

◆ Banking 101: Mobile-izing Financial Inclusion in an Emerging India

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The market for mobile financial services in India is growing steadily. With 41 percent of India's adults financially excluded, however, promoting financial literacy requires serious attention. We present Banking 101—a contextually relevant, mobile storytelling tool that, if integrated with mobile financial offerings, can offer a holistic solution to financial exclusion.

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Introduction

Mobile penetration in India is predicted to reach 97 percent in 2014 [11]. Technological advancements and affordable pricing have made the mobile platform suitable for targeted outreach of value-added services (VAS) to users at the bottom of the pyramid (BoP) [10]. Mobile financial services are among the VAS to have entered the Indian market that could have tremendous impact on reducing the currently high percentage (41 percent) of India's financially excluded adult population (largely from the BoP) [9].

Financial literacy is a prerequisite for financial inclusion and successful adoption of mobile financial offerings. BoP users are often unaware of available financial services or carry prejudices against them. They lack necessary financial discipline and saving habits, and do not recognize the benefits of formal savings [13]. Not only does financial illiteracy prevent an individual from improving his personal finances, it is also detrimental to the nation's economic growth [6]. This heightens the need to educate unbanked users about formal financial options and their potential benefits.

To address the need for financial literacy in the BoP, we propose Banking 101—a contextually

relevant, mobile storytelling application, which, if integrated with mobile financial offerings, can suitably educate users about savings, investments, and more, hence providing a holistic solution to financial exclusion. Factoring in the low literacy rates of target users, Banking 101 uses a culturally appropriate storytelling approach with minimal dependence on text [1]. In this paper, we first review related work and describe Banking 101—including design objectives, contextual interviews conducted, the prototype, and lessons learned from user studies. We then present potential for future work and offer our conclusions.

Background and Related Work

Mobile financial services are becoming increasingly prevalent in India but access is generally limited to the elite [14]. Although BoP users commonly own mobile phones, they remain financially excluded. We argue that financial illiteracy in the BoP hinders adoption of these services. The Reserve Bank of India (RBI) launched a comic series to encourage greater subscription to banks [12]. While an innovative means of imparting learning, these comics are

accessible only to those who read English. GE Capital also launched a financial literacy project to educate women and youth in urban slums about financial planning [7].

RBI's drive for financial inclusion aims at enabling every household's access to at least one zero minimum balance "no frills" account. Local public sector banks have taken the lead in opening at least one account per family in at least one district in each state [3]. The informal sector (including micro-finance institutions) has seen its share of expansion as well [8]. The state-sponsored financial inclusion efforts currently targeting the unbanked poor must also address financial literacy if they are to truly benefit their target population.

Contextual Interviews

Following the tenets of user-centered design, we conducted one-on-one semi-structured contextual interviews with six participants—all young males employed at a local university cafeteria in Gandhinagar (Gujarat). Out of the six, one had attended high school, four had attended middle school, and one was illiterate. Their monthly incomes were in the range of USD 100–200. Although our sample was small, we argue that it represents a substantive segment of the Indian population with low-literacy levels and meager monthly incomes. Our interviews were aimed at understanding a) how financially literate they were, b) how familiar they were with locally available financial services, and c) what apprehensions perpetuated their exclusion.

Our findings revealed poor financial literacy levels. Only one respondent knew that a bank offered interest on deposits, and none of them knew about different kinds of bank accounts. Two out of six had entered a bank, but none had a functional bank account. All six desired more information about the banking process. Our interviews also uncovered various misperceptions about financial services, for example, that only educated people can open bank accounts; that banks only let customers deposit large sums of money; and finally, that the process for opening a bank account is very complex.

Panel 1. Abbreviations, Acronyms, and Terms

BoP—Bottom of the pyramid
RBI—Reserve Bank of India
VAS—Value-added services
XML—Extensible Markup Language

Design Objectives

Based on our contextual interviews and survey of existing work, we proceeded to address the challenge of financial literacy by developing a mobile learning tool following these design guidelines:

- Although literacy rates have statistically risen to 64 percent across India, a large percentage of the rural and peri-urban population in India is at best semi-literate [2]. The user interface of our tool must therefore be minimally text dependent and leverage the phone's audio capability. This inspired our storytelling approach targeted at increased user engagement.
- Contextual relevance is key for a learning application [4]. Therefore, appropriate contextual references should be included to facilitate learning.
- To be able to address the different cultures and sub-cultures in India, it is essential for the application to be easily localizable and minimize language dependence.
- Modularizing the application would make it more easily accessible to users at varying levels of financial literacy. It would also make learning easier by feeding information in smaller chunks—each module addressing a single financial concept, such as saving or investing.

Prototype Design

Situationist arguments emphasize that the learner is an active, social, and dynamic organism and that research on the nature of learning must examine the socio-cultural framework in which learning occurs [5]. Banking 101 creates a learning environment the user can relate to. It explains basic financial services to the financially excluded by using a skit-based approach, drawing the user into a narrative with characters and visuals common to

rural/peri-urban India. The language of instruction used is the native dialect. Decisions regarding the mobile interface, the storytelling approach to culturally relevant instruction, the contextual curriculum design, and the audio-visual interaction component were based on the findings from user interviews. We developed Banking 101 in Adobe Flash* Lite* 2.0 and used an Extensible Markup Language (XML) backend to support multiple language story lines and handle application resources.

Banking 101 begins with an audio prompt offering a list of modules, each with a unique learning objective corresponding to a distinct financial concept. Users select a module, and are then shown a skit consisting of a series of still images that walk them through the concept using audio captions. After viewing the module, users are prompted to answer a set of multiple-choice questions to provide feedback on what they have learned.

Module 1 introduces Ramu and Shamu—brothers and farmers (see **Figure 1** and **Figure 2**). When hit by the floods, Shamu takes a bank loan while Ramu approaches the local moneylender. Shamu buys a tractor with his loan and becomes rich, while Ramu remains immersed in debt. This comparison

illustrates the benefits of formal banking. Questions at the end of the module aim to ensure that the user understands the difference between Ramu's and Shamu's approaches. In module 2, Raju (a bank expert) introduces Shamu to the bank. Shamu asks Raju questions about banks and Raju responds. He then teaches Shamu how to open an account. Module 2 thus introduces a bank, bank accounts, and bank officials. The questions asked in this module focus on whether the user, like Shamu, understood how to set up a bank account. Module 3 and module 4 respectively aim to teach the user how to borrow and how to save money, while also explaining the implications of these actions. Module 5 introduces local financial offerings and provides advice on how users can reach out to institutions within their community. The curriculum for these modules was laid out in order to demystify the critical steps towards financial inclusion and reduce barriers to access by learning about the products and services offered by local financial institutions.

Iterative Design

We conducted an assessment of our tool with five education scholars who also had background on

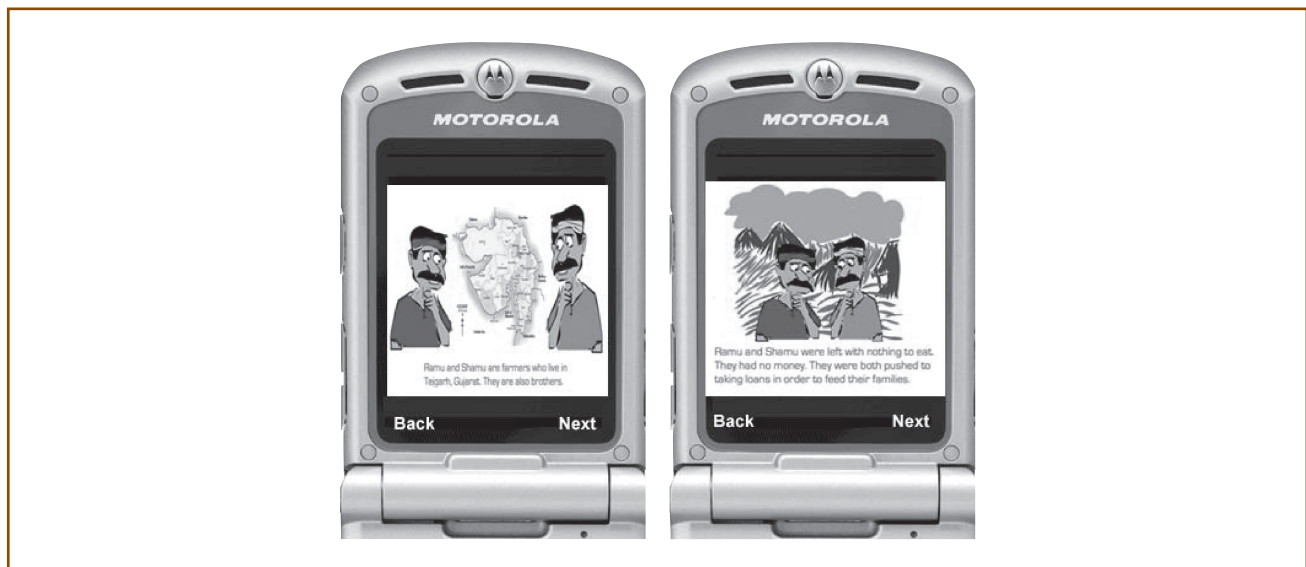


Figure 1.
Contextual references allow the user to relate.

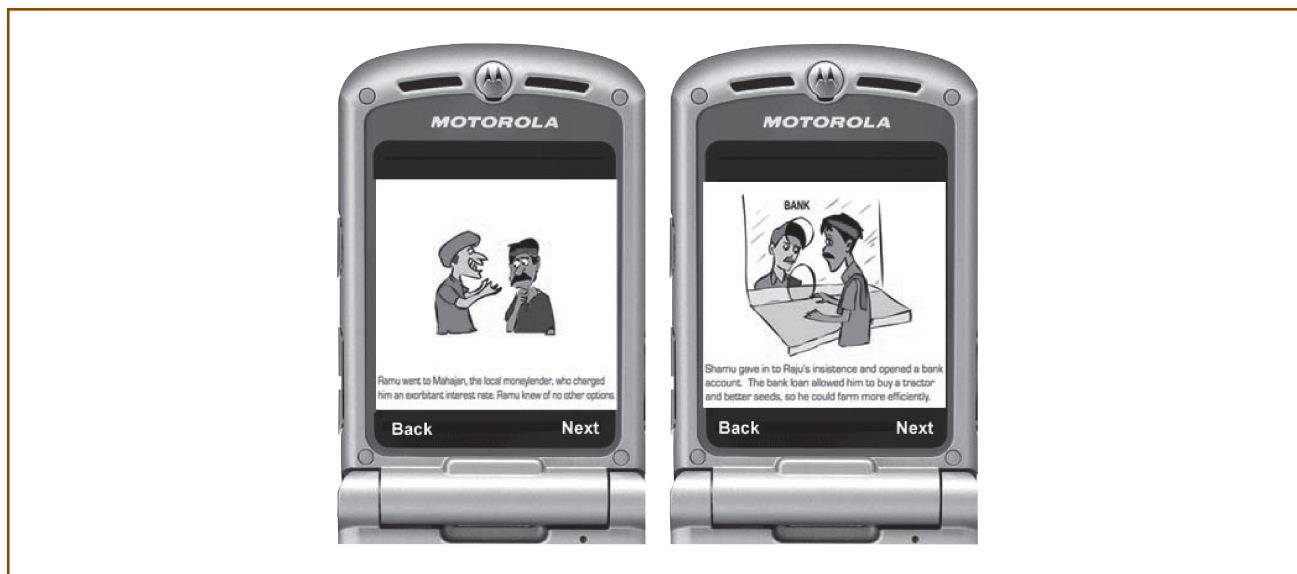


Figure 2.
Ramu's and Shamu's differing financial approaches seal their fate.

the day-to-day realities and cultural contexts of our target users, and understood the relevance of financial services. Their feedback was largely positive. All agreed that our application was contextually and culturally relevant, and introduced financial concepts well. One participant recommended that we highlight the fact that Ramu remained poor because of the high interest rates charged by the moneylender. Another participant told us to improve the resolution of the captions. Based on this feedback, we improved our design and conducted another assessment with the potential users we had interviewed. Five out of six felt the tool would be useful. One commented, *"This is useful. Now everything will fit into the fist of my hand."* The users were animated and eager to learn, asking, *"What documents are required to open a bank account?"* and *"Can a bank give me extension on a loan repayment?"* After further work to fine-tune our design, we will approach telecom operators so our tool may be integrated with their mobile financial offerings. We envision a distribution model akin to public awareness campaigns whereby banks and/or microfinance groups will circulate Banking 101 within BoP communities to demystify the banking process.

Conclusion

Banking 101 is a mobile learning tool that addresses financial inclusion among underserved sectors of Indian society by imparting financial literacy and increasing awareness about formal financial services. It adopts a modular, contextually and culturally relevant approach to achieve its learning objectives, and is designed to be minimally text-dependent and easily localizable. In a preliminary evaluation, our users attested to the relevance of Banking 101. We will execute a longer term, systematic study with more participants to obtain a more rigorous assessment of the learning gains from Banking 101.

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