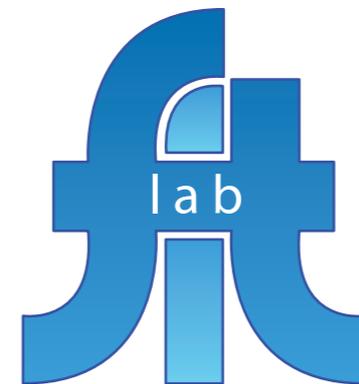


AudioCanvas: Internet-Free Interactive Audio Photos

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Advertisement for Polio vaccination in Hindi. The main text reads: "पूरा तभी आपका प्यार जब मिले बच्चे को पोलियो सुराक हर बार" (Full love only when you give the child polio vaccine every time). A large graphic shows a baby's face with the number "24" and "नवम्बर" (November) indicating the date. Logos for WHO, UNICEF, and CDC are visible at the top and bottom of the poster.

पूरा तभी आपका प्यार
जब मिले बच्चे को पोलियो सुराक हर बार

24
नवम्बर

पोलियो सुराक हर बार

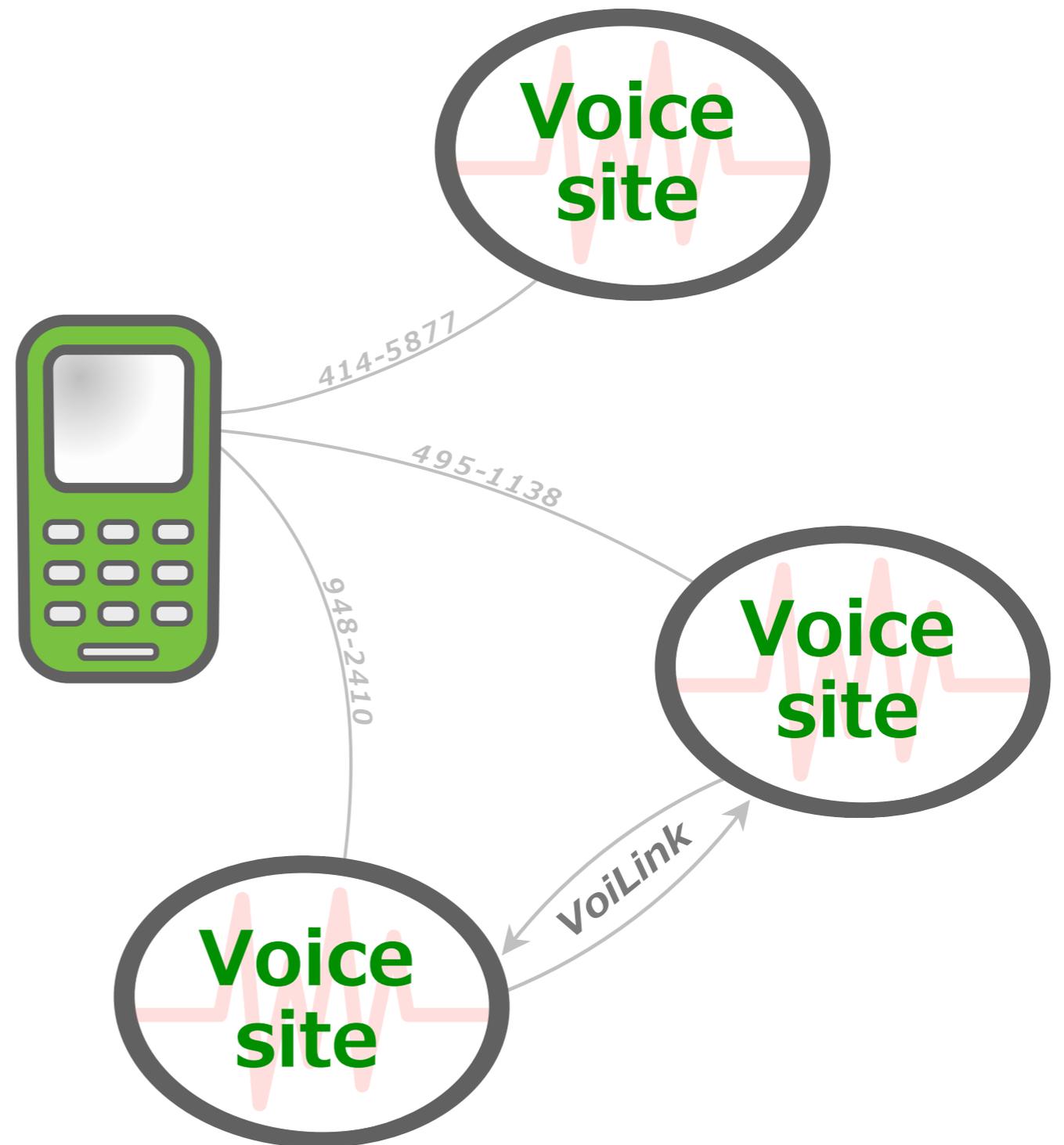
24
नवम्बर

पूरा तभी आपका प्यार
जब मिले बच्चे को पोलियो सुराक हर बार

WHO, UNICEF, CDC

The Spoken Web

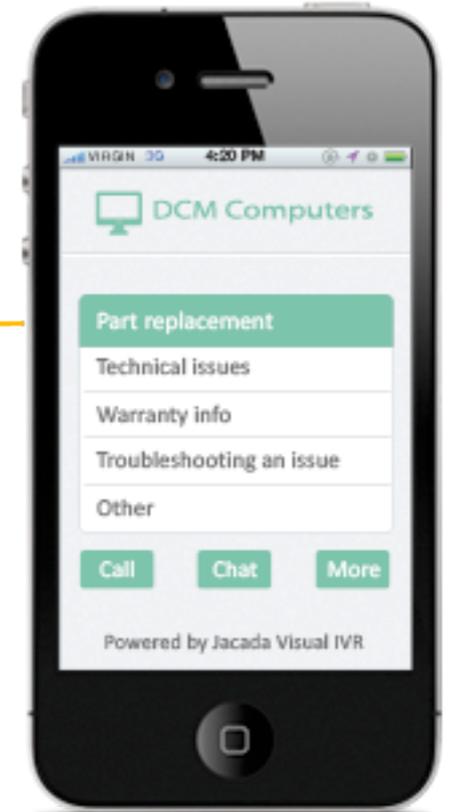
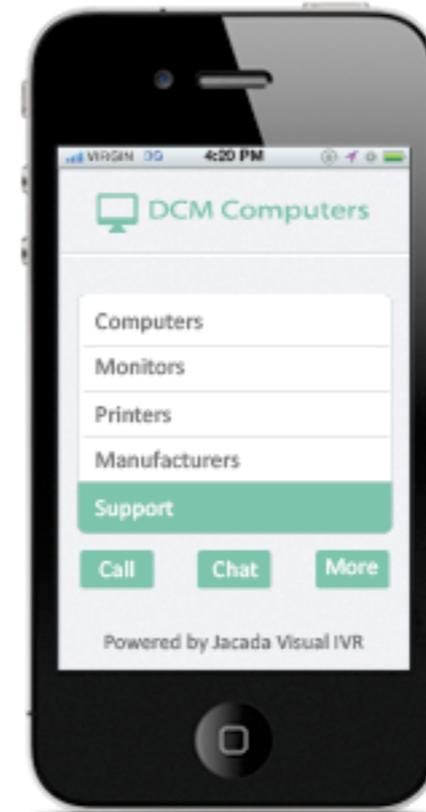
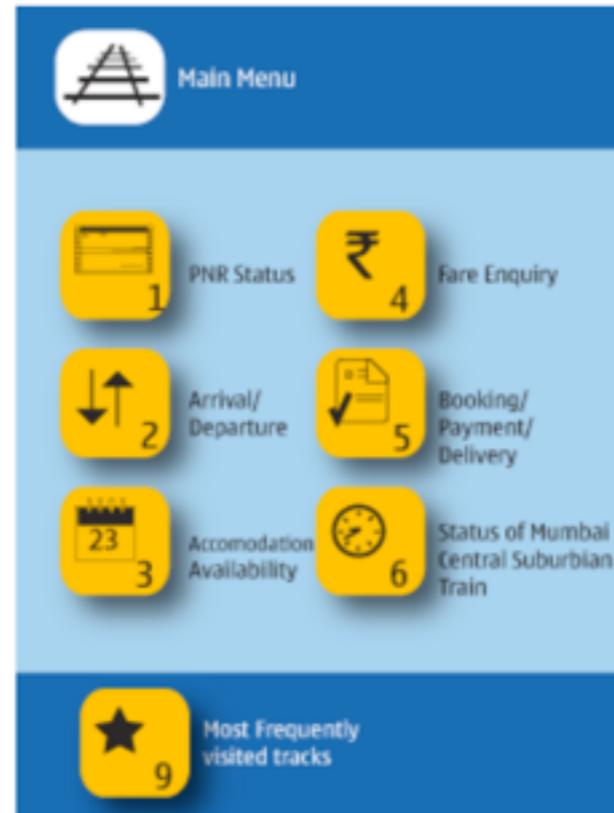
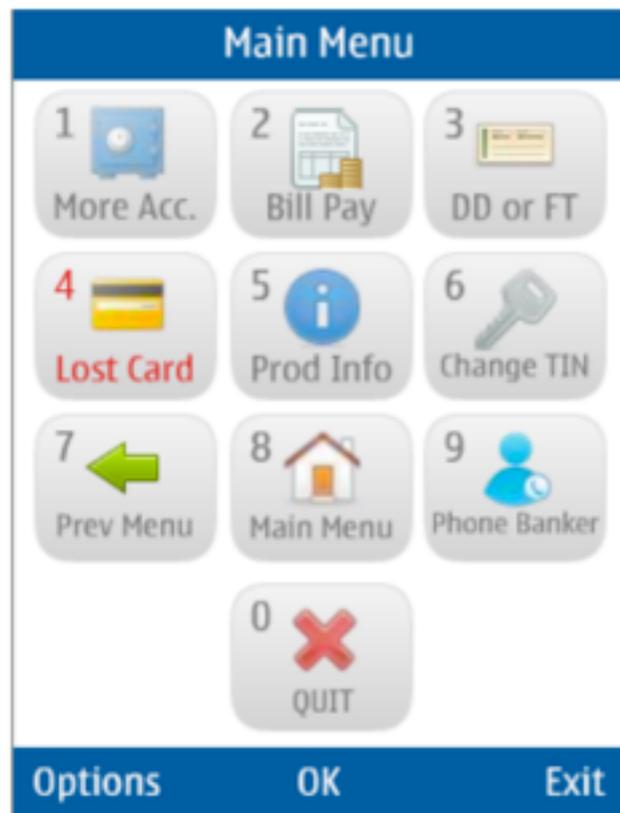
- Interactive telephone system
- Voice-driven alternative to the internet
- Developed by IBM Research (Delhi)



Adding audio to printed media

- IVRs are audio-based, for good reasons:
 - Compatibility, cost, literacy
- Printed media can be beneficial:
 - Summary at a glance, easy navigation
- Can we connect these spaces?

Previous work



- Visualising existing IVR options (e.g., [Joshi et al])
- Image recognition for augmentation (e.g., Blippar, Shortcut, etc)

AudioCanvas

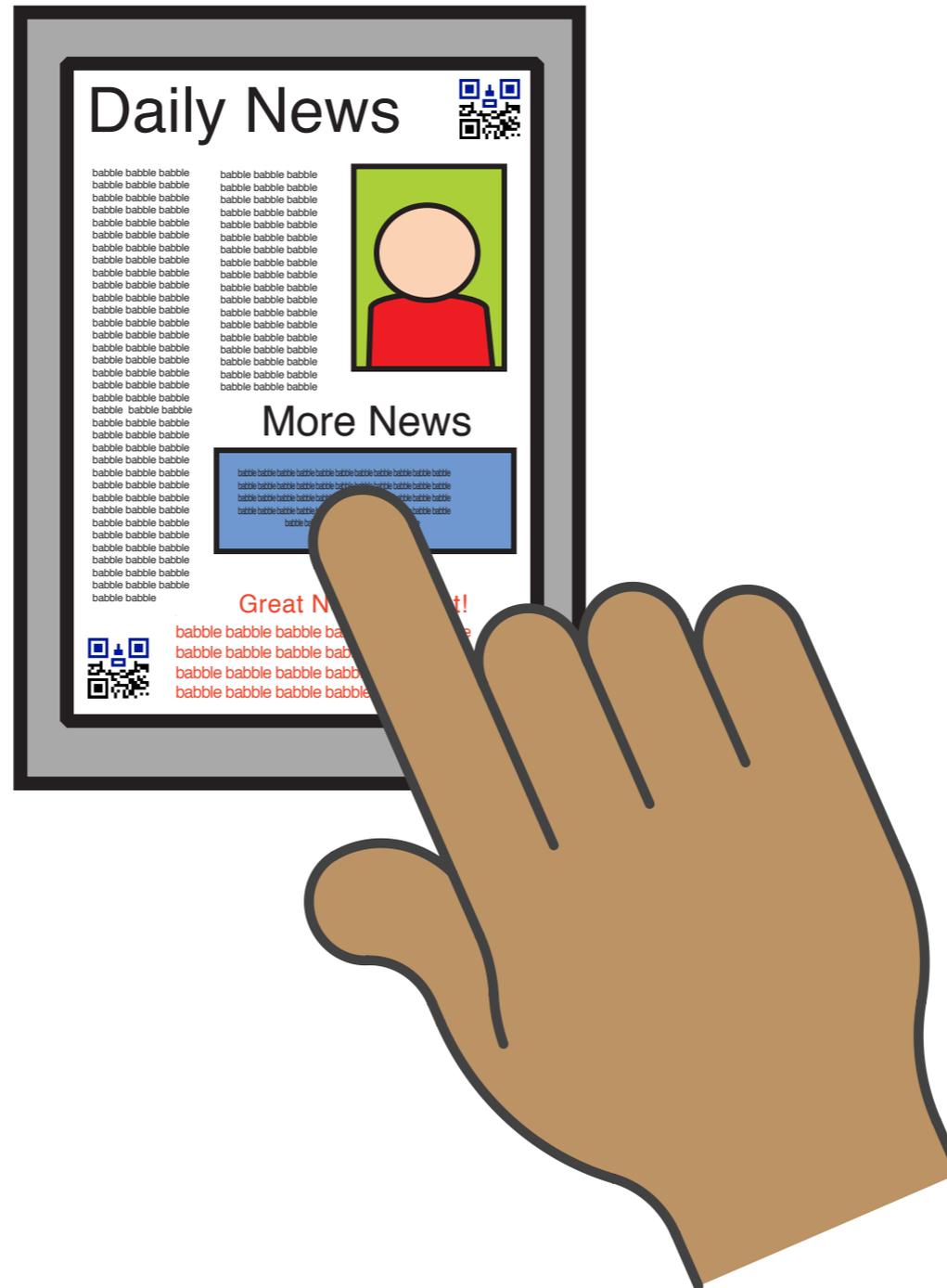
- Take a photograph of a media item
- Interact with audio from paired IVR service
- Two precisely positioned QR codes align physical objects so audio “hotspots” can be identified

Interaction



- Take a photo of the item using the phone's camera

Interaction



- Use the photo as a canvas to select areas of interest

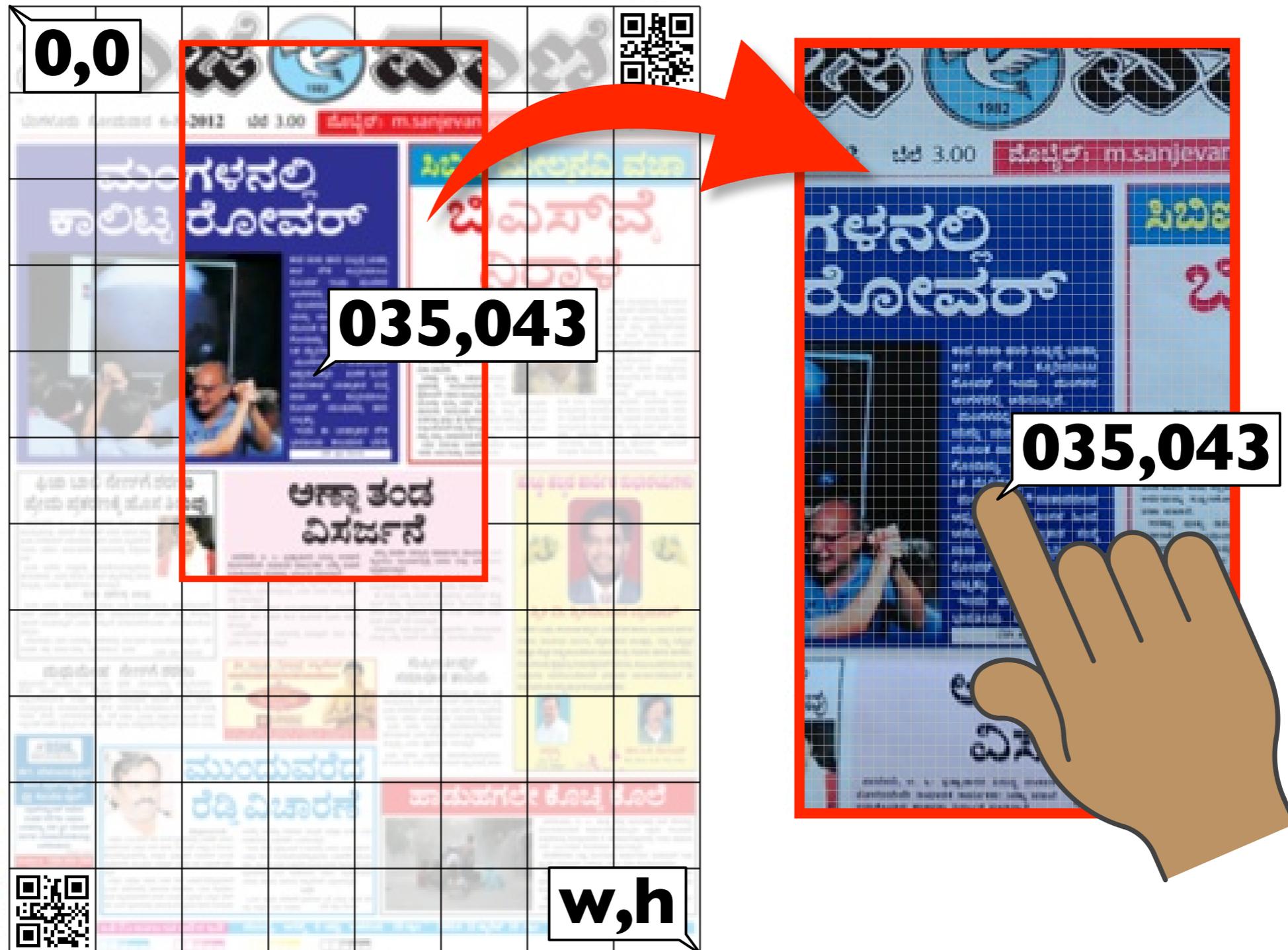
Interaction



- Listen to information about the selected region

(video)

Interaction precision



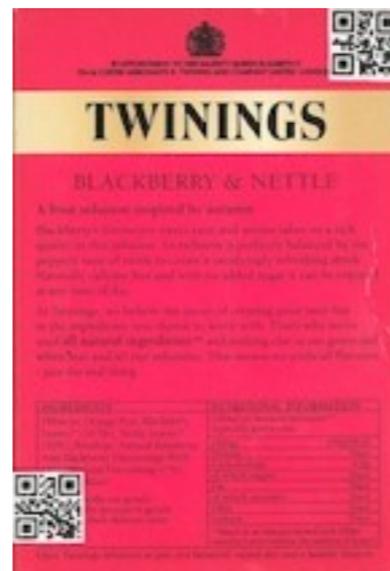
Benefits

- No internet connection required
- Client/media independence
- No specialist hardware (beyond cameraphone)
- Very fine level of interaction granularity

Evaluations

- **1:** Semiliterate users, low smart phone familiarity, intermittent data access (SA)
- **2:** Low-literate users, no smart phone familiarity, no data connections (India)

Evaluations



Evaluations

- Participants regularly found themselves in situations where they couldn't read something
- Rated aspects of the system: 5.8/7 (India)
- Saw real value in the design

Evaluations

- Focus Groups (SA):
 - “I’m asking myself how an article in English can be read in isiXhosa!”
 - “[I am] fascinated by the isiXhosa sound coming out!”
 - “I can see this as something that could really help me and empower people”



Conclusions

- Easily augment printed media with audio content
- No need to require data connections or media upload/download
- Can create new ways of interacting with audio-only services

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