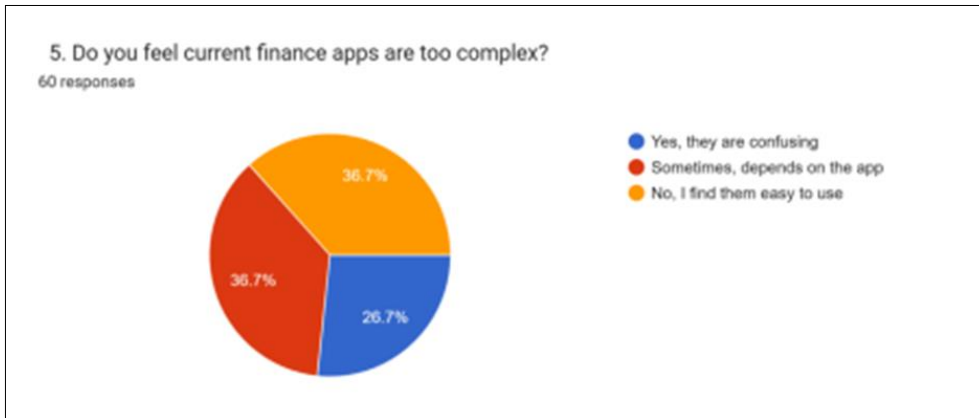


Responses for monthly spending chart:

- **Yes, it would help manage money:** 38.3% (23 respondents)
- **Maybe, nice to have:** 30% (18 respondents)
- **No, prefer numbers only:** 31.7% (19 respondents)

Approximately 38.3% of users believe that visual charts would help them track subscription expenses better. Graphical representation of spending improves awareness and helps users control unnecessary expenses.

6. Complexity of Current Finance Apps

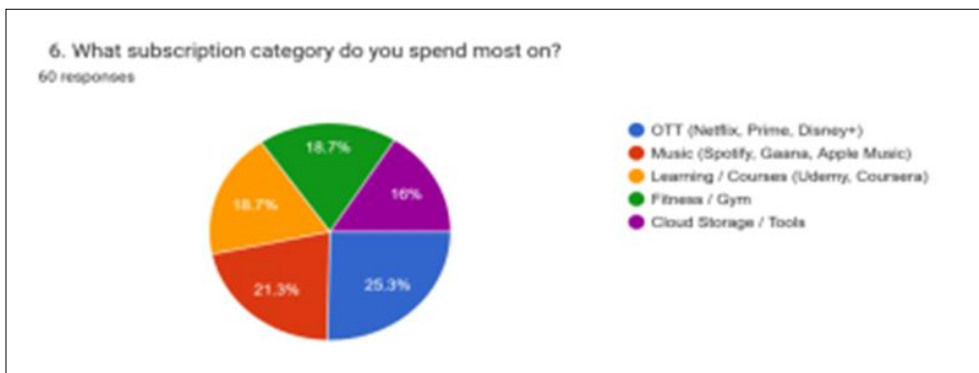


According to user feedback on the complexity of existing finance apps:

- They're Confusing = 26.7% (17 people)
- Sometimes Confusing = 36.7% (23 people)
- They're Not Confusing at All & Easy To Use = 36.6% (20 people)

About 28.7% of all responses indicated that current finance/budgeting apps are at least sometimes confusing, which suggests that there's a need for a simple and user-friendly subscription tracking app that doesn't require complicated financial management software.

7. Most Common Subscription Categories



Based on responses:

- **OTT platforms:** 25.3%
- **Music subscriptions:** 21.3%
- **Learning platforms:** 18.7%
- **Fitness/Gym:** 18.7%
- **Cloud storage/tools:** 16%

The results showed that 25.3% of consumers subscriptions are from OTTs, 21.3% are from music, 18.7% are from learning, 18.7% are from fitness, and 16% are from cloud/other tools. Netflix, Amazon Prime Video, and Disney+ are the top OTTs followed by Learning and Fitness Sundries.

Overall Interpretation

To summarize the results of this analysis:

- High number of people with more than one subscription (i.e., subscriptions across Netflix, Hulu, etc.).
- Over half of these people forget to renew their subscriptions and therefore waste money on those subscriptions.
- Most respondent users would like reminders when their subscriptions are due for renewal function.
- Most users prefer simplicity with their apps, especially finance apps.
- Visual spending charts are useful for tracking expenses.
- The OTT streaming subscriptions are most used by the respondents.

These findings lead us to conclude that developing an "effective" Subscription Tracker will be supported by providing users with notification reminders, spending infographic charting capabilities and easy subscription management tools.

Discussion

The purpose of this research is to investigate how users interact with subscription-based services and find a need for an app that tracks subscriptions. Based on survey responses from 60 respondents, research showed there are key findings regarding subscription use, people's financial losses from auto-renewals and how they manage multiple subscriptions.

The majority of respondents are in the age range of 15-30 years old. Therefore, young consumers are the biggest users of digital subscription services such as OTT, music streaming, and online learning platforms. Due to their typical use of multiple entertainment and education subscriptions, it becomes difficult to keep track of them without an app that can assist.

Therefore, an app that allows for the management/tracking of subscriptions would be a great advantage for this demographic.

According to the findings, many users have more than one active subscription in their accounts. Some users only have one or two active subscriptions; however, many respondents also indicated that they handle multiple active subscriptions. Additionally, manually managing several subscriptions can create confusion and missing renewal dates, which increases the need for a central location to manage all their subscriptions.

Another finding emphasized in the research is that many users have forgotten to cancel subscriptions and have incurred costs because of the automatic renewal feature on their account; over half of survey respondents reported

losing money at least once because they failed to cancel a subscription before the automatic renewal date. This clearly demonstrates that this is a common user issue and creates the necessity of creating helpful reminder notifications. The reminder functions provide users with advance notice of approaching payments to reduce the risk of financial losses. More than half of the survey participants expressed a clear preference for being reminded of upcoming subscription renewals prior to the renewal date. Many respondents would like to receive notifications for all subscriptions, whereas some want to receive notifications for only their higher priced subscriptions. The flexibility and customizability of the reminder functions will enhance user experience and overall awareness of their monetary transactions.

Most survey participants appeared to prefer having a visual representation of their spending habits through the use of monthly expense charts. The use of graphical or visual representations of expenditures will help the user identify and track his/her spending patterns and improve overall financial decision-making. Several participants preferred numerical representations of expenditures but using graphs to illustrate spending will aid in providing clearer pictures of financial situation and patterns and help improve the overall management of finances. Therefore, the addition of charts and reports to the subscription tracker will increase the overall usability and decision-making of the user.

A further point noted by the analysis is that most users feel that current finance/budgeting apps have too great of a level of difficulty in their usage and ultimately leads to a gap in the marketplace for an easily understood subscription management tool as opposed to a series of cumbersome finance tools. Users want a one-stop solution to only follow their subscriptions and set reminders for them to help manage their finances; this research strongly supports the development of an easy-to-use, lightweight subscription tracking app.

The survey results further illustrate how OTT subscription services comprise the most utilized subscription category for those surveyed, however, other categories such as music, learning platforms, fitness services, and cloud storage also remain highly utilized categories of subscriptions today. Thereby, this research further demonstrates how consumers utilize a wide array of various digital services, which indicates the importance of subscription tracking now more than ever before.

The research indicates that users have legitimate difficulties with subscription management and therefore require a straightforward electronic solution. The data suggest that there is a pressing demand for a subscription tracker app that reminds subscribers of their renewal dates, tracks their subscription expenses, and is user-friendly.

Conclusion

This research successfully analyzed user behavior and challenges with Digital Subscription Management. The findings show that many users have difficulty tracking multiple subscriptions and forgetting renewal dates resulting in financial loss. Many respondents requested reminder notifications as well as simple expense analysis features to manage their expenses effectively.

The study found that existing financial applications tend to be complex; therefore, there was a need for a user-friendly digital subscription management system that is simple to use. Users such as students and young professionals use

OTT, music, and learning platform subscriptions on a regular basis, so subscriptions are a high priority for these groups.

The research shows that the proposed development of a Subscription Tracker web application will assist users in efficiently keeping track of their subscriptions, providing reminders for renewal dates, and budgeting their expenses on a monthly basis. The data obtained from this research has provided a solid basis for creating an effective and functional design solution that needs are of real users.

Acknowledgement

I would like to give my heartfelt appreciation to my project advisor and faculty members for their continual support and assistance throughout this research project. Their advice and encouragement have led me to the successful completion of this research study. I would also like to thank each of the individuals who responded to the survey form for taking the time to return the survey and give me their honest answers. The information that was obtained from these surveys was imperative to developing valid data to be used in this study. And finally, I would like to thank my family and friends for their ongoing encouragement and support during the completion of this project.

References

1. Growth of Subscription-Based Services. Available at: ResearchGate
https://www.researchgate.net/publication/376355423_Growth_of_Subscription_Based_Services
2. Google Forms – Data Collection Tool used for survey and response analysis. 3. Various online articles and journals related to subscription management systems, digital payment trends, and web application development.