innovative tools and services for the wireless city
in conjuction with the Local Municipality of Monteroni d'Arbia

A project realized by Marina Câmara, Marco Caselli, Roberto Cisco, Maurizio Nesti and Ivan Provenzale during the 1st Level Master in Communication Environments Design OCT 2005 – JUL 2006 press University of Siena - ARSNOVA Accademia per le Arti e le Scienze Digitali

Participation in the Siena Design Project 2006

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The Ystreet project focuses on the urban space of Monteroni d'Arbia (7000 inhab. - Tuscany, Italy); concepts and envisioning scenarios of innovative objects are designed for accessing and managing citizen services in public spaces bridging people, context, and activities.

Library Lounge was designed as an **adaptive space enhanced by digital technologies** to **extend the public library to the outdoors**

It is constituted by **reconfigurable modular elements** and furniture to support various **individual and collective activities** such as studying in group, downloading educational and entertainment resources, sharing contents, listening to audiobooks, partecipating to events, or just relaxing (reading a book).

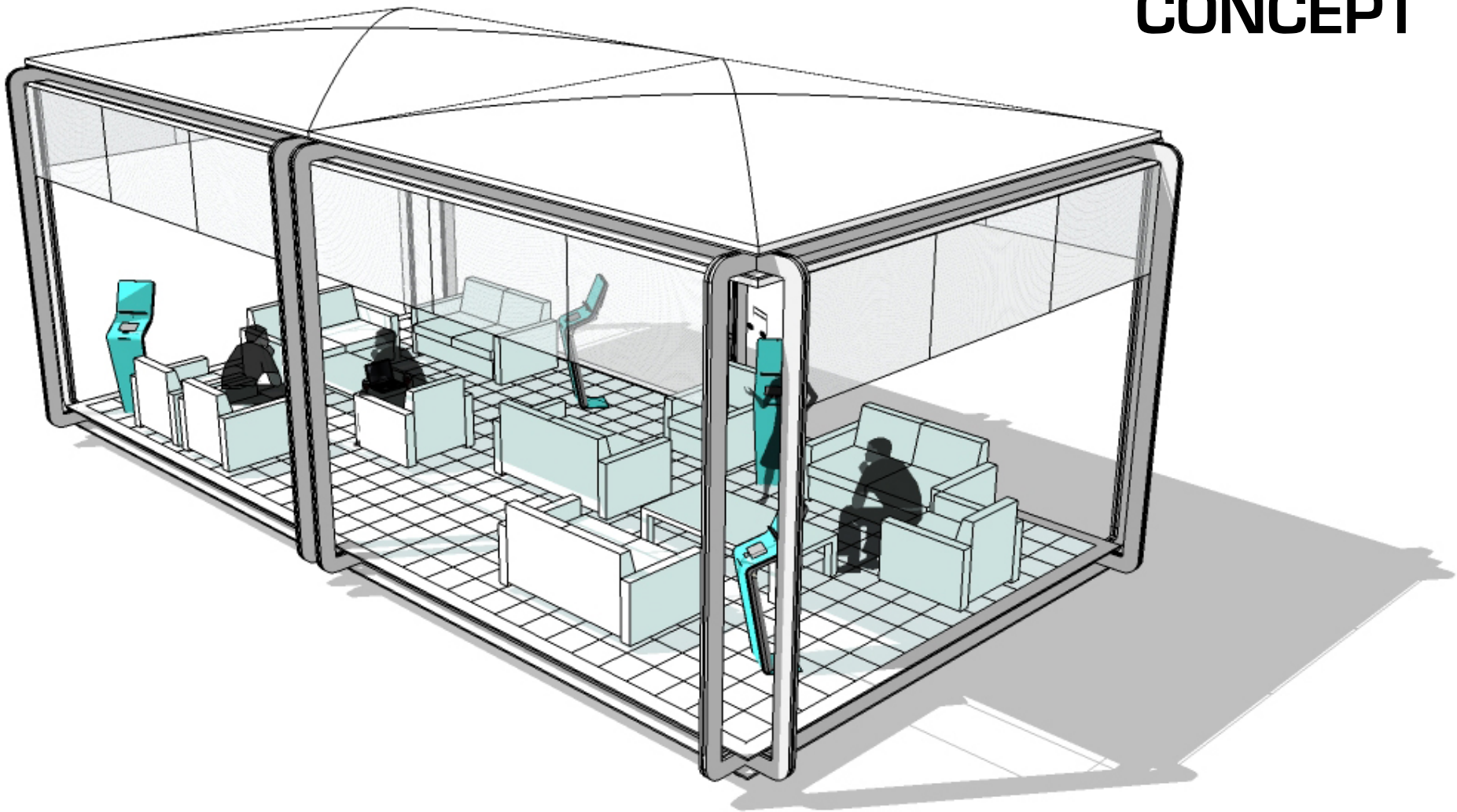
RFID tagged books from the library give access, in the specific lounge areas, to an extension of related contents from the web and previous users

Placing books on the device, gives a range of augmented information to be shared, downloaded, edited in order to increase an interactive cultural experience

The book loan associated to the Library Lounge system generates a continuous literary feedback from users to expand the community knowledge.

LIBRARY LOUNGE

CONCEPT



ACTORS/ROLES
high school and university students, residents, visitors

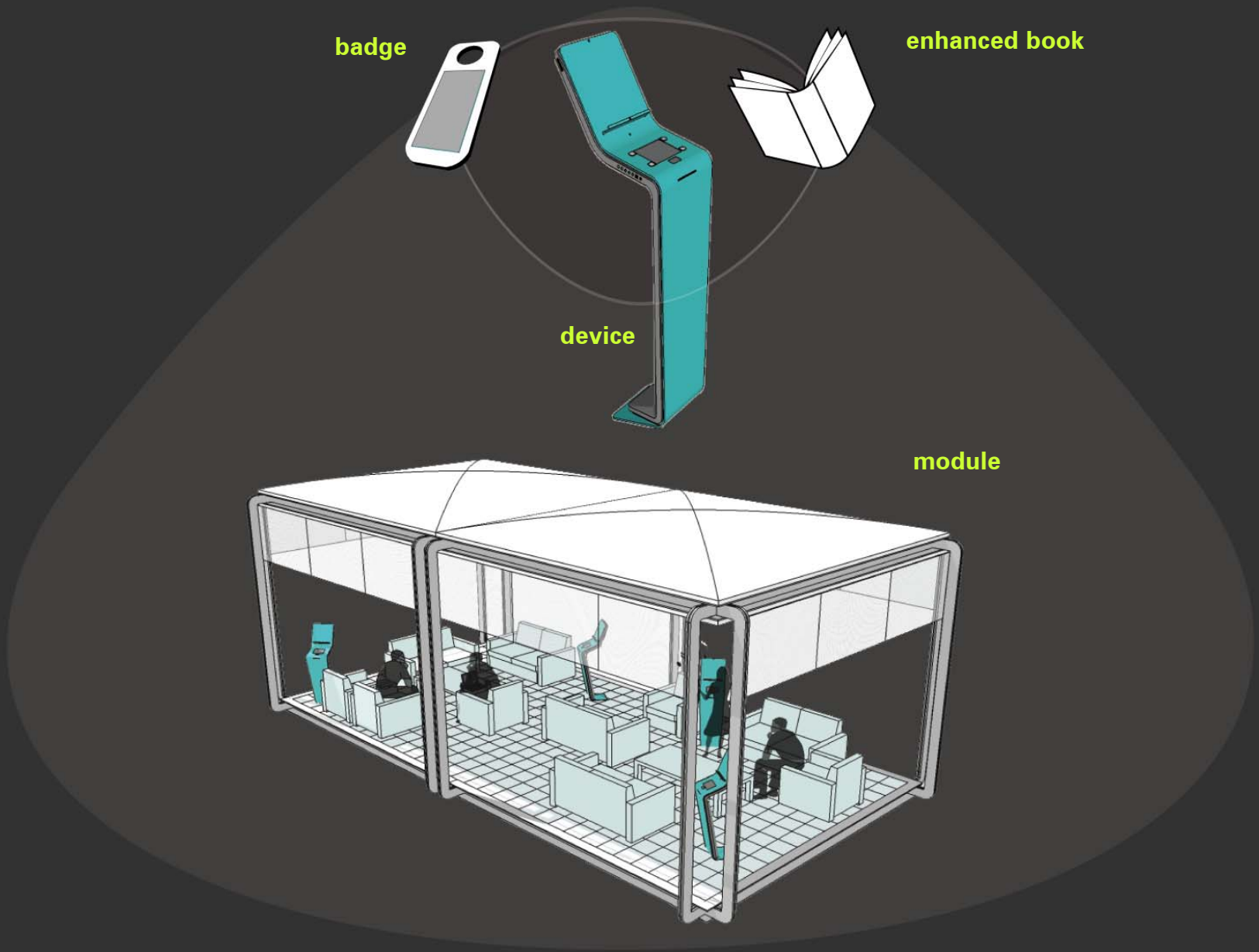
ACTIVITIES
group studying, educational resources downloading, didactic activities, entertainment and relax, personal contents sharing, events partecipation, audiobooks listening, book reading

PLACES
square outside the library, town park

TIME
from morning to evening

CONTENT
audio/video and textual educational resources (lessons, seminars, etc.), audio/video and textual contents (audiobooks, e-books, clips, etc.), audio/video entertainment resources (music, webradios, movies, etc.)

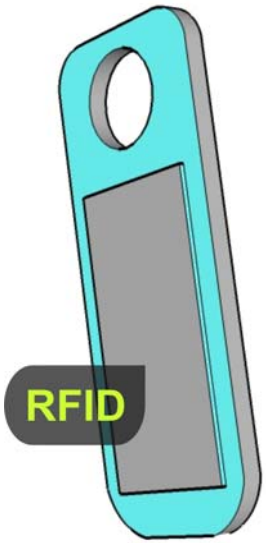
ENABLING TECHNOLOGIES
wifi, usb, bluetooth, audiospeakers, webcams, microphone, voip, wireless projectors, presence detection sensors, phono-absorbent panels, projection surface, audio/video i/o, rfid reader, dvd recorder, lcd screen, power supplies, leds

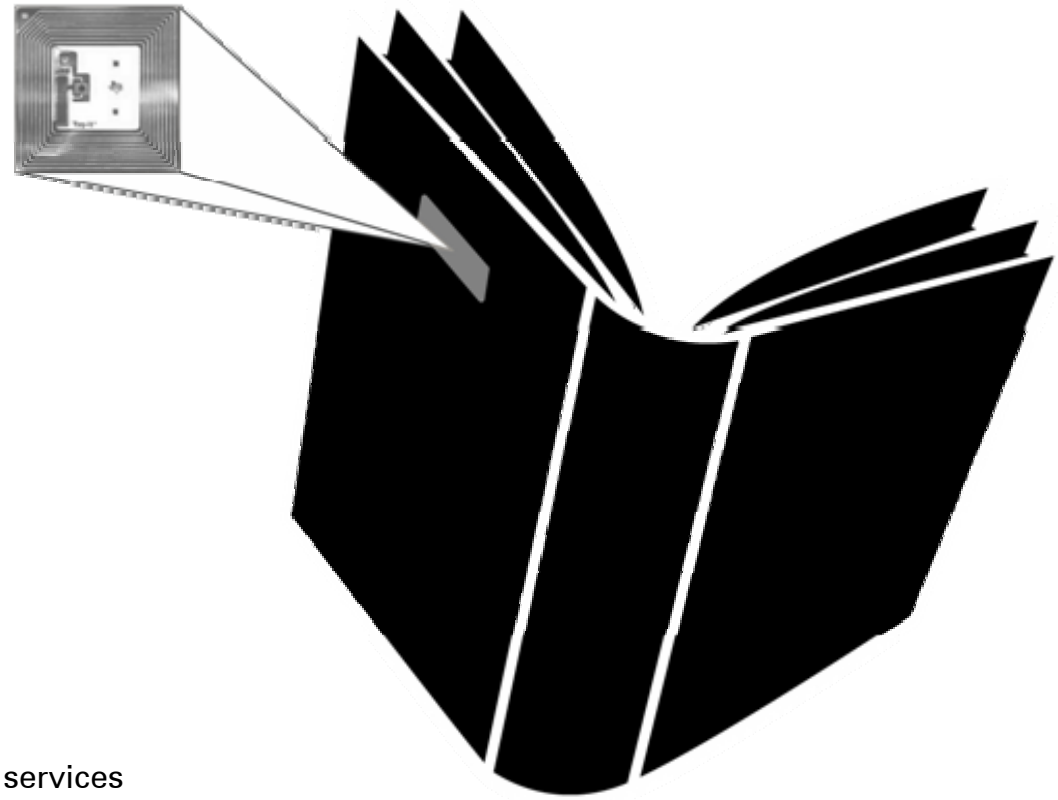


SYSTEM .general overview

functionality
user identification
access to digital resources and services on the device

technology
rfid tag





technology
rfid tag

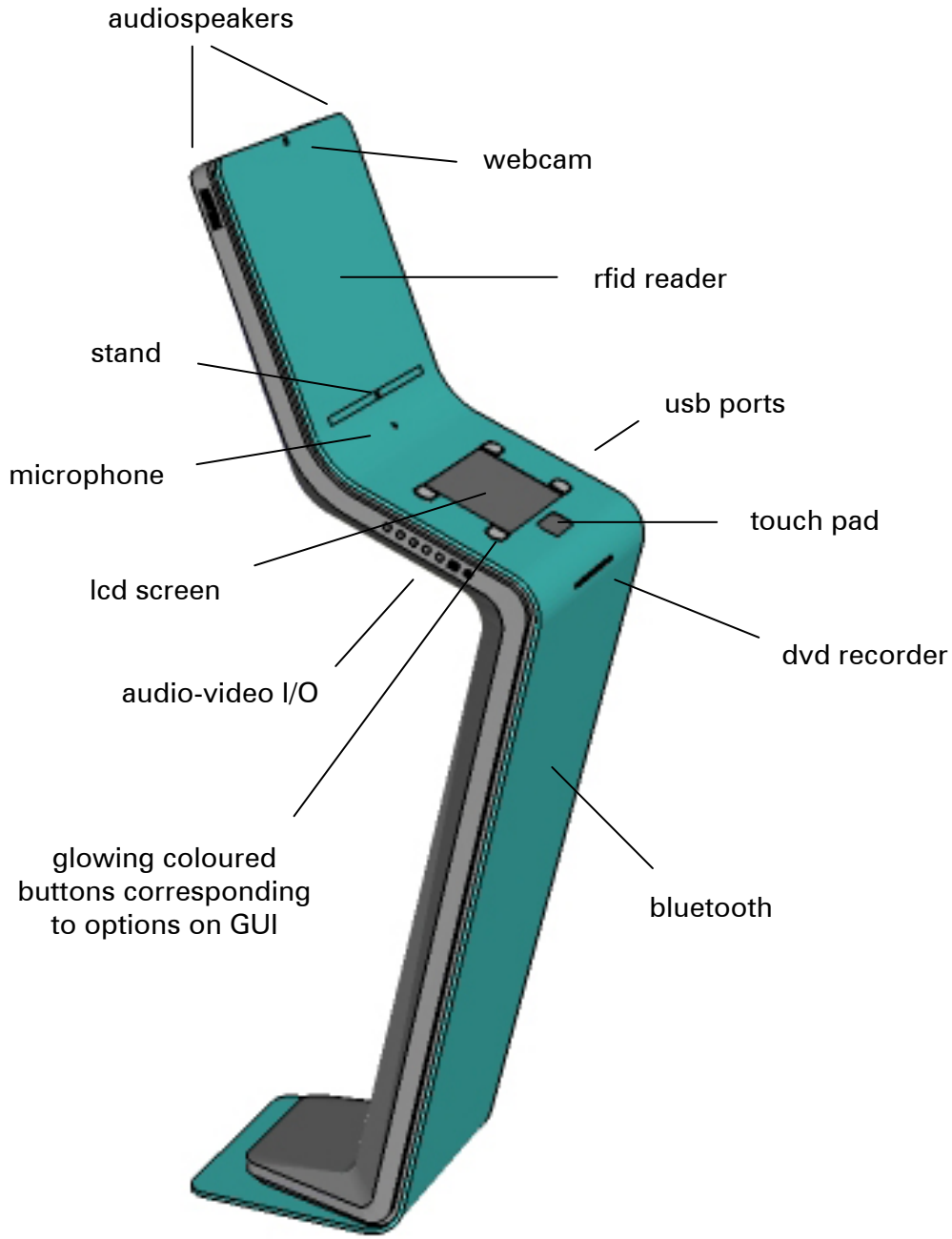
functionality
user identification
access to digital resources and services
retrieval and linking of extra contents to the book

functionality

access point for digital resources and services

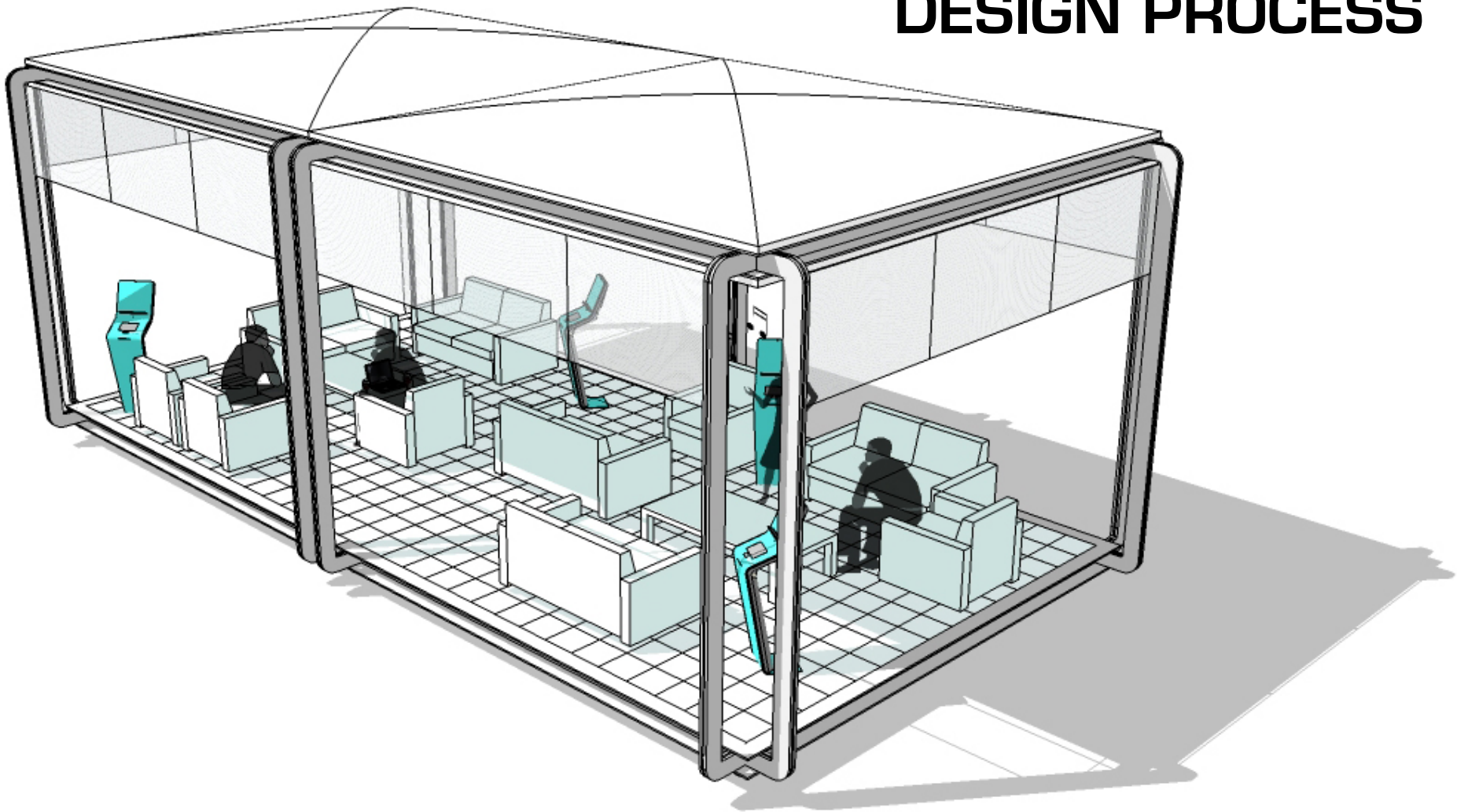
personal contents download/upload and sharing

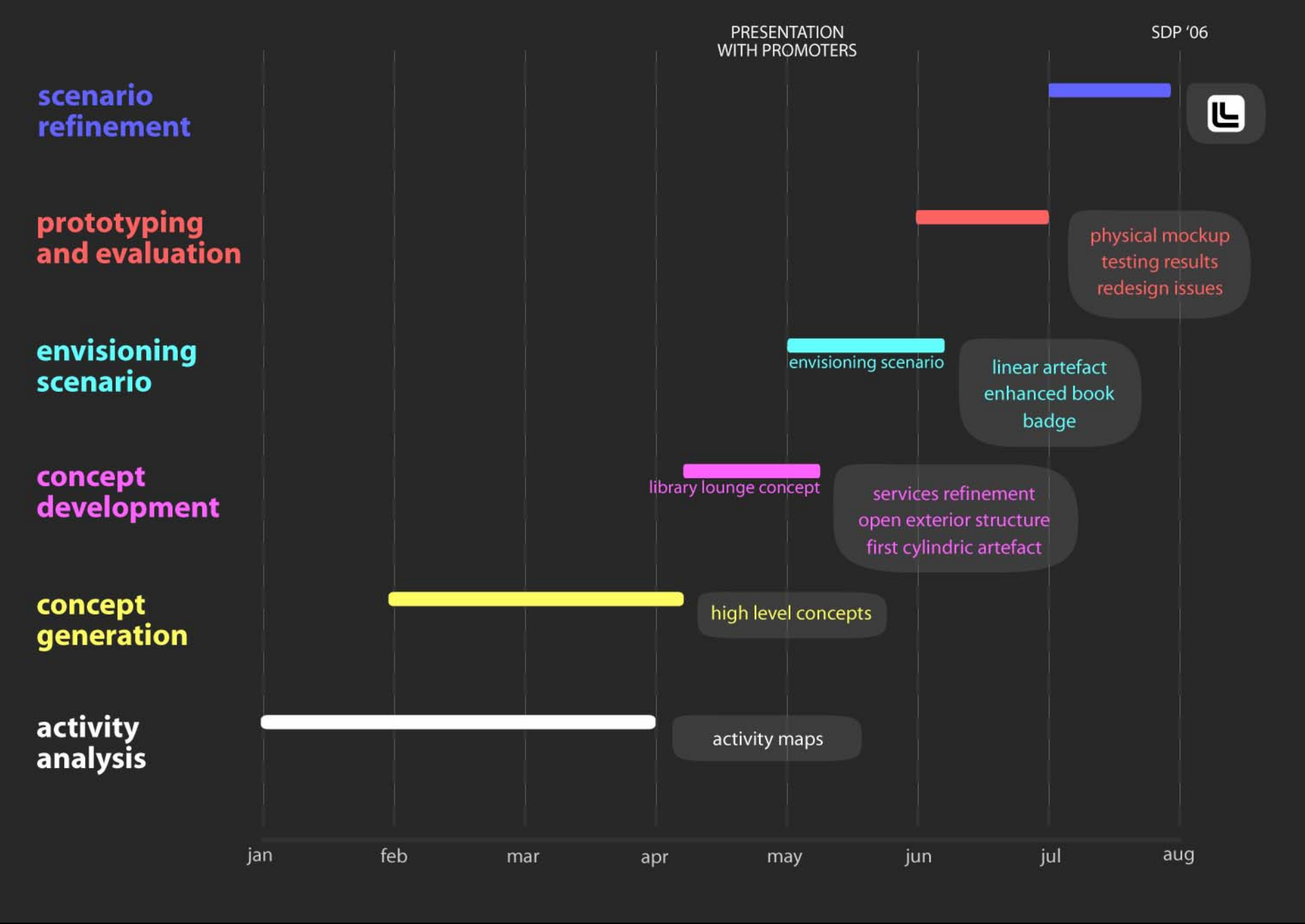
browsing of extra contents of enhanced books



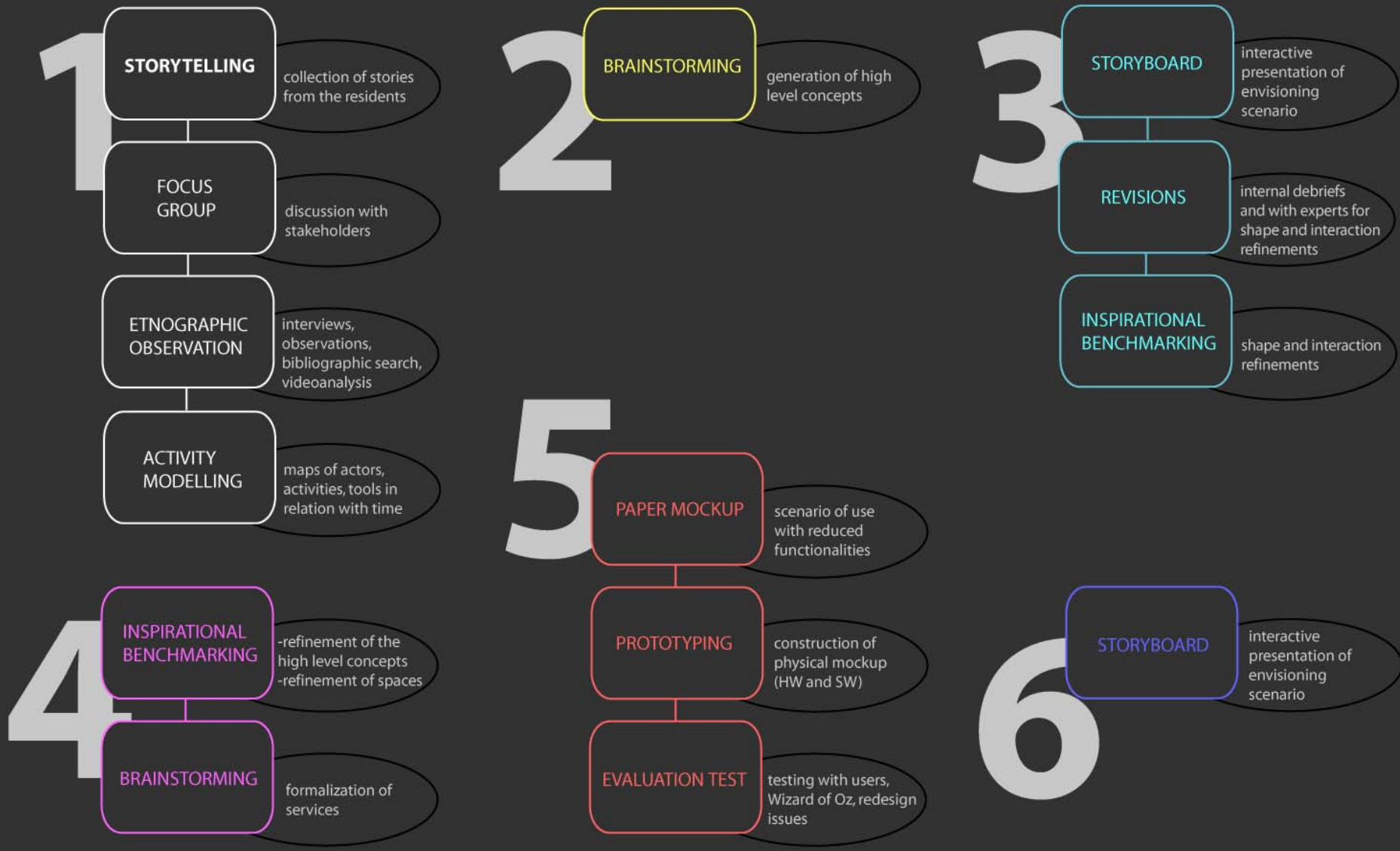
LIBRARY LOUNGE

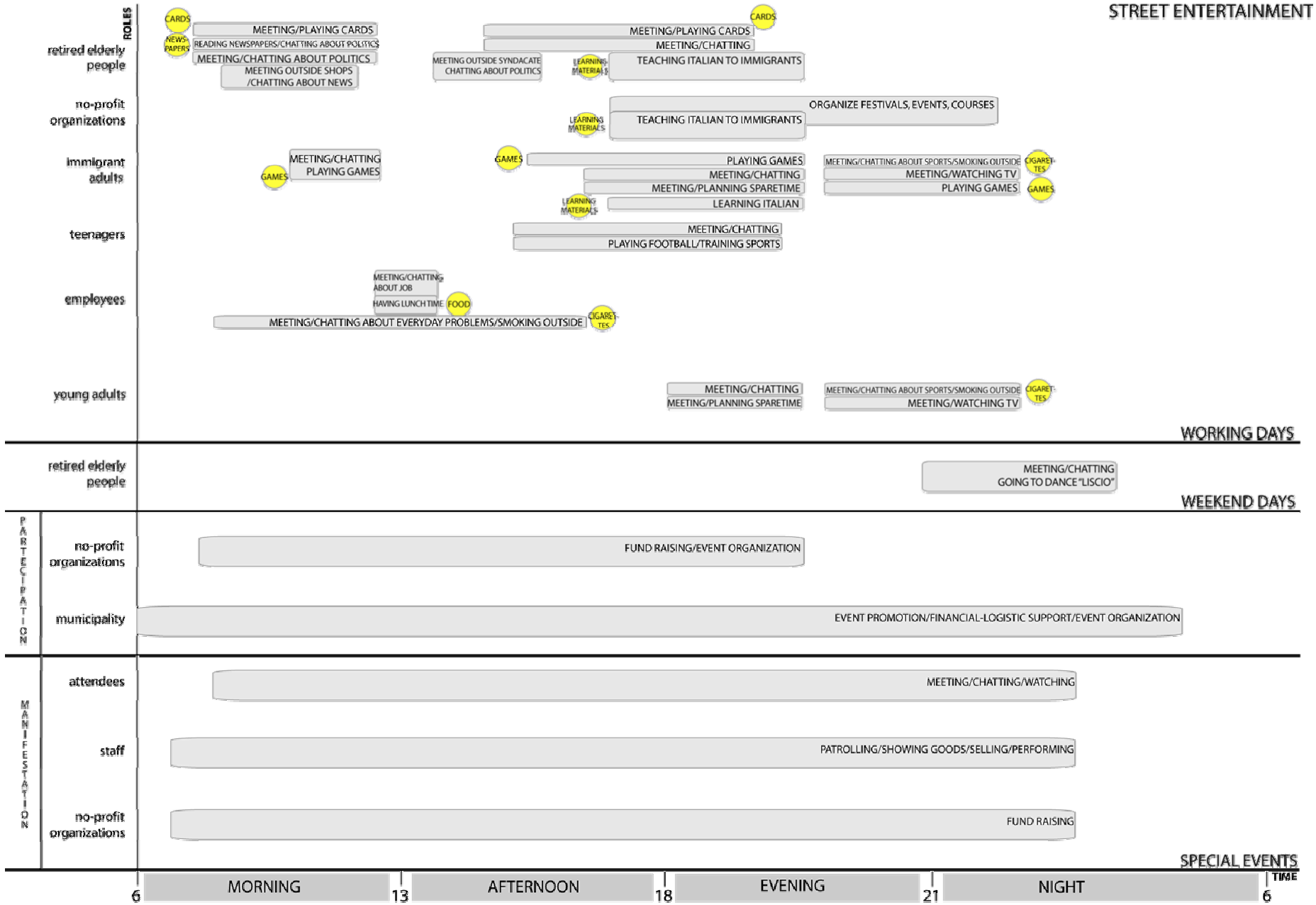
DESIGN PROCESS

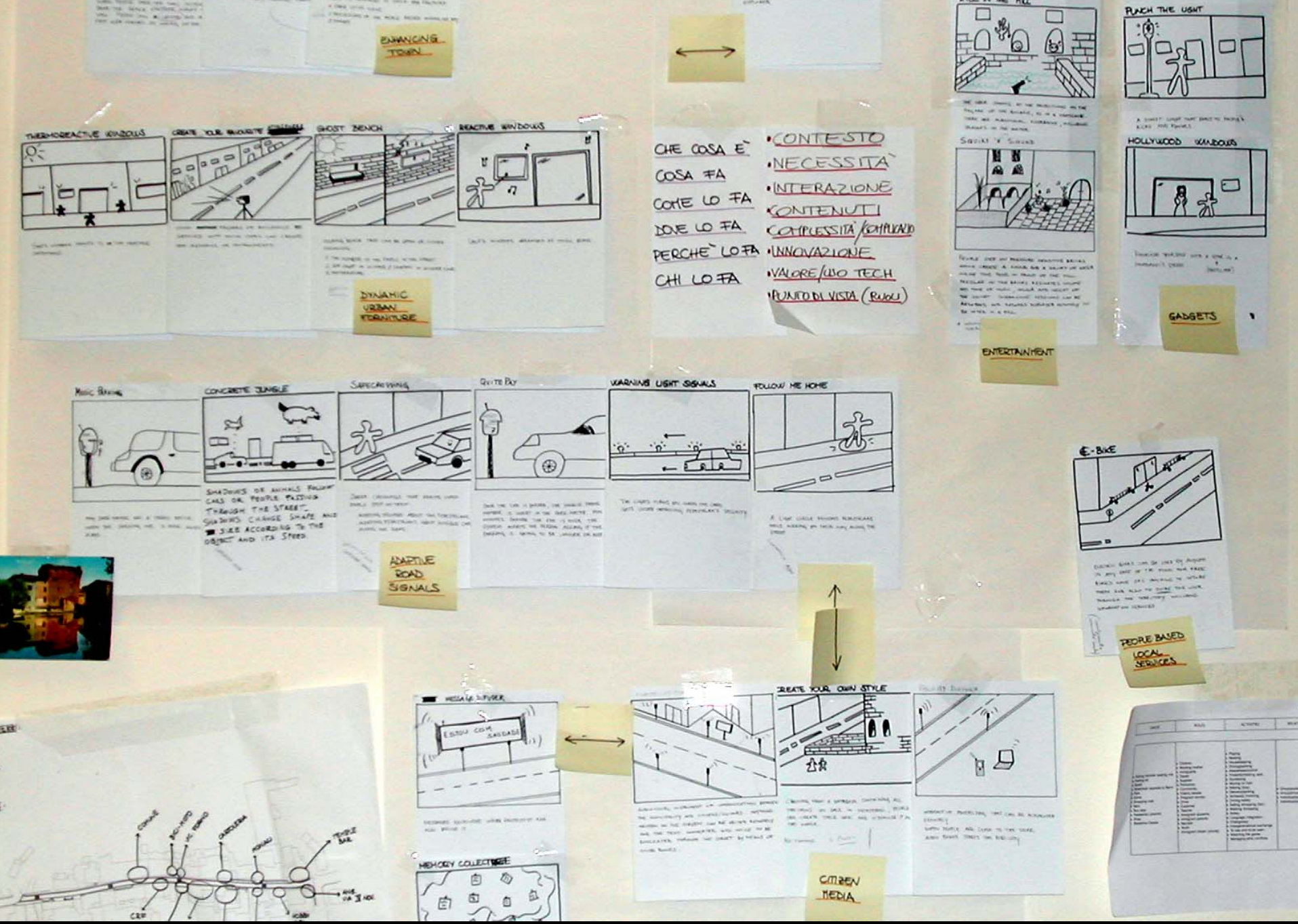



PRESENTATION
WITH PROMOTERS
SDP '06
scenario refinement
prototyping and evaluation
physical mockup
testing results
redesign issues
envisioning scenario
envisioning scenario
linear artefact
enhanced book
badge
concept development
library lounge concept
services refinement
open exterior structure
first cylindric artefact
concept generation
high level concepts
activity analysis
activity maps
jan
feb
mar
apr
may
jun
jul
aug

TIME LINE


1
STORYTELLING
collection of stories from the residents
FOCUS GROUP
discussion with stakeholders
ETNOGRAPHIC OBSERVATION
interviews, observations, bibliographic search, videoanalysis
ACTIVITY MODELLING
maps of actors, activities, tools in relation with time
2
BRAINSTORMING
generation of high level concepts
3
STORYBOARD
interactive presentation of envisioning scenario
REVISIONS
internal debriefs and with experts for shape and interaction refinements
INSPIRATIONAL BENCHMARKING
shape and interaction refinements
4
INSPIRATIONAL BENCHMARKING
-refinement of the high level concepts
-refinement of spaces
BRAINSTORMING
formalization of services
5
PAPER MOCKUP
scenario of use with reduced functionalities
PROTOTYPING
construction of physical mockup (HW and SW)
EVALUATION TEST
testing with users, Wizard of Oz, redesign issues
6
STORYBOARD
interactive presentation of envisioning scenario


STREET ENTERTAINMENT
ROLES
retired elderly people
CARDS
MEETING/PLAYING CARDS
NEWS-PAPERS
READING NEWSPAPERS/CHATTING ABOUT POLITICS
MEETING/CHATTING ABOUT POLITICS
MEETING OUTSIDE SHOPS /CHATTING ABOUT NEWS
CARDS
MEETING/PLAYING CARDS
MEETING/CHATTING
MEETING OUTSIDE SYNDACATE CHATTING ABOUT POLITICS
LEARNING MATERIALS
TEACHING ITALIAN TO IMMIGRANTS
no-profit organizations
ORGANIZE FESTIVALS, EVENTS, COURSES
LEARNING MATERIALS
TEACHING ITALIAN TO IMMIGRANTS
immigrant adults
GAMES
MEETING/CHATTING
PLAYING GAMES
GAMES
PLAYING GAMES
MEETING/CHATTING
MEETING/PLANNING SPARETIME
LEARNING MATERIALS
LEARNING ITALIAN
MEETING/CHATTING ABOUT SPORTS/SMOKING OUTSIDE
CIGARET-TES
MEETING/WATCHING TV
PLAYING GAMES
GAMES
teenagers
MEETING/CHATTING
PLAYING FOOTBALL/TRAINING SPORTS
employees
MEETING/CHATTING ABOUT JOB
HAVING LUNCH TIME
FOOD
MEETING/CHATTING ABOUT EVERYDAY PROBLEMS/SMOKING OUTSIDE
CIGARET-TES
young adults
MEETING/CHATTING
MEETING/PLANNING SPARETIME
MEETING/CHATTING ABOUT SPORTS/SMOKING OUTSIDE
CIGARET-TES
MEETING/WATCHING TV
WORKING DAYS
retired elderly people
MEETING/CHATTING
GOING TO DANCE "LISCIO"
WEEKEND DAYS
PARTECIPATION
no-profit organizations
FUND RAISING/EVENT ORGANIZATION
municipality
EVENT PROMOTION/FINANCIAL-LOGISTIC SUPPORT/EVENT ORGANIZATION
MANIFESTATION
attendees
MEETING/CHATTING/WATCHING
staff
PATROLLING/SHOWING GOODS/SELLING/PERFORMING
no-profit organizations
FUND RAISING
SPECIAL EVENTS
6
MORNING
13
AFTERNOON
18
EVENING
21
NIGHT
6
TIME

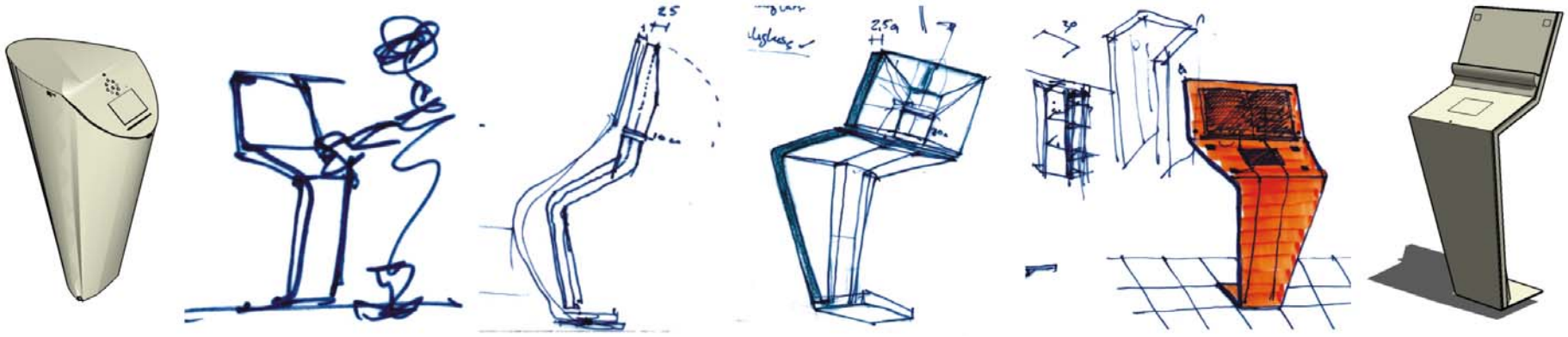

ENHANCING TOWN
THERMOREACTIVE WINDOWS
GHOST BENCH
REACTIVE WINDOWS
DYNAMIC URBAN FURNITURE
CHE COSA E'
COSA FA
COME LO FA
DOVE LO FA
PERCHE' LO FA
CHI LO FA
•CONTESTO
•NECESSITA'
•INTERAZIONE
•CONTENUTI
•COMPLESSITA'/COMPLIANZ
•INNOVAZIONE
•VALORE/LO TECH
•PUNTO DI VISTA (RUOLI)
PUNCH THE LIGHT
HOLLYWOOD WINDOWS
GADGETS
ENTERTAINMENT
CONCRETE JUNGLE
WARNING LIGHT SIGNALS
FOLLOW ME HOME
ADAPTIVE ROAD SIGNALS
E-BIKE
PEOPLE BASED LOCAL SERVICES
CREATE YOUR OWN STYLE
CITIZEN MEDIA

The first **outcomes** were **presented** on Apr, 28th 2006 to the **local municipality**, the **promoter** of the project.

The idea of an **extended library**, and the role of the universitary contents as a **strong attraction** for **students**, was **enthusiastically considered**.

The promoter confirmed the results of the activity analysis about the use of some spaces near the library for cultural purposes.

PRESENTATION WITH MUNICIPALITY



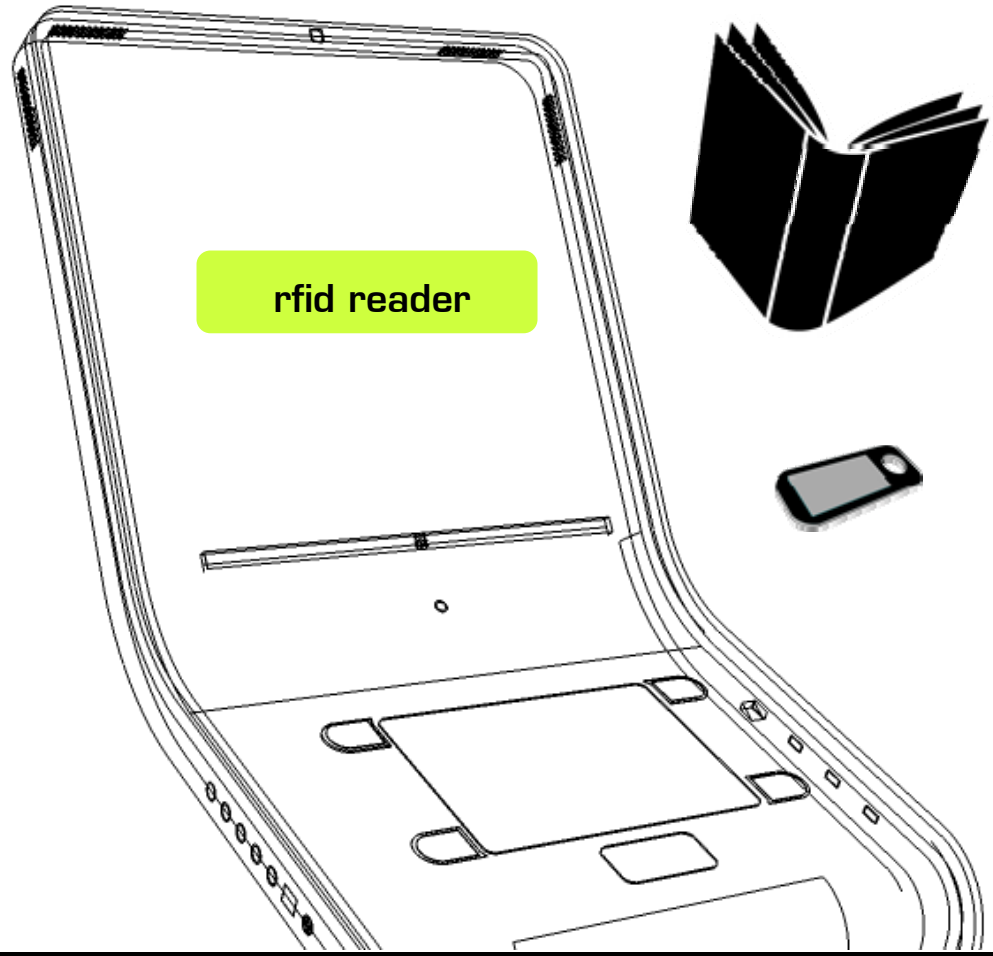
The **device**, which was first designed in two forms according to the functionalities (small for common use; large for projections, audiosurrounding, etc.), finally as a single element.

Aesthetical and functional issues suggested a linear shape rather than a cylindric one.

considering the interactions, the **book** and the **badge** assumed a key role in the **identification** and contents fruition.

the idea was to keep a trace in any borrowed book of personal data of the user, in order to permit identification at the device.

moreover the book and the badge became the input (by means of rfid tagging) to access the database of contents related to it.



The **prototyping** proceeded with the realization of the **structure** of the device, the four **buttons**, the **screen** and the **identification system**. A multimedia animation software was used to create a simple interface.

technologies used
.an old laptop
.the integrated
.circuit of a keyboard
.a rfid reader
.wiring board

materials used
.polystyrene
.cardboard

This **first** physical **mockup** was **tested** in the **park** of **Monteroni** d'Arbia. the **tests** were **conducted** through the **wizard of oz** method.

The problems encountered by users were classified and the following redesign issues were indicated to improve the mockup.

A **second** evaluation **test** was conducted .

The redesign issues were mainly oriented to a radical rethinking of the buttons and an improvement of their affordance by means of light and colours.

Some **further developments** might be taken into consideration for a future refinement or for a **deepening** of the **design process** oriented to a real implementation of the concept:

the **creation** of **audio** and **visual contents** (e.g. Personal audiobooks, videoediting, etc.) directly from the artefact.

the possibility of **tagging personal contents** through **web-based applications** (e.g flickr, youtube, etc.)

the **migration of resources** and **service** from the artefact to the **free arrangeable areas** of the lounge (sofas and tables).