



# Case Study: Amplio Talking Book

## Reaching the world's hardest to reach communities

### Principle(s) addressed:

Understanding the Existing Ecosystem, Design with User, Build for Sustainability, Be Data Driven



### Overview

Amplio's technology enables partners to extend their reach, amplify their messages and the voices of the communities they serve, and enhance their impact. With the Amplio Talking Book, development practitioners can deliver hours of targeted audio content in a community's local language. Users can play messages on demand and record their feedback. A built-in speaker lets families and groups listen and learn together.

Because Amplio's technology collects usage data and user feedback, program staff can monitor Talking Books in the field, analyze message engagement to identify issues and trends, and continually update their content for greater success.

The Talking Book is a simple, cost-effective ICT for development tool that supports knowledge delivery in last-mile communities. The device design overcomes barriers to reaching people who lack access to information due to poverty, low literacy, lack of electricity or internet, local languages, and gender biases.

### Background

Amplio designs its products with the end-user in mind to be collaborative and data-driven. The Talking Book was originally envisioned as a tool to help people in developing countries learn to read. However, after field-testing the device in Ghana, Amplio realized the Talking Book was better suited as an ICT for knowledge delivery in last-mile communities.

### Objectives

To empower vulnerable communities through knowledge sharing, [Amplio](#) designed the Talking Book—a rugged, portable audio device that runs on locally available and rechargeable batteries. The main goals include:

- Reaching low-literate people in remote, rural communities to deliver actionable knowledge across any sector through an equitable, cost-effective, easy-to-use device.
- Empowering vulnerable populations, including women and youth, with an inclusive digital technology that they can use when and where it's convenient to gain new skills and knowledge to improve their livelihoods and lives.
- Enabling partner organizations to collect usage statistics and user feedback to continuously improve program monitoring, evaluation, and impact through quantitative and qualitative data.



Early on, Amplio targeted low-literate adults and youth in northern Ghana, in rural areas with limited access to electricity. These hard-to-reach communities were infrequently visited by agriculture extension agents and community health workers. Consequently, they were often overlooked by efforts to boost crop yields, distribute vaccines, or improve sanitation and hygiene conditions for disease prevention.<sup>1</sup> With the battery-powered Talking Book, health workers and extension agents could deliver relevant information, leaving the device in the community for people to continue to listen and learn.



Visit the [Amplio Website](#) for more information.

## Actions

Amplio's core approach in designing the Talking Book was to prioritize on-the ground [collaboration](#), inclusive access, and [continual learning](#).

### Analysis & Planning

When creating the Talking Book, Amplio assessed [existing ICT options](#), such as radio and mobile phones, but determined a different approach was needed. The team understood that designing a successful digital solution required community input. After developing an initial prototype, Amplio conducted [user focus groups with rural communities](#) in the Upper West Region, Ghana. Through community feedback, the team identified some design flaws, which helped to inform context-sensitive innovations. These included Talking Book button placement, a front-facing audio speaker, iconography, dimensions (e.g., size and weight), and overall look and feel of the device, including color.

Many community members requested information about health topics, agriculture strategies, and how to start a small business. This feedback was useful for directing [local partnership efforts](#) with content development and distribution activities.

Based on their findings, Amplio adopted a content dissemination strategy. Although Talking Books can hold hours and hours of content, the team determined that 2-3 hours is about the right amount for users to easily navigate and absorb. Due to limited program staff and the poor infrastructure in rural areas that makes communities hard to reach, Amplio further recommended updating Talking Books every few months.



<sup>1</sup> UNESDOC Digital Library. "The Talking Book Programme: Case Study by UNESCO-Pearson Initiative for Literacy - UNESCO Digital Library," 2017. <https://unesdoc.unesco.org/ark:/48223/pf0000258879>.



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## Design & Development

Amplio's design approach demonstrates a number of [digital design principles](#). These include a lean startup methodology, understanding of the problem and the context, use of open source technology, and [evidence-based planning for scale](#).



Amplio has made various Talking Book upgrades, including more buttons, a front-facing speaker, a headphone jack, a USB port, and a silicone band for protection from moisture and dust. Significant changes were made to ensure that the icons in the display menu [suited the local context](#). Based on user preference, Amplio manufactured the device in several colors, which can be used to help distinguish different user groups.

Overall, with the Talking Book, learning is self-directed and user-centered. The rugged, battery-powered device is designed for people with zero literacy or numeracy skills. You don't need to be able to read to operate it. Rather, the Talking Book uses simple icons and audio prompts to help guide listeners. Users can pause and replay messages for better understanding or retention. The device has a built-in speaker, so families and groups of about 20 can listen and learn together. Users can also record their feedback.

Amplio's technology includes supporting software, including an audio content manager to import audio content, Talking Book Loader—a desktop/mobile app to update Talking Books and collect usage data and user feedback in the field, and an analytics dashboard.



Amplio originally used arrows in the Talking Book prototype. However, **after feedback and field testing with partners** in Ghana, the team redesigned the arrows with more universally and easy-to-identify icons. The team changed the left and right arrows to hands, while the up and down arrows were replaced with a mango tree and table, respectively. Amplio changed the central play/pause button to a bowl, and the asterisk to a five-point star. The recording circle and plus/minus icons remained unchanged.



Audio Content Manager



TB Loader



Amplio Talking Book



TB Loader



Analytics Dashboard





In 2021, Amplio is launching a suite of self-service [products](#) to help partners more easily and cost-effectively launch and run their programs. The Amplio Suite includes a learning portal with interactive lessons, a web form to help customize the program spec for their project, click-to-download software, and dashboard enhancements. Amplio will also launch [the Talking Book 2.0](#). The new version has a speaker with better clarity and a rechargeable lithium battery to reduce cost and waste, making Talking Books more sustainable. In addition, an Arm-based [Cortex-M4 processor](#) adds better data security and provides encryption of user feedback.

## Monitoring & Evaluation

Because Amplio's technology collects usage statistics and user feedback, partners can monitor engagement, gain a deeper understanding of community issues and concerns, and continually update and improve their content for greater impact.

Monitoring takes place across multiple stages. Field staff use the TB Loader mobile app to update Talking Books and collect usage statistics and user feedback. The next time their phone goes online, the app sends the usage statistics to Amplio's dashboard. User feedback requires a bit more processing before you can see it on the dashboard.

To monitor operations, you can track the distribution of content onto Talking Books, including the date, language, and location of the installation. This provides insight on whether communities are receiving updated and appropriate content. If a Talking Book has not been updated, it may indicate that a device is missing or broken, or that perhaps a community needs more support. To monitor program performance, you can track the number of times a message was played (started, played partially, or completed).

## Key Features



**Digital Inclusion:** The Talking Book can work in places that lack electricity and internet and for people who lack literacy or who are excluded by other technologies due to traditional gender norms and biases.



**On-demand access to information:** Users can listen when it's convenient, not just at a specific time, as is required for radio. Talking Book messages can be replayed as many times as needed in order to grasp the information.



**Local language context:** The hardest-to-reach communities often speak local dialects. Even radio content may not be in their local dialect. Talking Book content and system prompts can be customized in any local language.



**User feedback:** Organizations can collect user feedback from program participants to better understand community concerns and behavior change. This allows Talking Book partners to test assumptions so they can modify their program.



**Vast content:** Talking Books can hold hours of audio content with multiple playlists on a range of topics, allowing partners to address complex issues.



**No cost to end users:** Millions of people, especially women, cannot afford mobile phones or data plans. With Talking Books, there's no cost to end users.



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You can compare usage data between communities, groups, or agents to understand message effectiveness. Integrated Tableau visualizations present key indicators, making it easier to identify trends at glance and make evidence-informed programming decisions.

Amplio is currently piloting a new user feedback analysis process. With Transana software, you will be able to code pieces of user feedback based on topic and sentiment. One that's done, you can upload the data to the dashboard—effectively turning qualitative data into quantitative data for further analysis.

## Deployment & Implementation

Talking Books are deployed through household rotation, shared by community groups, used by extension agents to facilitate learning and discussion, or use a place-based resource in health centers, schools, etc. Often a program will use a combination of listening models. For example, members of a Villages Saving and Loan Association may meet weekly to listen to Talking Book messages together and then take turns borrowing the device to listen at home with their families. Depending on the program design, a single shared device can serve 100-150 listeners over the course of a deployment period.

Similar to community radio, Talking Book content is typically produced in the form of songs, dramas, interviews, and endorsement messages. Amplio and its partners with local experts to develop culturally appropriate, local language content.

To maximize learning, Talking Book partners often deploy new content on a quarterly basis. For example, content updates may address questions or concerns raised through user feedback, align with seasonal events such as school enrollment or planting season, and build on previous deployments to promote knowledge and healthy behaviors around complex issues like [child marriage](#), [land rights](#), and [grievance redress](#).

## Challenges

Development projects often face challenges to reaching vulnerable populations in rural, remote, and off-grid areas. In northern Ghana, some rural communities can take up to 15 hours to reach from the regional capital due to poor road conditions. Poverty, low literacy, locally spoken languages, lack of electricity and/or internet, and traditional gender norms and biases also limit access to information.

Attempts made to overcome these challenges have included using existing technologies such as radio and mobile phones. Yet these interventions are limited in their ability to incorporate an inclusive design



## COVID-19 Response

In response to COVID-19, Amplio worked with Ghana Health Service to deliver an emergency public health campaign in the Upper West Region. Community health nurses and volunteers used Talking Books to share consistent and accurate messages about COVID-19 symptoms, prevention, and treatment. Since GHS nurses are routinely rotated, they often do not speak the local language. With Talking Books they can more efficiently and effectively share health information in the community's local language. Other partners, including Landesa and VSO, used Talking Books to maintain social distance and continue their important educational programs in spite of the pandemic.



approach. As development projects increasingly turn to mobile phones and digital technologies for program and service delivery, there's a risk of creating new groups that are left behind, including women and girls.

According to GSMA's 2020 Mobile Gender Gap Report, over a billion women don't use mobile phones or the internet. Women's barriers to mobile internet include low literacy and digital skills, affordability, safety and security, relevance, and family disapproval.

Radio is one of the cheapest ways to reach and share information with low-literate rural communities. However, radio stations may not always reach communities, broadcasts may not be in a community's local languages or at a convenient time of day, and listeners cannot pause or replay content.



## Lessons Learned and Recommendations

The key factors to developing a successful product is to understand a community's specific structures; to understand the end user's specific needs. This depends on the building of collaborative partnerships. The Amplio team has done this!

- **Understanding the existing ecosystem** is critical to the development of a digital product that meets the needs of end users in developing countries, including both program staff and participants. Amplio spent months conducting extensive field research to understand the problem it hoped to solve. This resulted in a reframing of the project's focus, with a deeper understanding of the barriers to reaching low-literate people in last-mile communities.
- Amplio is **data driven**. Because Talking Books collect usage statistics and user feedback, partners can monitor user engagement, identify issues and trends, and continually update and improve their content for greater success.
- Amplio **designs for scale**. One Talking Book can reach 150 people in 7-10 weeks, allowing programs to reach more people in less time with fewer personnel. Amplio's new learning portal and other self-service tools allow programs to train and support staff, reducing the need for external consultants—which reduces costs and also contributes to scale.
- Amplio **promotes learning and collaboration** across multiple sectors, working closely with international organizations, government agencies, and local NGOs to empower vulnerable communities with access to knowledge. Amplio also convenes a community of practice to share strategies and lessons learned for Talking Book technology, content development, M&E, and behavior change. Partnership is an Amplio core value.