

Smart Story Archive for WhatsApp Status: A Design Thinking-Based Model for Private Status Retrieval

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Abstract—WhatsApp Status supports quick sharing of daily moments, yet its 24-hour visibility creates a gap between temporary public sharing and private long-term retrieval. Existing story features mainly emphasize posting and viewing, while private retrieval by date, person, location, keyword, media type, favorite mark, and download access remains limited in WhatsApp Status. This study proposes Smart Story Archive as a user-centered design concept for private Status retrieval. The method used Design Thinking with survey-based needs analysis involving 100 experienced WhatsApp users, selected because they actively used WhatsApp Status and could evaluate archive-related pain points. This study contributes a theoretical and empirical framework for ephemeral data retrieval in private messaging environments by introducing a conceptual model that reconciles user desires for both ephemerality and long-term memory accessibility. The data were analyzed using descriptive statistics and translated into feature requirements and a high-fidelity prototype in Google Stitch. The key findings show three dominant needs: users want to recover meaningful Status memories, retrieve content through incomplete memory cues, and maintain privacy control over archived metadata. The proposed design addresses these needs through multi-cue search, optional private archiving, metadata control, and deletion access. This study contributes a WhatsApp-specific archive model that balances memory retrieval, privacy, and interface simplicity for future usability testing.

Keywords: WhatsApp Status; Smart Story Archive; Design Thinking; UI/UX; Information Retrieval; Mobile Application Design

1. INTRODUCTION

Story-based features have become a standard interaction pattern in modern social media applications, allowing users to share short-lived content in a simple and engaging format. Among these platforms, WhatsApp Status is widely used for sharing daily moments through photos, videos, text, and music. In WhatsApp, the feature is known as Status and is commonly used to share photos, videos, short texts, music, and daily moments. Unlike public social platforms, WhatsApp Status appears inside a private messaging environment where content circulates among selected contacts. This context makes the archive problem different. Users do not only need a place to store old Status content; they also need control over who can access it, how metadata is processed, and whether temporary content remains private. Previous user experience studies emphasize that interaction design should help users complete personal goals with minimum effort, clear feedback, and meaningful control [2], [3]. Therefore, the problem addressed in this research is the limited ability of users to manage, search, and reuse their own Status history without weakening the temporary public nature of Status.

The main design tension in this study is the paradox between ephemerality and retrieval. Ephemeral Status supports privacy expectations because content disappears from public view after a short period. However, the same design also removes meaningful content that users may later need for memory keeping, documentation, or personal reference. Stories on social media are often used for self-expression, entertainment, social sharing, memory keeping, and relationship building. Personal information management and directed search studies show that users often retrieve digital content through incomplete cues, such as time, person, place, or topic, rather than through one exact file name. These findings justify an archive model that supports incomplete memory cues without turning private Status content into permanent public content.

Design Thinking is relevant because the problem is not only technical storage. It requires understanding how WhatsApp users balance speed, privacy, habit, and retrieval effort. The framework supports a human-centered process through empathizing with users, defining problems, generating ideas, developing prototypes, and testing or validating solutions. Persona development and prototyping help researchers communicate user needs, reduce ambiguity, and evaluate early acceptance before implementation [11], [12]. For WhatsApp, the method helps limit feature creep because each proposed function must respond to a specific user pain point rather than adding menus for novelty. Mobile interface principles also support keeping the archive close to users' existing mental models [17], [18].

Although numerous UI/UX studies have applied Design Thinking in administrative, educational, e-commerce, and service applications [9], [10], limited research has investigated the redesign of ephemeral story features in private messaging platforms such as WhatsApp. The gap is not merely the absence of an archive button. The unresolved issue is how a private messaging app can provide memory retrieval while preventing cognitive overload, metadata exposure, and unwanted permanence. Existing story features generally focus on publication and viewing, while archive, search, and personal memory retrieval are often treated as secondary functions. This study contributes by formulating Smart Story Archive as a WhatsApp-specific feature concept that combines date-

based grouping, person-based grouping, location-based grouping, keyword search, photo/video filtering, favorite status, download access, and user control.

Several studies have explored the user experience and implementation of story-based features and archive management in social applications. First, Menon [5], [6] investigated the uses and gratifications of photo-sharing on Instagram, focusing primarily on visual self-presentation and entertainment rather than retrieval dynamics. Second, Bayer et al. [4] analyzed the psychological aspects of ephemeral sharing on Snapchat, concluding that temporary content reduces social anxiety, yet their study did not address the subsequent user need to retrieve expired content for personal reference. Third, studies on Personal Information Management (PIM) by Bergman et al. [7] emphasized that users generally prefer hierarchical or subjective folder structures to retrieve files, but this mechanism is highly inefficient for mobile, gesture-driven multimedia content like short stories. Fourth, Teevan et al. [8] conceptualized orienteering behavior in directed search, showing that digital content retrieval relies heavily on contextual and incomplete cues, yet this concept has not been contextualized within private messaging systems that operate under strict end-to-end encryption frameworks.

The fundamental research gap lies in the failure of existing platforms and frameworks to bridge ephemeral public expression with structured, private multi-cue retrieval within a secure messaging ecosystem. While social media archives (e.g., Instagram or Facebook Stories) rely heavily on rigid chronological timelines, they overlook the psychological reality that mobile users recall temporary moments through fragmented semantic associations, such as a specific person, a precise location, or a contextual keyword. This study directly addresses this empirical and design gap by proposing a context-aware, privacy-preserving multi-cue archive model tailored for WhatsApp Status.

Thus, this research aims to design and evaluate an initial Smart Story Archive prototype for WhatsApp Status using Design Thinking and survey-based user needs analysis. The expected outcome is not a deployed application, but a validated design direction that connects user pain points, feature scope, and future usability evaluation. Survey data from Google Forms identified user needs, while Google Stitch was used to visualize the proposed interaction flow. This research makes three significant contributions. Conceptually, it extends the Ephemeral Social Interaction framework by explaining how temporary data can be transformed into a private personal archive layer without compromising users' expectations regarding public privacy. Methodologically, the study demonstrates the application of a low-overhead, survey-driven Design Thinking approach to identify precise memory-recall cues among active mobile users. Practically, it produces a verified, high-fidelity UI/UX screen-flow model developed in Google Stitch that balances flexible information retrieval with strict privacy and transparent metadata controls for mobile application developers.

2. RESEARCH METHODOLOGY

2.1 Research Stages

This research applies Design Thinking because the proposed feature is intended to solve a user experience problem in a private messaging context, not merely to add technical storage. As shown in Figure 1, the process consists of five stages: empathize, define, ideate, prototype, and test. In the empathize stage, data were collected using a Google Forms questionnaire distributed to WhatsApp users who had experience using Status. The questionnaire covered respondent profiles, usage duration, Status posting frequency, pain points in finding old Status content, perceived usefulness of archive features, and intention to use Smart Story Archive. The instrument used a five-point Likert scale for agreement and adoption likelihood, with 1 representing the lowest response and 5 representing the highest response.

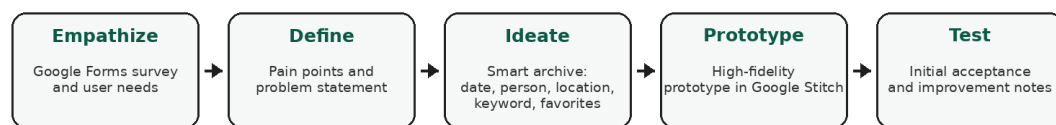
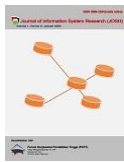


Figure 1. Research stages using the Design Thinking process

In the define stage, the collected answers were summarized to identify the main problem statement. The survey contained 100 valid responses. The data analysis used descriptive statistics, including frequency, percentage, mean score, and agreement percentage. Because the study was positioned as early design validation, descriptive analysis was used to identify dominant needs and design priorities rather than to claim global representativeness. Agreement percentage was calculated by combining responses with values 4 and 5, while neutral responses were represented by value 3. For multiple-response questions, each selected answer was counted as one occurrence and converted into a percentage of total respondents. The calculation is presented in Equation (1).

In the ideate stage, feature requirements were generated from the dominant pain points and preferred functions. The solution concept is Smart Story Archive, a private archive layer inside WhatsApp Status. The



proposed feature includes automatic grouping by upload date, person appearing in the Status, and location, plus keyword search, media filter, favorite status, and download access. These functions were chosen because they respond directly to user complaints about status disappearance, difficulty finding old content, and lack of an organized archive.

In the prototype stage, the proposed flow was translated into a high-fidelity prototype using Google Stitch. Google Stitch was used only as a visual prototyping tool, not as evidence that the system is technically feasible or usable in production. The prototype focuses on the main interaction paths: opening Status archive, searching old Status, filtering by date, filtering by person, filtering by location, opening a Status detail, marking as favorite, and downloading old content. Its functional limitations are clear: it does not process real WhatsApp data, does not connect to WhatsApp encryption or storage infrastructure, and does not measure task completion or error rate. Therefore, the prototype serves as an early visual validation artifact for future usability testing.

In the test stage, survey results were interpreted as initial acceptance evidence. The study did not yet conduct task-based usability testing with completion time or System Usability Scale score, which remains a limitation. To reduce interpretation bias, the analysis separated respondent profile, pain-point items, feature preference, and adoption intention before translating them into requirements. The questionnaire also used closed-ended Likert items and multiple-response questions so that dominant needs could be compared across the same response scale. Nevertheless, adoption intention and willingness questions should be read as early indicators, not as proof of real-world adoption.

The questionnaire was structured into three groups. The first group collected respondent identity and usage profile, such as gender, age, occupation, WhatsApp usage duration, daily usage intensity, and Status creation frequency. The second group measured problems related to old Status retrieval, including difficulty finding previous photos or videos, forgetting upload time, and difficulty searching by date, person, or location. The third group measured the need for Smart Story Archive, including archive usefulness, grouping preference, search usefulness, intention to use, and willingness to adopt the feature. This structure made it possible to connect user profile, pain points, feature preference, and adoption intention.

The interpretation of mean score used a descriptive approach. Mean scores closer to 5 indicate stronger agreement or higher likelihood, while mean scores around 3 indicate neutral perception. This study did not use correlation or significance testing because the objective was to build an initial design direction from user needs, not to test causal relationships. The results were translated into feature requirements and prototype screens. For example, high scores on date-based difficulty were translated into a calendar and timeline feature, while high interest in keyword search was translated into a search bar on the archive home screen.

$$\text{Percentage (\%)} = \left(\frac{\text{Number of responses}}{\text{Total respondents}} \right) \times 100\% \quad (1)$$

2.2 Data Source and Prototype

Survey data were collected through a Google Forms questionnaire with 100 valid responses. Respondents were eligible when they had used WhatsApp and had familiarity with WhatsApp Status, because the study required users who could evaluate archive-related problems. The sample was not intended to represent the entire global WhatsApp population; it was used to capture early needs from active mobile users. To reduce response bias, the questionnaire separated demographic questions from feature-evaluation items, used neutral wording, and analyzed agreement percentages together with mean scores. The resulting dataset was exported in spreadsheet format for descriptive statistical analysis. Based on these findings, a high-fidelity prototype was developed using Google Stitch as the primary prototyping tool. The prototype visualizes the proposed Smart Story Archive concept and serves as a design artifact for communicating interaction flows and supporting future usability evaluation [19]. The prototype was documented as a screen-flow visualization so that each proposed function could be traced back to a user problem and a design requirement.

3. RESULT AND DISCUSSION

3.1 Respondent Profile and WhatsApp Status Usage

The survey involved 100 respondents. Table 1 summarizes the dominant respondent profile and WhatsApp usage pattern, while Figure 2 visualizes the main respondent characteristics. The respondent profile shows that 72% were female and 28% were male. Based on age, the largest group was 23-27 years old with 41%, followed by 18-22 years old with 28%, 28-32 years old with 24%, below 18 years old with 4%, and above 32 years old with 3%. Based on occupation, 45% were employees, 28% were students, 23% were entrepreneurs, and 4% were school students. These data indicate that the respondents represent active mobile users who are familiar with WhatsApp as part of daily communication. The profile is important because a Status archive feature is more relevant for users who repeatedly share daily activities and have long-term WhatsApp experience.

WhatsApp usage duration also indicates strong familiarity with the application. A total of 44% respondents have used WhatsApp for 4-6 years, 43% for more than 6 years, 11% for 1-3 years, and only 2% for

less than 1 year. This means that 87% of respondents have used WhatsApp for more than four years. Daily usage is also high, because 50% use WhatsApp very frequently, 47% use it frequently, and only 3% use it occasionally. For Status creation, 38% post every day, 35% post 2-5 times per week, 10% post several times per month, 6% post once per week, and 11% rarely post. Together, Table 1 and Figure 2 show that the proposed feature targets experienced and active WhatsApp users rather than casual users only. Figure 2 reinforces the interpretation of Table 1 by showing that the largest respondent groups are active adults and daily WhatsApp users. This respondent profile is relevant because repeated use increases the chance of experiencing archive and retrieval problems.

Table 1. Respondent profile and WhatsApp usage summary

Variable	Dominant Category	Frequency	Percentage
Gender	Female	72	72%
Age	23-27 years old	41	41%
Occupation	Employee	45	45%
WhatsApp usage duration	4-6 years	44	44%
Daily WhatsApp usage	Very frequent	50	50%
Status creation frequency	Every day	38	38%

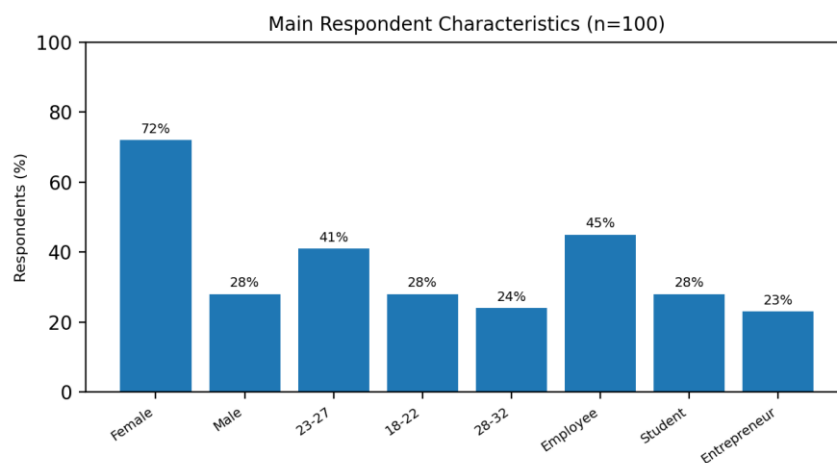


Figure 2. Main respondent characteristics based on survey data

Figure 2 reinforces the interpretation of Table 1 by showing that the largest respondent groups are active adults and daily WhatsApp users. This respondent profile is relevant because repeated use increases the chance of experiencing archive and retrieval problems.

3.2 User Problems in Current WhatsApp Status

The first Likert item shows that respondents often share important moments through WhatsApp Status, with a mean score of 4.31 and 90% agreement. This result confirms that Status is not only used for casual posting, but also as a channel for meaningful moments. This behavior aligns with the information-sharing dynamics observed by Lee and Ma [22], who argued that user experience and prior gratification heavily influence an individual's propensity to share content within social application structures. Therefore, the proposed redesign should not replace the temporary public nature of Status, but should add a private retrieval layer controlled by the user. The pattern summarized in Figure 3 indicates that the problem is mainly retrieval-related, not merely dissatisfaction with the 24-hour Status duration.

The archive pain-point construct obtained a mean score of 4.36 with 91% agreement. The highest individual pain-point item was the desire to see Status again after it disappeared, with a mean of 4.47 and 91% agreement. Respondents also reported difficulty finding photos or videos previously uploaded to Status, with a mean of 4.39 and 96% agreement. The item stating that current WhatsApp Status does not support good archive management obtained a mean of 4.32 and 95% agreement. These results show that the problem is consistent across several aspects: memory, retrieval, organization, and search.

Multiple-response answers strengthen the Likert results. The three largest obstacles were difficulty finding old Status content (45%), Status disappearing after 24 hours (39%), and the absence of a Status archive feature (37%). Other obstacles included difficulty finding Status based on person appearing in the Status (17%), difficulty managing old Status (16%), difficulty finding Status by date (15%), and difficulty finding Status by location (10%). Only 8% stated that they did not experience obstacles. Figure 3 visualizes these obstacles and shows that the dominant user problem is the absence of a structured way to retrieve old content through different memory cues. Figure 3 supports the design focus on retrieval. The feature concept should therefore prioritize searchability and organization rather than only extending the life span of Status content.

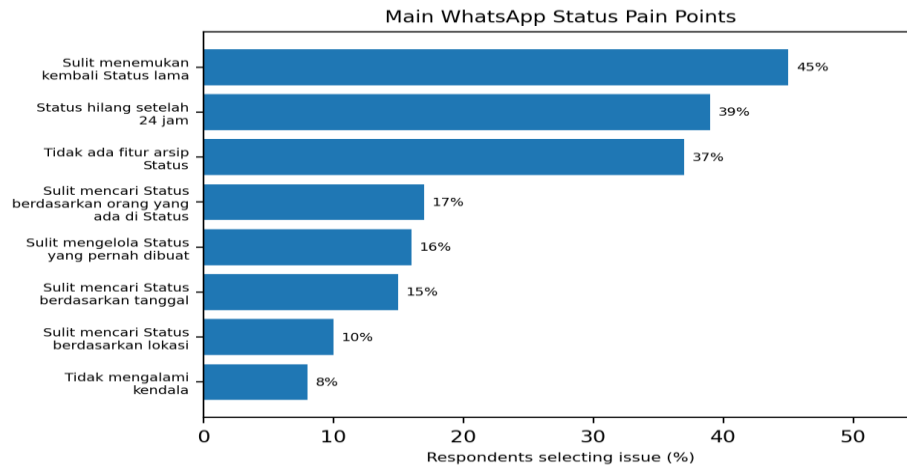


Figure 3. Main pain points experienced by respondents

Figure 3 supports the design focus on retrieval. The feature concept should therefore prioritize searchability and organization rather than only extending the life span of Status content.

3.3 Feature Needs and Adoption Intention

The perceived usefulness construct obtained a mean of 4.39 with 94% agreement. Respondents agreed that an archive feature would help them find old Status content, with a mean score of 4.35 and 96% agreement. The need for Smart Story Archive also received a strong score, with a mean of 4.41 and 94% agreement. Table 2 summarizes the main survey constructs, while Figure 4 shows the mean score pattern across constructs. These results indicate that respondents did not only express curiosity about the feature, but also perceived it as useful for solving a concrete retrieval problem. The preferred feature question shows that keyword search was selected by 32% of respondents, person-based archive by 31%, location-based archive by 29%, date-based archive by 28%, photo/video filter by 27%, favorites by 21%, and download by 20%. Figure 5 presents the priority order of these requested functions. The close distribution among keyword, person, location, and date retrieval shows that the archive should not rely on one search path only. Adoption intention was high. A total of 51% respondents stated that they were very likely to use Smart Story Archive and 44% stated that they were likely to use it, meaning 95% expressed positive intention. Only 5% were neutral and no respondent selected unlikely or very unlikely in the survey scale. Willingness to use also supports this result: 72% answered yes, 26% answered maybe, 1% answered no, and 1% answered not sure. The adoption construct obtained a mean of 4.48 and 96% agreement. These findings indicate that Smart Story Archive is perceived as a useful enhancement to WhatsApp Status [23]-[25]. The situations in which respondents wanted to see old Status also explain why the feature is needed. The most common situation was remembering trips or vacations (46%), followed by looking for certain photos or videos (42%), seeing activities on a certain date (37%), remembering family moments (32%), seeing moments with certain friends (28%), and work or organizational needs (11%). Only 3% stated that they rarely or never wanted to see old Status. These answers show that archive access is connected to personal memory, social relationship, and practical documentation. Thus, a good design should respect privacy while making personal retrieval easier.

Table 2. Summary of survey constructs

Construct	Mean Score	Agreement
Status sharing behavior	4.31	90%
Archive pain points	4.36	91%
Perceived usefulness of archive features	4.39	94%
Adoption intention and experience improvement	4.48	96%

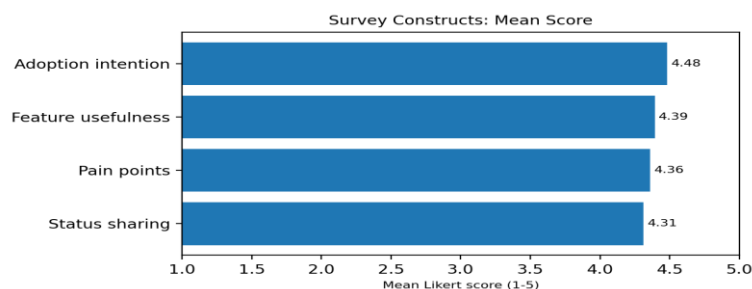


Figure 4. Mean scores of survey constructs

Figure 4 indicates that perceived usefulness, archive need, and adoption intention are consistently high. This pattern supports the decision to continue from needs analysis to prototype evaluation.

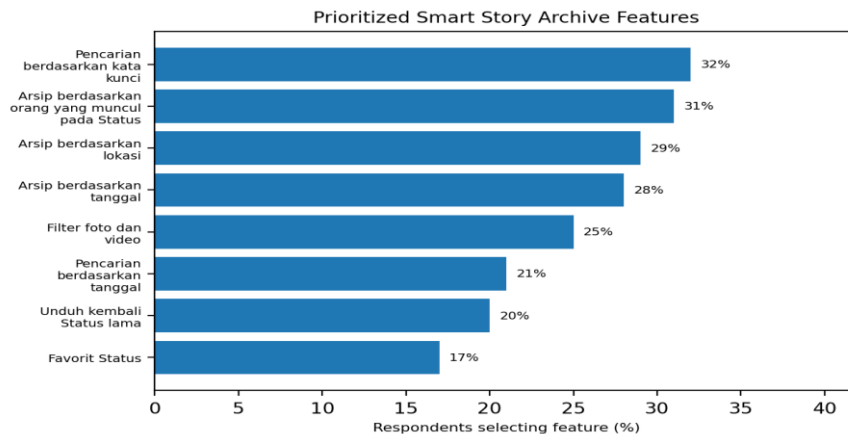


Figure 5. Prioritized Smart Story Archive feature needs

Figure 5 confirms that the proposed archive should support several retrieval paths. Keyword search has the highest priority, but person, location, and date retrieval also receive strong support, which justifies the multi-cue structure of Smart Story Archive.

3.4 User Persona and Empathy Map from the Empathize Stage

After the survey results were interpreted in the empathize stage, a user persona was developed to summarize the dominant respondent profile, main pain points, goals, and feature expectations. The persona was used as a synthesis tool, not as independent evidence. It connects survey patterns with interface requirements so that the prototype remains grounded in actual user problems rather than cosmetic Design Thinking artifacts. In this study, the persona represents an active WhatsApp Status user who frequently shares daily moments and needs a faster way to find old Status content. The comprehensive breakdown of the user characteristics, core goals, and specific frustrations identified during the empathize stage is detailed in Table 3.

Table 3. User persona derived from the Empathize survey

Element	Description
Persona name	Nadia, an active WhatsApp Status user
Profile	23-27 years old, employee, uses WhatsApp very frequently, and often posts Status for daily moments, trips, social activities, and personal documentation.
Main goal	To find old Status photos, videos, or text quickly without scrolling through the phone gallery or guessing the upload date.
Pain points	Old Status disappears after 24 hours; previous content is hard to find; users forget the date; and current Status does not provide structured archive access.
Motivation	Wants to keep important moments privately, repost useful content, remember memories with friends or family, and retrieve documentation when needed.
Needed feature	Private archive, search bar, date grouping, person grouping, location grouping, media filter, favorites, and download access.

The developed persona demonstrates that users require more than a simple storage mechanism. Instead, they expect an intelligent archive that supports multiple retrieval strategies based on how people actually remember content. The persona also shows that the archive must remain optional and private, because users who value Status as temporary content may reject a feature that feels too permanent or intrusive. To further synthesize the cognitive and emotional states of the target group, a structured empathy map is formulated and presented in Table 4.

Table 4. Empathy map of active WhatsApp Status users

Think	Feel	Say	Do
"I uploaded that photo before, but I do not remember when."	Annoyed when meaningful Status disappears.	"It would be helpful if WhatsApp had an archive."	Posts Status regularly. Looks through gallery or chats to find old media.
"I need a faster way to find old moments."	Worried that old content may be hard to control.	"I want to search by date, person, or place."	Uses search terms, date memory, people, or places as recall cues.
"I want archive access, but it should stay private."	Relieved if the archive is private and easy to search.	"I only want myself to see the archive."	

The empathy map strengthens the design direction by showing that users need both control and retrieval efficiency. The Think and Feel components emphasize uncertainty and concern about privacy, while the See and Do components show daily reliance on WhatsApp Status. The Pain component explains the difficulty of finding old content, and the Gain component clarifies the expected value of fast search and private access. The empathy map also warns that too many archive menus could increase cognitive load; therefore, the prototype prioritizes a limited set of high-value retrieval paths

3.5 Smart Story Archive Prototype

Based on the Design Thinking process, the problem statement can be formulated as follows: active WhatsApp users need a private and organized way to find old Status content because important photos or videos disappear from public Status after 24 hours and are difficult to retrieve later. From this statement, the ideation stage produced Smart Story Archive as a redesign concept. The feature should appear inside the Status area without disturbing the existing flow. It should offer an archive home page, search bar, date grouping, person grouping, location grouping, media filter, favorites, and download option. The feature requirement matrix was created by mapping survey findings into design decisions. The problem of disappearing Status content was mapped to a private archive. The difficulty of searching by time was mapped to date grouping and date search. The difficulty of searching based on people was mapped to person grouping. The difficulty of searching by location was mapped to location grouping. The need to find specific content quickly was mapped to keyword search and media filtering. The need to save meaningful content was mapped to favorite marking and download access. This mapping helps ensure that every proposed feature is supported by user data rather than added only because it seems technologically attractive. Table 5 outlines the direct correlation between these user findings and design components.

From a user interface design perspective, the archive home screen prioritizes retrieval efficiency by placing the search bar at the top of the interface. This decision was derived directly from survey findings indicating that keyword search was the most preferred retrieval method among respondents. The most important element is a search bar because keyword search was the most selected feature. Below the search bar, the interface can show quick filters such as Date, People, Location, Photo/Video, Favorites, and Downloads. Recent archive collections can be shown as visual cards to preserve the familiar story-like experience. This layout allows users to start from a general search or directly choose a category, depending on how they remember the old Status. From an interaction perspective, the design should minimize the number of taps required to find a Status. A user who remembers the date should be able to open the calendar filter and select a month or date. A user who remembers a person should be able to open a person list and view related Status items. A user who remembers a location should be able to open a location list or map-based grouping. A user who remembers only a word should be able to type a keyword. This flexible path supports different user memories and improves the chance of finding the desired content.

Table 5. Mapping of survey findings into prototype requirements

Survey Finding	Design Requirement	Prototype Direction
Status disappears after 24 hours	Private archive storage	Smart Archive entry inside Status
Difficulty finding by time	Date grouping and date search	Calendar and timeline view
Difficulty finding by person	Person-based grouping	People archive screen
Difficulty finding by location	Location-based grouping	Location archive screen
Need fast retrieval	Keyword search and media filter	Search bar and photo/video filter
Need to keep important content	Favorite and download access	Favorite button and download action

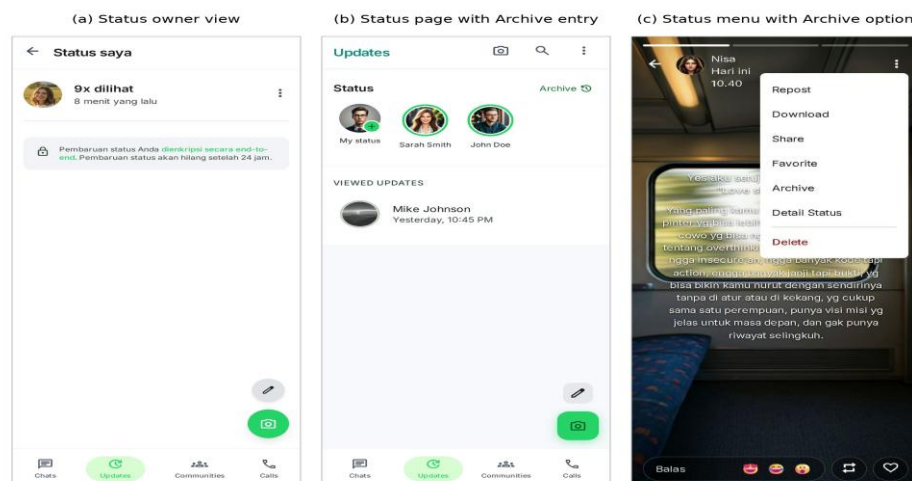


Figure 6. Prototype screenshots of Status page and Smart Archive access

The prototype design decisions were derived from survey priorities, memory-retrieval behavior, and mobile interaction principles. The layout intentionally keeps the archive close to the Status area, because users already associate Status with short-lived content. However, the archive is presented as a private and optional layer so that the temporary public nature of Status is not changed. Table 6 clarifies the technical design decisions and their underlying psychological rationale. This rationale explains why the prototype does not use a single chronological archive only. A chronological list is useful when users remember a date, but the survey shows that users also need keyword search, person-based grouping, and location-based grouping. The card and grid structure therefore supports both recognition-based browsing and search-based retrieval.

Table 6. Prototype design rationale

Prototype element	Design decision	Rationale
Archive button inside Status	Placed near the Status area and owner/menu access.	This position keeps the feature discoverable for Status users without making archived content look public or intrusive.
Search bar at the top	Displayed on the archive home screen before categories.	Keyword search was the most selected preferred feature; top placement supports fast retrieval when users remember only a word or topic.
Archive grid	Recent archived media are shown in a visual grid grouped by month or category.	A grid allows quick visual scanning of photos/videos and matches users' habit of recognizing memories from thumbnails.
Category cards	Date, person, location, notes, favorites, and downloads are represented as cards or quick filters.	Cards reduce menu complexity, separate retrieval paths clearly, and make the archive easier to browse on a small mobile screen.
Person and location grouping	Dedicated screens group archived Status by detected person or location label.	These filters support partial memory cues when users remember who appeared in the Status or where the moment happened, but not the exact date.
Detail action menu	Download, repost, favorite, archive, detail, and delete actions are placed in the Status detail/menu area.	Keeping actions in the detail menu preserves the familiar WhatsApp interaction pattern while giving users control over old content.

The visual execution of the proposed layout begins with the primary user entry points shown in Figure 6. The foundational navigation experience, including the main archive grid and specific filters for people and timelines, is illustrated in Figure 7. Furthermore, the specialized storage layout for managing short notes, location-tagged media, and plain text uploads is depicted in Figure 8. When a user selects a specific item, the interactive overlay options, download pathways, and administrative configurations are displayed in Figure 9. Finally, the dynamic variations of the active status viewer and its alternate viewing states are demonstrated in Figure 10.

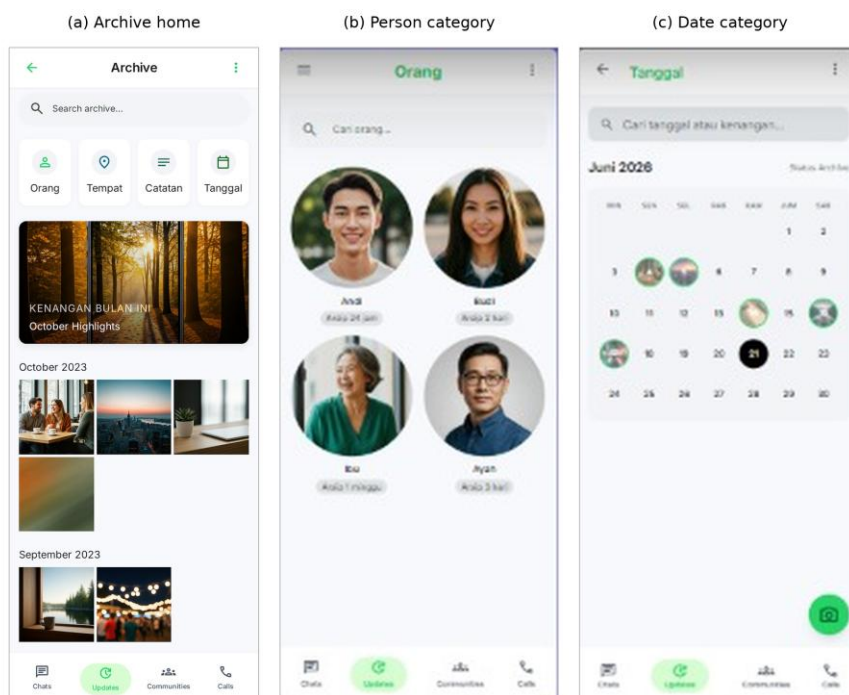


Figure 7. Prototype screenshots of archive home and category-based retrieval

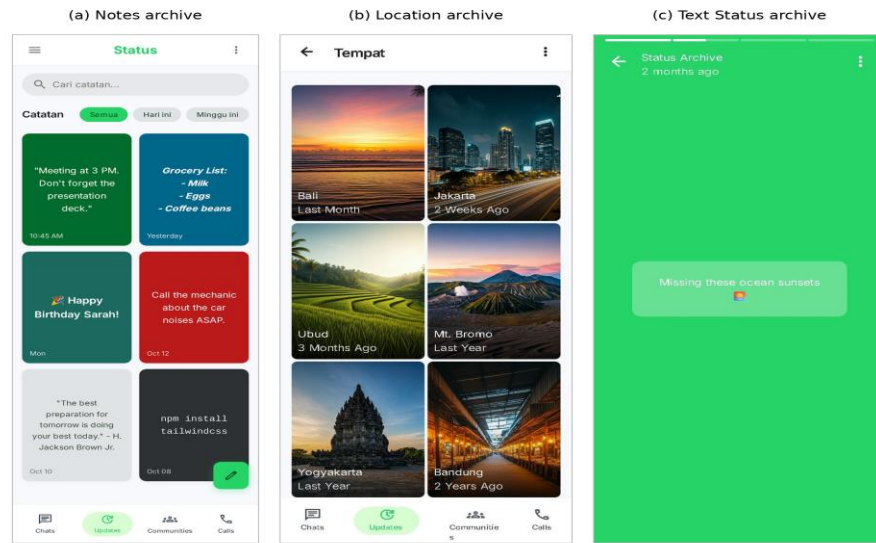


Figure 8. Prototype screenshots of note, location, and text archive screens

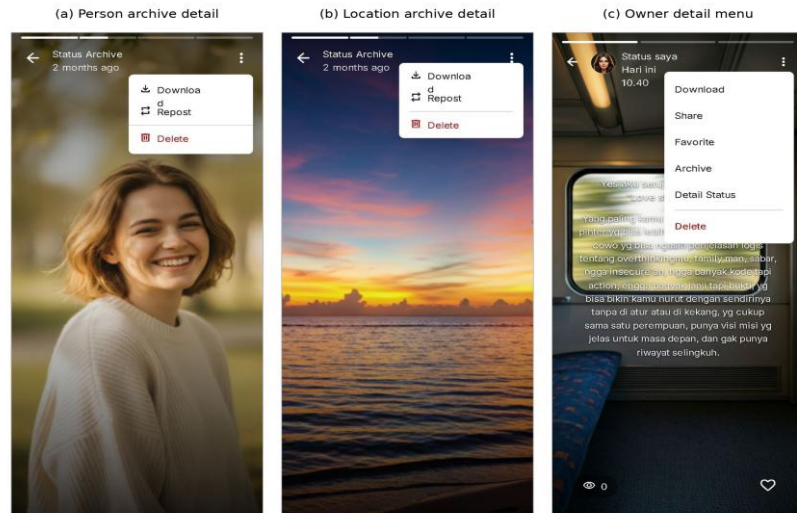


Figure 9. Prototype screenshots of archived Status detail and action menu

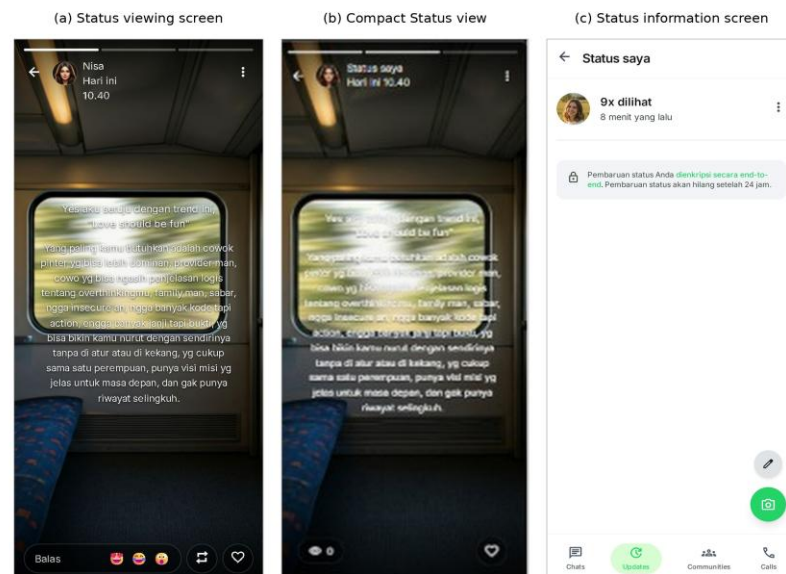


Figure 10. Prototype screenshots of Status viewing and interaction variations

Figures 6-10 present the original prototype screenshots exported from the Smart Story Archive flow. The screens show how users access the archive from the Status area, browse archived content through date, person, note, and location categories, and open archived Status details with actions such as download, repost, favorite, and delete. The prototype concept shown in Figures 6-10 uses a simple mobile flow. Users open the Status page and choose Smart Archive. The archive home page displays recent saved Status collections and a search field. If users remember the time, they can open a date calendar or timeline. If users remember a person, they can open person-based grouping. If users remember a location, they can open location-based grouping. If users remember a topic, they can use keyword search. When a result is selected, the detail page shows the old photo or video, upload date, detected metadata, favorite button, and download action. This structure attempts to reduce search effort by matching different memory cues.

The proposed redesign also has privacy considerations. Since WhatsApp is closely associated with private communication, archive visibility should be limited to the account owner by default. The feature should not automatically expose old Status to other contacts. Person and location grouping should be opt-in, processed as private metadata, and presented with clear permission settings. Users should be able to disable metadata grouping, delete archive items permanently, and understand whether metadata is stored locally, synchronized, or backed up. This design decision follows the principle that a memory feature must provide control, transparency, and deletion ability, especially in social applications where personal data can be sensitive [1], [20], [21].

The positive adoption result also indicates that Smart Story Archive may increase perceived value of WhatsApp Status. When users know that important moments can be privately retrieved later, they may feel more confident sharing Status for personal documentation. However, convenience must not be allowed to weaken trust. The feature should include clear control settings for archive saving, person grouping, location grouping, permanent deletion, and download access. These controls are important because archive convenience should not reduce user autonomy or privacy expectations. Overall, the survey results and prototype concept show a coherent relationship between problem, solution, and user acceptance. The respondents' long experience with WhatsApp supports the relevance of their complaints. The high agreement on pain points confirms that the problem is not isolated. The high usefulness scores support the proposed archive features. The high adoption intention suggests that the prototype is worth continuing to task-based usability testing. This interpretation remains descriptive, but it provides a clear design rationale: Smart Story Archive should prioritize multi-cue retrieval, optional activation, privacy control, and minimal disruption to the existing Status flow.

3.6 Discussion

A comparison was added to clarify the difference between the proposed feature and existing story or memory features in popular social media applications. The comparison focuses on four functions that are central to this study: archive availability, keyword search, person-based retrieval, and location-based retrieval. The purpose of this table is not to claim technical superiority over existing platforms, but to show the research gap addressed by the proposed Smart Story Archive.

Table 7. Comparison of existing story archive features and proposed Smart Story Archive

Platform / Feature	Archive	Search	Person-based retrieval	Location-based retrieval
Instagram Story	Available	Not emphasized	Not emphasized	Not emphasized
Facebook Story	Available	Not emphasized	Not emphasized	Not emphasized
Snapchat Memories	Available	Available	Not emphasized	Not emphasized
Proposed Smart Story Archive	Available	Available	Available	Available

The comparison demonstrates that the proposed Smart Story Archive extends existing story archive concepts by integrating multiple retrieval mechanisms within a single interface. Rather than relying solely on chronological storage, the proposed design supports multi-cue retrieval through keywords, people, and location, providing a more flexible approach to personal memory management. Instagram Story and Facebook Story already provide archive support, but the archive experience is generally centered on chronological storage rather than multi-cue retrieval. Snapchat Memories provides stronger search support, but it is not designed specifically for WhatsApp Status and does not directly answer the respondent need to retrieve Status by people or locations within a private messaging context. Therefore, the proposed Smart Story Archive differs from previous features because it is designed as a private WhatsApp Status retrieval layer based on survey findings, user persona, empathy map, and prototype-driven Design Thinking.

Compared with previous UI/UX studies, this research has a more specific focus on ephemeral content retrieval in a private messaging application. Studies on prototype-based UI design emphasize that a prototype helps users understand a proposed interaction before implementation [13], [14]. Studies on social media stories highlight that users post stories for social sharing, entertainment, self-presentation, and personal expression [4]-[6]. This research connects both perspectives by showing that WhatsApp Status users also need a retrieval mechanism after content expires. Therefore, the novelty of this study is the integration of Design Thinking, survey-based needs



analysis, persona and empathy mapping, comparative feature analysis, and a smart archive prototype for WhatsApp Status.

3.7 Research Limitations

Although the results are positive, this study has several limitations that should be considered before the proposed Smart Story Archive is implemented in a real application. First, the survey involved 100 respondents and was dominated by active mobile users, so the findings cannot represent all WhatsApp users across different ages, regions, occupations, and digital literacy levels. Second, the survey used self-reported perceptions and adoption intention, which may differ from actual behavior when users interact with a working feature. Third, the prototype was evaluated as an early design artifact and has not yet been tested using task completion, error rate, completion time, or System Usability Scale scoring [15], [16]. Therefore, the results should be understood as early design evidence rather than conclusive usability proof. Fourth, the person-based and location-based grouping features are still conceptual. A real implementation would require deeper evaluation of face recognition, metadata extraction, storage policy, permission control, and deletion mechanisms. Fifth, this research does not examine the technical feasibility of integrating Smart Story Archive into WhatsApp infrastructure, including end-to-end encryption, local storage, cloud backup, synchronization across devices, and application performance. Sixth, the comparison with Instagram Story, Facebook Story, and Snapchat Memories is limited to visible feature availability and does not analyze each platform's internal architecture, algorithm, or privacy policy in detail. Future research should therefore conduct usability testing with real tasks, compare alternative layouts, test privacy acceptance, and evaluate long-term use after participants interact with the prototype for several days or weeks. As organized for final design consideration, Table 8 summarizes these experimental limitations and proposes targeted future steps.

Table 8. Summary of limitations and future work

Limitation	Impact on this study	Future work
Respondent scope	The 100 survey responses provide early insight but cannot represent all WhatsApp users.	Use larger and more diverse samples across age groups, occupations, and regions.
Self-reported data	Intention to use may be higher than real behavior in actual use.	Conduct task-based usability testing and longitudinal evaluation.
Prototype maturity	The prototype is high-fidelity but not a fully functioning system.	Develop an interactive prototype with measurable tasks, errors, completion time, and SUS score.
Privacy and metadata	Person and location grouping may raise privacy and data-control concerns.	Evaluate consent, storage, deletion, and metadata processing mechanisms.
Technical feasibility	The study does not test integration with WhatsApp infrastructure or encrypted backups.	Assess local/cloud storage, synchronization, encryption, and performance requirements.
Comparison scope	The comparison is based on visible user-facing features, not internal platform design.	Use formal benchmarking and expert review of alternative archive designs.

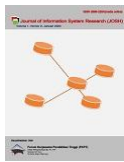
4. CONCLUSION

This study successfully applied the Design Thinking framework to address the UX limitations of WhatsApp Status by conceptualizing and validating the Smart Story Archive feature. The initial empathize phase revealed a consistent user pain point, where 96% of active mobile respondents reported explicit difficulty in retrieving disappeared stories using existing non-structured methods. By translating these specific needs into interface priorities during the ideate and prototype phases, this research produced a context-aware multi-cue retrieval model that organizes historical statuses by date, person, and location metadata alongside keyword search and filters. Early adoption validation demonstrated strong user acceptance, with 95% of respondents expressing a clear intention to use the proposed feature. The design maintains a private, optional storage layer that preserves user autonomy without altering the fundamental ephemerality of the public WhatsApp Status system. Although restricted by self-reported survey limitations and early-stage descriptive analysis, the proposed redrafted framework provides mobile UI/UX designers with a transparent blueprint for incorporating smart personal archives into privacy-centric messaging environments. In summary, the findings provide a structured path for mobile interface development by delivering three core advancements: a conceptual framework for transitioning temporary content into private assets, a survey-driven method for extracting specific memory-recall cues, and a high-fidelity visual layout that integrates flexible multi-cue search controls within strict privacy rules.

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