

A Review: Clevertap - Customer Engagement & User Retention Platform

Pranjal Choudhary¹, Dr. J. Bhuvana²

^{1,2}*School of Computer Science & IT, Jain University, Bangalore, Karnataka, India*

Abstract - Marketing technology (martech) is broadly described as software used by marketing teams to plan, implement, and evaluate marketing initiatives. With the rise of digital marketing, martech has emerged as a tool for managing and analysing large quantities of consumer data, enabling businesses to make data-driven choices and personalise their marketing efforts. Furthermore, martech aids in the automation of repetitive tasks, freeing up time for marketers to concentrate on high-level strategies and innovative tasks. Martech is a critical component for keeping ahead of the curve and generating success in today's competitive business climate. Here we're conducting a literature review on CleverTap, a mobile marketing automation tool that helps companies connect and retain consumers through personalized, targeted, and data-driven campaigns. Push alerts, in-app messaging, email marketing, and web push notifications are among the many features available on the platform, all of which can be customised based on user behaviour and tastes. The platform processes this data using sophisticated analytics and machine learning algorithms to produce insights into user behaviour, interests, and interaction. These insights can then be used to create personalised and pertinent ads that increase user engagement, income, and overall user experience. We would concentrate on CleverTap SDK integration across platforms, client retention techniques, and TesseractDB.

Key Words: martech, survey, SaaS, customer retention

1. INTRODUCTION

CleverTap is a customer interaction tool that assists companies in improving customer relationships through the delivery of personalised experiences across multiple platforms. It includes push alerts, in-app chat, email marketing, and user statistics. It offers SDKs for a variety of mobile systems, including Android, iOS, Unity, React Native, Flutter Xamarin, Cordova, and PhoneGap. By incorporating CleverTap's SDK into your mobile app, businesses can monitor user behavior, personalise and deliver tailored messages, and track the success of their marketing efforts.

It is a consumer interaction and retention tool that allows for the integration of app analytics and marketing. The platform assists clients in three methods to increase user engagement:

- Tracks user activities and analyses how people use the product.
- Users can be segmented based on their activities, and tailored campaigns can be sent to these groups.
- Examine each effort to determine its impact on user engagement and company metrics.

The capacity of CleverTap to manage big volumes of time-series data linked to customer behaviour within mobile apps is its main asset. The platform processes this data using sophisticated analytics and machine learning algorithms to produce insights into user behavior, interests, and interaction. These insights can then be used to create personalised and pertinent ads that increase user engagement, income, and overall user experience.

In addition to data management and analytics features, CleverTap offers a user-friendly interface that enables businesses to simply create and launch campaigns, watch their success, and iterate based on feedback and results. The platform also interacts with a wide range of third-party tools and services, including CRM systems, marketing automation tools, and analytics platforms, making it an adaptable and scalable choice for businesses of all kinds.

Overall, CleverTap is a strong and flexible tool that helps businesses optimise their mobile marketing efforts and engage and keep consumers through tailored and relevant campaigns. CleverTap is well-positioned in today's competitive digital environment to satisfy the evolving requirements of mobile marketers.

2. Literature Study

CleverTap is a mobile marketing automation tool that provides a variety of features to assist companies in creating personalised and relevant campaigns, increasing user engagement and retention, and driving revenue development. The CleverTap app is divided into five sections:

- CleverTap's dashboard allows you to segment users based on their activities and profile characteristics, conduct targeted ads to these groups, and analyse the success of each campaign.
- SDKs monitor user behaviour in mobile applications and webpages. CleverTap's SDKs also allow users to personalise applications by providing them access to user profile data.
- APIs deliver user information or incident data to CleverTap from any source. Our APIs also export CleverTap user data for research in BI tools and enhance client data in CRMs.
- Integrations with messaging systems like SendGrid and Twilio, attribution providers like Branch and Apps Flyer, and retargeting platforms like Facebook Audience Network.
- When qualifying occurrences occur, webhooks initiate processes in backend systems.

Some of the common features of CleverTap include:

1. **User segmentation:** CleverTap allows businesses to segment their users based on a wide range of criteria, including demographics, behavior, interests, and more. This enables businesses to create targeted and

personalized campaigns that are more likely to resonate with users.[2]

2. **Push notifications:** CleverTap's push notification feature enables businesses to send personalized and targeted messages to users, based on their behavior, preferences, and interests. This can help improve user engagement and retention, and drive revenue growth.[3]
3. **In-App messaging:** CleverTap's in-app messaging function enables companies to deliver personalised and targeted messages to users while they are interacting with the app. This can increase user engagement and retention while also driving income development.[4]
4. **Email marketing:** The email marketing function of CleverTap allows businesses to build and deliver personalised and targeted emails to users based on their behavior, preferences, and hobbies. This can increase user engagement and retention while also driving income development.[5]
5. **Web push notifications:** With CleverTap's web push notification function, companies can deliver personalised and tailored texts to website visitors. This can increase user engagement and retention while also driving income development.[6]
6. **Analytics and reporting:** CleverTap offers advanced analytics and reporting tools that allow companies to monitor user activity, evaluate marketing success, and gain insights into user engagement and retention.[7]

Several studies have investigated the impact of Clevertap on mobile app engagement and retention. For instance, a study by Google found that mobile apps that used Clevertap had a 20% higher retention rate compared to those that did not use the platform. Another study by Clevertap itself found that mobile apps that used its platform experienced a 200% increase in user retention and a 50% increase in app session length. Elaborating on some of the groundbreaking features that made CleverTap lead the MarTech domain:[16]

1. TesseractDB

TesseractDB is a time-series database that is open source and intended for rapid and scalable data storing and analysis. It is designed to handle large amounts of data in real time, making it ideal for use cases in the Internet of Things (IoT), financial services, and other sectors that require rapid data processing and analysis. TesseractDB is built to be extremely scalable, with tools like horizontal scaling, sharding, and automated data distribution across numerous servers to help. This enables it to process huge amounts of data while remaining fast. TesseractDB also allows SQL-based querying, allowing users to engage with their data using familiar tools and methods. TesseractDB is the only database designed specifically for interaction and retention. It's the basis for a significant competitive edge. CleverTap has integrated TesseractDB into their platform in order to improve their ability to manage huge amounts of time-series data. TesseractDB's columnar data store

design and high-performance query engine, according to CleverTap, make it a good match for their use case, which entails handling and analysing big quantities of consumer behavioural data in real-time.

CleverTap intends to provide its clients with a more scalable, performant, and adaptable data management option for their mobile marketing requirements by utilising TesseractDB.[8]

2. RenderMax

A notification that has been transmitted does not always imply that it has been produced. To optimise energy usage, some original equipment makers (OEMs) suppress or circumvent the Google (Firebase) push delivery service. This configuration means that your customers will receive fewer notifications and see reduced render rates. Your users may not see your notifications and thus lose critical conversation. To prevent this, you may need to augment your message with additional messaging methods such as Email or SMS, which will incur extra costs.

CleverTap RenderMax greatly increases mobile notification render rates by detecting the status of the device and adjusting notification rendering appropriately. You can now interact with people you couldn't before, increasing the ROI of your push campaigns.

RenderMax, for example, can guarantee that your push messages are delivered even if the device is in battery-saving mode on inactive devices.

We can use the ability of the following features with this feature: Notifications on Pull, OEM Partnerships, Push RenderMax SDK. [9]

3. Segmentation and Analytics

In CleverTap, a segment is a collection of users whose actions, actions not done, or user profile properties fit a series of predefined parameters. A group could be people who opened the app for the first time in the last 30 days, for example. Users who reside in New York, were acquired through a Facebook ad in April, transacted three or more times in May and June, and have not transacted in the last two weeks could be a more complicated segment. [10]

After you've found interest segments, you can save them and then target them with any form of messaging strategy. You can also trend segments over time to learn how a subgroup responds to marketing efforts. Any segment you make, including any of our analytics tools, can be used to filter the full CleverTap interface.

There are two kinds of behavioural parts in CleverTap:

- **Segments of Previous Behavior:** previous behaviour segments are groups of people based on their previous activities. Users can be grouped based on anything from a single activity to complicated combinations of actions, inactions, and individual properties.
- **Live User Segments:** Unlike past behaviour segments, which allow you to assess users based on past behavior, live user segments allow you to monitor

what is occurring in your app right now. When you specify a collection of behaviours of interest, CleverTap watches for them in your app and adds a user to a segment the instant their behaviour fits your action criteria.

4. Signed Call

Signed Call is an industry-first, in-app speech feature for trusted and contextual contact with your users that gives you a competitive edge by allowing you to reach out to your users using a unique, more engaging, and completely private in-the-moment channel. Some of the features of the above discussed are:

- Considered and in-the-moment: Interact within the programme without leaving it or swapping tabs.
- Allows for complete context: Track prior interactions and learn about individual requirements to provide a more personalised experience.
- Instills Trust: Because users never disclose their phone numbers and always know why you're calling them, privacy and security are built in.[11]

3. Product Analysis

Businesses can analyse several facets of their mobile app user base and their in-app behaviour with CleverTap, a thorough mobile marketing automation tool. Here are some instances of what CleverTap system analysis can cover: [12]

1. **User behaviour analysis:** CleverTap can assist organisations in understanding how users are interacting with their mobile app, including what actions they perform, which features they use most frequently, and where they spend the most time in the app.
2. **Funnel analysis:** Analysis of user behaviour within particular app flows, such as registration or purchase funnels, is provided in depth by CleverTap. This aids companies in locating bottlenecks and improving user experience to boost conversions.
3. **Engagement analysis:** CleverTap is able to gauge the success of different engagement channels, including push notifications, email, SMS, and in-app communications. By understanding the channels that work best for their audience, organisations can better target their campaigns.
4. **Retention analysis:** CleverTap can assist organisations in understanding how users are using their app over time and what factors influence user retention. The user experience can be enhanced and tailored retention efforts can be developed using this data
5. **Analysis of segmentation:** With the help of CleverTap, organisations may divide their user bases into distinct groups according to a variety of factors, including location, user behaviour, demographic information, and more. This enables companies to

design campaigns that are more individualised and targeted.

6. **Revenue analysis:** CleverTap can monitor in-app purchases and other revenue-related indicators, offering insights into revenue patterns and consumer behaviour that can help companies improve their monetization strategy.

4. System Design and Architecture

From a design and architectural standpoint Clevertap system had these components:

- **Data Collection:** CleverTap collects data from mobile apps using a mobile SDK, which is integrated into the app. The data collected includes user events, user attributes, and user behavior.
- **Data Processing:** The collected data is then processed and stored in a scalable and secure data store, such as a NoSQL database. This allows for fast and efficient data retrieval and analysis.
- **Data Analysis:** CleverTap provides a range of analytics tools and algorithms to analyze the collected data, including real-time reporting, user behavior tracking, and campaign performance reporting.
- **Personalization:** CleverTap uses the analyzed data to personalize marketing efforts, such as push notifications, in-app messages, and email campaigns.

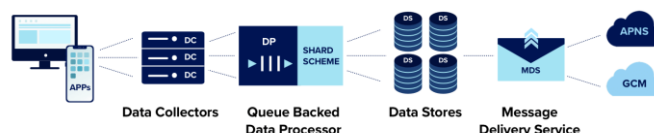


Fig -2: System Design and Architecture

- Automation features include event-triggered campaigns, user registration processes, and push message campaigns, among others. These features aid in streamlining marketing procedures and increasing productivity.
- CleverTap works with a variety of marketing and analytics tools, including marketing automation platforms, analytics tools, and mobile app creation platforms.[13]

4. Methodology

CleverTap offers SDKs (Software Development Kits) for the Android, iOS, and online platforms, allowing them to be readily integrated into mobile and online apps. There are several stages involved in integrating CleverTap into your application:

1. **Register for CleverTap:** The first stage is to establish an account with CleverTap. You must provide basic information about your company and select a payment plan that meets your requirements.
2. **Make an app:** Following registration, you must build an app in the CleverTap dashboard for each network

you wish to connect. If you want to incorporate CleverTap into both your Android and iOS apps, for example, you must build distinct apps for each device.

3. Select a connection method: CleverTap offers a variety of integration options, including SDK integration, server-to-server integration, and REST API integration. Choose the technique that best meets your requirements and follow the CleverTap steps to integrate your app. [15]
4. Set up event monitoring: Once your app has been linked with CleverTap, you can begin recording user events like app installs, payments, and clicks. Set up event monitoring in your code by calling the proper CleverTap functions.
5. Set up user tracking: CleverTap also lets you monitor user characteristics like demographics, preferences, and behaviour statistics. Set up user monitoring in your code by calling the proper CleverTap functions.
6. Set up campaigns: After you've configured event and user tracking, you can use the CleverTap dashboard to create and launch campaigns. CleverTap offers a variety of campaign kinds, such as push alerts, in-app messages, and email campaigns.
7. Put the application to the test: After you've configured event and user tracking and made campaigns, you can launch your app to ensure that events and user characteristics are monitored properly and campaigns are distributed as anticipated. [14]

10. Larson, M. (2017, June 20). CleverTap Segmentation: How to Create User Groups for Engagement. CleverTap. <https://clevertap.com/blog/user-segmentation/>
11. "Signed call - An overview" <https://d35fo82fjcw0y8.cloudfront.net/2022/11/15052939/Signed-Call-overview-pdf-1.pdf>
12. CleverTap. "What is CleverTap?" <https://clevertap.com/what-is-clevertap/>
13. Goyal, A., & Jain, A. (2016). CleverTap: An intelligent mobile marketing solution. In 2016 IEEE First International Conference on Mobile Services (MS) (pp. 276-281). IEEE.
14. Smith, J. (2022). Clevertap SDK Integration Guide: How to Add Clevertap to Your Mobile App. Retrieved from <https://clevertap.com/docs/sdk-integration/>
15. Valdellon, L., 2020. What is an SDK? Everything You Need to Know.
16. Google (2016). CleverTap Boosts Mobile App Engagement and Retention. <https://www.thinkwithgoogle.com/marketing-resources/experience-design/mobile-app-engagement-retention-clevertap/>

5. CONCLUSIONS

Finally, CleverTap is a strong customer interaction and retention tool that assists businesses in analysing customer behaviour and preferences, creating targeted campaigns, and delivering personalised experiences across multiple platforms. Its features include statistics, categorization, automation, and messaging, all of which are aimed at assisting companies in developing long-term connections with their consumers. CleverTap's integration features, which include SDK and REST API integration, make it simple for companies to incorporate the platform into their current infrastructure. Overall, CleverTap is a fantastic option for companies seeking to improve their client involvement and retention efforts.

REFERENCES

1. "CleverTap - Overview". CleverTap, <https://clevertap.com/>
2. "CleverTap | Product Overview" <https://clevertap.com/product-overview/>
3. "CleverTap | Push Notifications" <https://clevertap.com/push-notifications/>
4. "CleverTap | In-App Messaging" <https://clevertap.com/in-app-messaging/>
5. "CleverTap | Email Marketing" <https://clevertap.com/email-marketing/>
6. "CleverTap | Web Push Notifications" <https://clevertap.com/web-push-notifications/>
7. "CleverTap | Analytics & Reporting" <https://clevertap.com/analytics-reporting/>
8. "CleverTap Introduces TesseractDB for Handling Time-Series Data." PR Newswire, 14 Jan. 2021, <https://www.prnewswire.com/news-releases/clevertap-introduces-tesseractdb-for-handling-time-series-data-301207864.html>.
9. "RenderMax" <https://clevertap.com/product/rendermax/>