MEMORANDUM

Date: Updated — 2022 Revision
To: [Name]
From: [Name]
Team: Philip Jean-Pierre — Social Security Administration (SSA)
Subject: UXG Mobile Research Study — Design and Development (2024 Updated)

Executive Summary

The purpose of this memorandum is to inform you of the User Experience Group's plan to conduct research to help identify when native mobile applications are best suited to solve customer needs and improve the overall user experience of SSA's customers. The goals of this research are: (1) to address SSA's need to establish a mobile presence and to expand services to the American people by modernizing delivery to include mobile technologies; and (2) to establish best practices and processes for conducting user research pertaining to the product design and development lifecycle, specific to native mobile applications.

The impact of achieving the first goal — expanding SSA's services to include native mobile apps — will narrow the digital divide among historically underserved populations, specifically those who rely solely on smartphones due to economic constraints and those who prefer smartphones as a lifestyle choice. As a result, expansion to native mobile technologies may increase equity and inclusion among the American people.

The impact of achieving the second goal — establishing best practices and processes for native mobile app research — will enable product teams to consider the gains and trade-offs of design and development for mobile technologies. These considerations will build awareness of the benefits of early and continuous research within the product design lifecycle at SSA, including increased confidence in product direction and cost savings for the agency.

This research will engage external participants from various populations as primary users, and internal employees who engage with the public as secondary users. The goal of working with both user segments is to better understand pain points, opportunities, and needs regarding native mobile technologies. This data will then be synthesized and used by new projects when making decisions on whether native mobile applications are the right solution.

In addition, this research will produce artifacts to assist in the decision-making process for new products and the technology platforms leveraged by the project. These deliverables align with SSA Vision 2025 goals of being customer-centric, data-driven, and continuously improving through the agile process. This memorandum also covers best practices for incorporating User Experience Research Methods into each stage of the design lifecycle for new mobile technologies.

Our intent is to continue expanding this research to provide direct lines of feedback and a mechanism for engaging the American people in the design and improvement of Federal Government programs, processes, and services — in alignment with the Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government (EO 14058). Doing so will assist SSA in staying current with both design trends and the evolving needs of SSA customers.

Background

Almost three quarters (72.6 percent) of internet users will access the web solely via their smartphones by 2025, equivalent to nearly 3.7 billion people. Just over 1.3 billion are forecast to access the internet via both smartphone and PC by 2025, according to a report published by the World Advertising Research Center (WARC), using data from mobile trade body GSMA. Sixty-nine million will access the internet via PC only. WARC estimates that around 2 billion people currently access the internet via only their smartphone, which equates to 51 percent of the global base of 3.9 billion mobile users.

Consumers behave differently on mobile devices than when browsing the internet using a laptop or desktop. In 2019, 81% of Americans owned a smartphone, compared to only 74% of Americans who owned a desktop or laptop. Usage patterns for electronic devices are changing rapidly. Mobile traffic represents approximately 50% of all internet traffic in the U.S. In 2019, the average U.S. adult spent about 3 hours and 43 minutes on mobile devices, up from three hours and thirty-five minutes the previous year.

While having a mobile-responsive website backed by a platform with major resources allocated to cross-device reach is important, there were more than 218 billion app downloads in 2020 (TechCrunch, 2021) — a 6.86% increase from the prior year. Experts predict a 25% increase in global mobile app downloads between 2018 and 2022, with forecasts estimating 258 billion app downloads globally. In today's competitive environment, not having a mobile app has severe implications for service delivery.

Mobile app development carries unique challenges: developers must support as wide a range of mobile clients as possible, each with its own idiosyncrasies. When choosing to develop a mobile web, native, or hybrid app, supporting multiple mobile browsers and more exotic devices — and navigating various platforms — can be a complex experience. Native apps are installed directly onto the device and are developed specifically for a particular mobile operating system. These apps are available on app stores such as the Apple App Store and Google Play Store.

SSA's focus is on the customer's experience over their lifetime. Beneficiaries, as defined by SSA, are all individuals receiving any type of Social Security benefit(s) under current law. SSA's customers span a wide range demographically. Broadly, those demographic groups include:

- American Indians and Alaska Natives (AIAN) aged 62 or older
- Social Security beneficiaries aged 60 or older who have at least 30 years of work with earnings at or above four times the amount needed for one Social Security quarterly credit and less than half of the national average wage index
- Beneficiaries aged 85 or older in a given year
- Social Security beneficiaries aged 60 or older who are fully insured by age 61, have at least 30 years of non-covered earnings or 30 years of covered earnings at less than half the average wage, have more than 5 years with zero earnings, and were never disabled
- Social Security taxpayers who are workers aged 31 and older

The following covers the over 69.1 million taxpayers and retired workers who, after a lifetime of work and contribution, rely on Social Security benefits for a portion of their income. For one out of five beneficiaries aged 65 and older, Social Security benefits are their sole source of income, and for two out of three, Social Security represents half or more of their total income. SSA's benefits help individuals and families make ends meet and provide them with independence in their elder years.

Today, 15% of American adults (approximately 49.4 million) are "smartphone-only" internet users — meaning they own a smartphone but do not have traditional home broadband service. This alternative access to information and services must be accounted for in remote,

underserved, and areas with less developed infrastructure. Mobile apps make the delivery of services efficient, accessible, and convenient.

Project Objectives

Objective 1: Identify What Apps and Functionality Are Needed for Users

According to the Presidential Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government (EO 14058), government must be held accountable for designing and delivering services equitably and effectively, with a focus on the actual experience and abilities of the people it serves. By demonstrating that its processes are effective and efficient — in addition to being fair — the Federal Government can build public trust. To this end, the Federal Government must use technology to modernize government and implement services that are simple to use, accessible, equitable, protective, transparent, and responsive for all people of the United States.

To address this mandate, SSA's Vision 2025 focuses on modernizing the digital footprint by grounding services that are customer-centric and delivering products that encompass: (1) customer choice, (2) personalized services, (3) customer-centric technology, (4) accurate information, and (5) secure systems. Aligning with these five pillars, SSA can ensure a superior customer-centric experience for all its customers at critical stages throughout their lifespan, thereby establishing a foundation of trust between customers and the agency — which will strengthen public trust in the overall Federal Government through effective, efficient, and inclusive services.

The delivery of thoughtful products and services that meet customers' expectations requires an understanding of their collective challenges as well as their individual struggles within the context of their lives. By applying the behavioral science and practice of Human-Centered Design (HCD) methodology, we can deliver optimal user experiences by ensuring that products and services are designed with and for the customers throughout the product and service design lifecycle.

The HCD methodology applies continuous research in response to the changing social, economic, and digital landscape to improve understanding of our customers — a requirement for designing optimal products and services. This includes gathering feedback from customers, establishing service standards, measuring performance against those standards, and benchmarking customer service performance against best-in-class experiences in the private sector. Furthermore, the use of qualitative and quantitative research drives better outcomes for the people we serve.

Objective 2: Identify Best Design Processes and Practices for Building Intuitive Applications for All Primary and Secondary Customers (External and Internal)

Mobile App UX Strategy

Part of the goal of developing native apps within SSA will be developing a strong strategy and converting that strategy into something tangible — one that has been tested and validated with customers using research (both quantitative and qualitative). That information can then be forwarded to a UX designer, who will synthesize it into a visual representation that may include wireframing, customer maps, customer journeys, and personas, as well as meaningful and intuitive information architecture.

While there are many approaches to UX Strategy, the primary goal is the formulation of a plan utilizing organizational goals alongside the beneficial goals of the SSA customer. This process will also focus on building a proper product ecosystem — a refined understanding of the app and organizational goals, confirming that we are targeting the right SSA customers within the ecosystem to solve for unique business goals.

Additionally, once we solve for the 'who' in the process (the SSA customer), we follow up with the 'why' of the project — understanding the context and ensuring that, through continued partnership with executives and stakeholders, organizational goals are being met. This includes delivering value to the customer and understanding the limitations and outcomes necessary to make informed design and development decisions.

1. Understand the Business Strategy — Understanding the overall business direction and goals of the app should form the basis of the mobile app design. In its simplest form, a successful mobile strategy aligns organizational goals, mobile opportunities, and current and future customer needs. This begins by asking questions such as: Is an app needed for the product? (Answered via Research) What problem is the app solving? (Answered via Research)
2. Business Mobile App Strategy — For a strong strategy, the major factors to consider are business goals, competitive analysis, and internal analysis (including ground-team institutional knowledge). The strategy must be specific, measurable, achievable, relevant, and timely.
3. Defining App Strategy — Through research, implementation, and understanding of use cases, journeys, and personas, as well as an understanding of key performance indicators (KPIs).
4. Product Management Strategy — Once the mobile app strategy is defined and documented, the process moves to implementation. Implementation begins with defining the minimum viable product (MVP), which is defined as the product with the minimum features required for validating and learning. At this phase, the team defines the MVP, prioritizes and sorts features based on priorities, and backlogs other features for future development.

Research Approach

Our research effort will focus on knowing why things happen, understanding the context users find themselves in, and observing how they perform tasks — including triggers and motivations. Our research goal is to develop an effective approach to understanding the SSA customer. These methods will ensure that our area of inquiry — specifically how an app will impact or influence the daily lifestyle or workflow of customers — is thoroughly addressed. The approach we have chosen aligns with the standards of User-Centered Design (UCD), utilizing both quantitative and qualitative research.

Quantitative Research

- This approach captures data that is observed and measured. For apps, this will include bounce rates, number of downloads, and demographic data. This research informs our team about where, how, and in some cases who is accessing our information and what devices are being used. Types of research used to explore and understand our customers on an observable and measurable scale include: Analytics, Surveys, Tree Testing (a usability technique for evaluating the findability of topics in an app), Eye-

Tracking (allowing researchers to study the movements of a customer's eyes during a range of activities), A/B Testing, and Card Sorting.

Qualitative Research

- Where quantitative research focuses on data that is observed or measured, qualitative research asks what drives you. It is the study of any subjective data, notably stories, task duration, motivations, triggers, and more. This process helps us understand those motivations, focusing our study on understanding usage and how it affects usability. Through further testing, we can also learn about customers' pleasures or challenges while performing tasks, their preferences, content comprehension, comfort with the app, and whether any workarounds or hacks were needed during use. Methods used in this process include competitive analysis, heuristic reviews of past versions or past projects, contextual inquiry, card sorting, diary studies, and stakeholder reviews.

UX Research Methods Matrix (Updated 2024)

The following matrix reflects an updated, comprehensive view of UX research methods as applied across the product design lifecycle for SSA's native mobile application program. Each method is mapped to its research type, the phase of work in which it is most applicable, its intended goal or output, its alignment with 2024 UX research trends, and its recommended priority level. This matrix incorporates a 2023–2024 SaaS-informed mentality — emphasizing continuous discovery, embedded feedback loops, and democratized research practices.

Research Method	Type	Phase	Goal / Output	Alignment	Priority
Contextual Inquiry	Qualitative	Discovery	Understand in-context user behaviors and pain points	Empathy-led design	High
In-Depth Interviews	Qualitative	Discovery / Validation	Uncover motivations, mental models, and needs	Jobs-to-be-Done (JTBD) framing	High
Diary Studies	Qualitative	Discovery	Longitudinal behavior patterns over time	Continuous discovery practices	Medium
Usability Testing (Moderated)	Qualitative	Design / Validation	Identify friction in task flows; observe workarounds	AI-assisted session synthesis	High
Usability Testing (Unmoderated)	Qualitative	Design / Validation	Scalable task-completion testing across diverse users	Remote-first research ops	High
Heuristic Evaluation	Qualitative	Audit / Iteration	Expert-led review against UX heuristics and standards	Accessibility-first audits	Medium
Card Sorting (Open/Closed)	Mixed	IA / Discovery	Define intuitive information architecture	Personalization IA models	Medium

Research Method	Type	Phase	Goal / Output	Alignment	Priority
Tree Testing	Quantitative	IA / Validation	Validate navigational structure and findability	Mobile-first nav validation	Medium
Surveys / Intercept Surveys	Quantitative	Discovery / Post-launch	Measure satisfaction (CSAT, NPS) and quantify issues	Embedded SaaS feedback loops	High
A/B Testing	Quantitative	Optimization	Compare design variants to optimize conversion and UX	Data-driven product iteration	High
Analytics Review	Quantitative	Ongoing	Track behavior patterns, drop-off, and engagement	Product analytics + heatmaps	High
Eye-Tracking	Quantitative	Validation	Assess visual attention and layout effectiveness	AI gaze prediction tools	Low
Accessibility Testing	Mixed	Throughout	Ensure WCAG 2.2 compliance for all user groups	Inclusive design mandate	High
Stakeholder Workshops	Qualitative	Strategy / Kickoff	Align product vision and define success criteria	Cross-functional design ops	High
Concept Testing	Mixed	Early Design	Validate direction before high-fidelity investment	Lean UX / prototype testing	Medium
Competitive / Comparative Analysis	Mixed	Discovery	Benchmark against best-in-class public sector & SaaS apps	SaaS parity expectations	Medium

Note: Priority levels reflect general recommendations for the SSA mobile program context. Teams should adjust based on sprint cadence, resource availability, and stakeholder needs. A "High" priority does not mean sequential — many methods should be conducted concurrently across parallel workstreams.

Design (UEF) Approach

The Design System incorporates federal standards to improve federal websites and digital services. The 21st Century Integrated Digital Experience Act (P.L. 115-336 § 3(e)) requires that any website of an executive agency made available to the public after the date of enactment shall be in compliance with the website standards of the Technology Transformation Services of

the General Services Administration. This requirement will also be extended to native apps and any additional digital products. While the current U.S. Web Design System (USWDS) maturity model focuses on integrating trending design principles, user experience standards, and use of USWDS code, it does not yet address all components needed for native apps.

The solution is the User Experience Framework (UEF). UEF is a design system that contains a collection of reusable design elements, patterns, and standards which are part of the guidelines used to create a consistent user experience. In April 2022, UEF 3.0 BETA was released — a new modernized framework with refactored components that focus on a fresh modern look and feel with new modern component designs. The most recent release prioritized:

- Removal of technical debt from UEF 2.1
- Support for dark mode and theming
- Alignment with United States Web Design System (USWDS) guidance

Additional advantages of UEF 3.0 include its design for robust, transactional web applications (public or business-use), a larger collection of components, interactive elements, and dynamic forms. Because of the ever-evolving nature of the digital ecosystem, UEF 3.0 also uses W3C Web Components for future-proofing the framework, ensuring SSA products will align with current digital design and experience trends. With the native app environment, UEF can be applied to the app design process not only to create a compliant system, but also a reusable one — facilitating speedier development and more efficient production.

5. Setting the Scope — Establish what needs to be done, what you want to achieve from the app, and how large or small it needs to be. The scope may include: prioritized features of the app, visual design, and technology overview.
6. UX Wireframe and Prototype — The visual representation of the app's structure, including the user interface, transitions, and interactions.
7. Software Architecture — The entire team, including designers, developers, and product managers, collaborates to improve frontend and backend processes by constructively evolving the software architecture, including OS-level development considerations.
8. Testing — Comprehensive usability, accessibility, and quality assurance testing across devices, operating systems, and user groups.
9. Release — Staged rollout with post-launch monitoring, feedback collection, and iteration planning.

Objective 3: Continuing Our Work and the Importance of Continuous Research

In today's landscape, the digital environment continues to grow and evolve at an astronomical rate. The mobile industry has been instrumental in extending connectivity to individuals. It is no secret that high-speed internet access, or broadband, is critical to civic engagement. Yet, there is a persistent digital divide between people who have access to high-speed internet and advanced telecommunications, and those who do not. According to a report conducted by the FCC's Office of Economics and Analytics in 2020, 'The Digital Divide in U.S. Mobile Technology and Speeds,' rural areas are somewhat more dependent on non-Wi-Fi mobile technology and experience slower speeds on their mobile connections. The report also found that areas with

higher minority populations and older populations were more likely to use older mobile technologies and experience slower speeds.

Under the auspices of the President's EO and SSA's Vision 2025, this work will assist in breaking down barriers to providing more effective services among those who find difficulty in mobile internet adoption — which is prevalent among certain segments of the underserved population, including women, the elderly, those in rural areas, and persons with disabilities, or a combination thereof. These challenges can be addressed with constant research efforts that follow trends in population growth, the disability and retirement waves, an aging employee base, increased employee turnover, technological advancements, fiscal constraints, and increased customer expectations — all of which present an opportunity to address the support needed by those groups with innovation and vision toward the future.

Conclusion

Every step of mobile app development necessitates extensive research. Obtaining important information and attending to the demands of the customer will assist in the construction of an application that is helpful, innovative, and well-received by the general public.

Continuous testing to evaluate the app's applicability, attention to quality, staying current with what every end user desires, and extensive analysis are all smart approaches to guarantee that an application continues to fulfill the goals of SSA to provide equitable access to services and benefits.

Mobile devices serve as linking points for crucial aspects of SSA customers' lives — including public and private interactions, lifestyle management, and access to information. As a result, what the customer demands, what they need, and awareness of those needs are what will best serve the development of mobile applications.

Adopting a 2023–2024 SaaS UX mentality — grounded in continuous discovery, data-informed iteration, and inclusive design — positions SSA's UXG to deliver a native mobile experience that is not only compliant and functional, but genuinely valued by the people it serves. The investment in a mature UX research and design practice is, ultimately, an investment in the public trust.