

Concealed Information and Communication Technology in a Museum - from Speaking Cubes, Magic Mirrors and Living Books

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INTRODUCTION

The development of multimedia technology, mobile devices and sensor technology during the past 20 years has continually affected the creation of new applications based on emergent technologies. Whilst newly developed device types with different technical specifications have surrounded us in our everyday life and private environment, new base technologies have also been established step-by-step.

By combining the advantages of established technologies with these new approaches, and furthermore adapting those criteria to the different user needs and application scenarios, we are able to extend existing applications with new components and services and conceal the ICT.

“SPEAKING CUBE” AND “MAGIC MIRROR” FOR THE PERGAMON MUSEUM BERLIN

The main idea of the “Speaking Cube” is to conceal all information and communication technology such as embedded computer system, storage, speaker, battery, lighting system, sensors, WiFi and RFID and offer multimedia services. A multimedia service of such a “Speaking Cube” is for example a storyteller service. If you take the cube and shake it than the cube starts to tell a story.



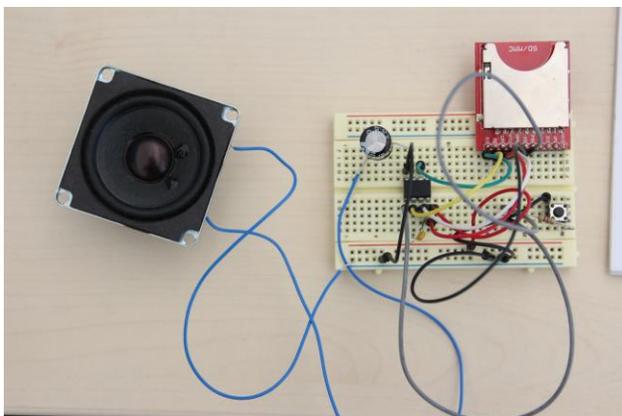


Fig. 1: Shape of the Speaking Cube (left)

Embedded ICT of the Cube (right)

If a user wants to have more information from the cube they have to go to the “Magic Mirror” and place the cube in front of the mirror. The Mirror reads the unique RFID and displays more information such as images, text, animations, movies or augmented reality applications.

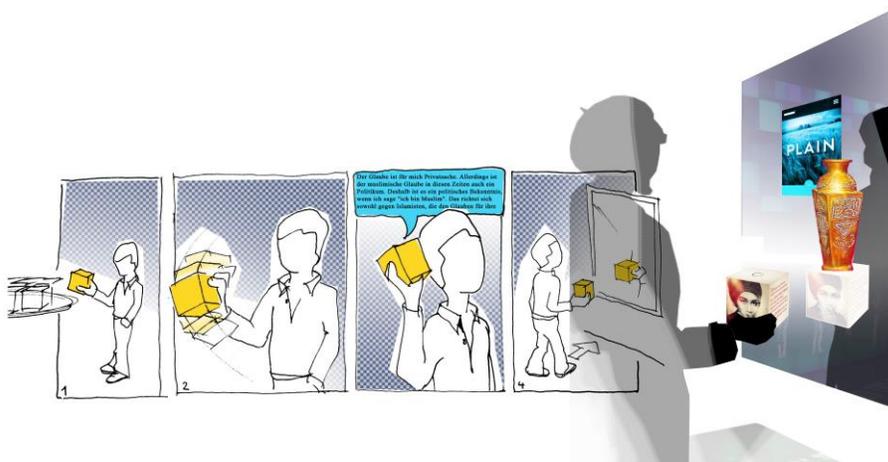


Fig. 2: Speaking Cube and Magic Mirror

“LIVING BOOK” FOR MUSEUMS AND EXHIBITIONS

A further example of an application with concealed information and communication technology is the “Living Book”. A traditional printed exhibition catalogue has only text, illustrations and photos. We designed a special desk with hidden computer, projector, speakers, RFID readers, WiFi network and spotlight. In addition, we equipped a traditional printed exhibition catalogue with a RFID tag on each individual page of the book. This allows the hidden computer system to recognise which page of the book is open. With this information the computer system presents multimedia information with the aid of the speaker and projector. The connected spotlight can point to the original object. The museum can also recommend additional artefacts in the collection and the location where the visitor can find these artefacts.

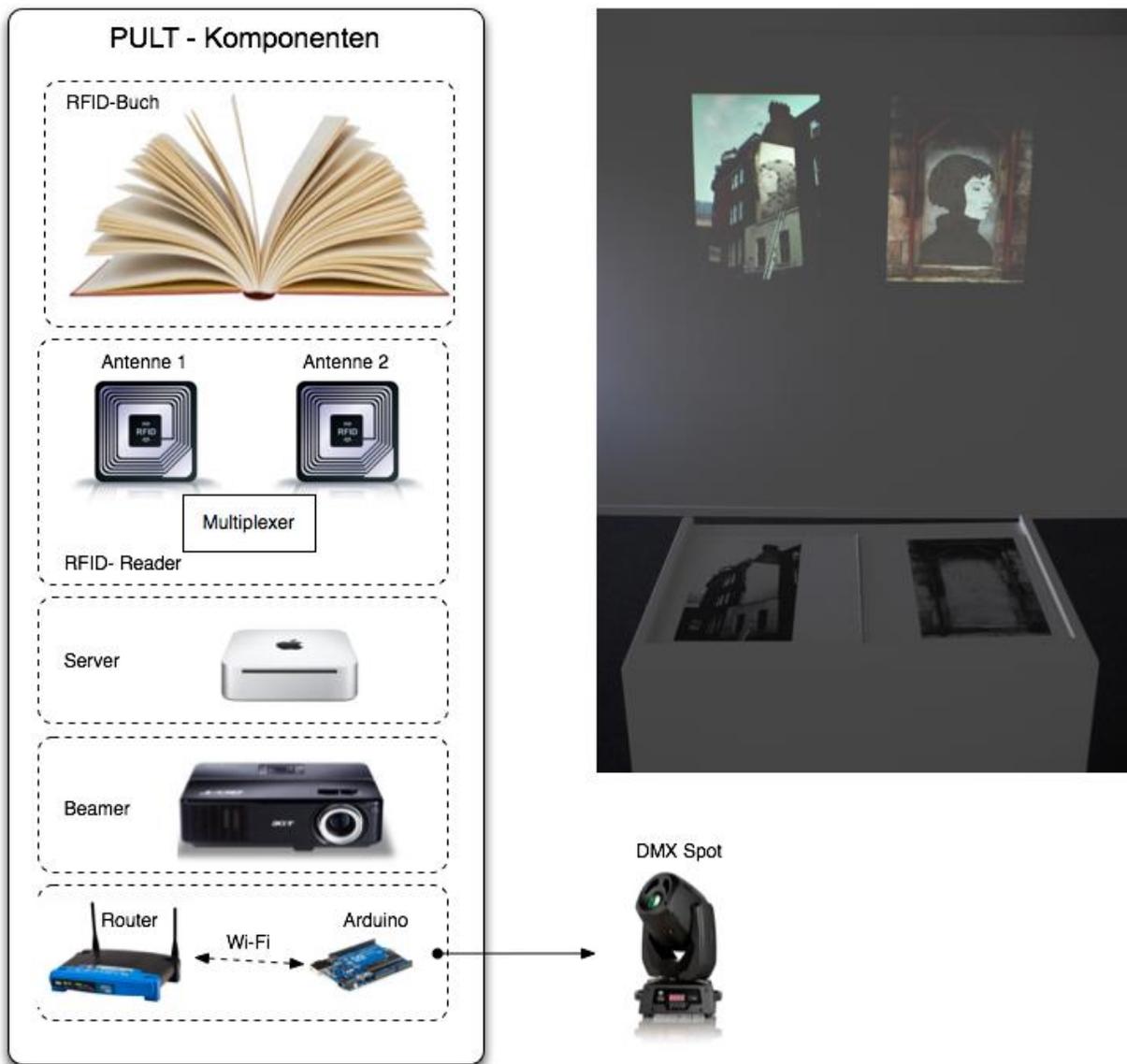


Fig. 3. Components of the “Living Book” and the desk (left) “Living Book” and desk in action (right)

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