Building Guidelines for UNESCO World Heritage Sites' Apps

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UNESCO World Heritage Sites (WHS)

United Nations Educational, Scientific and Cultural Organization

- World
- Heritage
- Convention

WHS World Map

Category of site
◇ Cultural site ● Natural site ◕ Mixed site

Site inscribed on the List of World Heritage in Danger
◆ Cultural site ● Natural site ● Mixed site

The WHS convention was created in 1972

Top 5:
- Italy
- China
- Spain
- France
- **Germany**
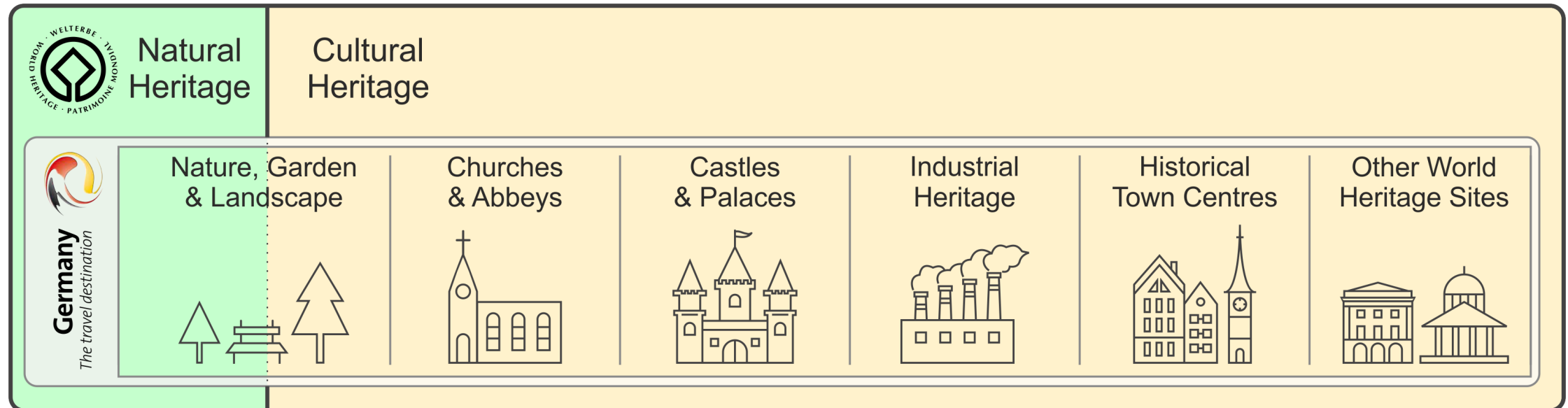
Germany
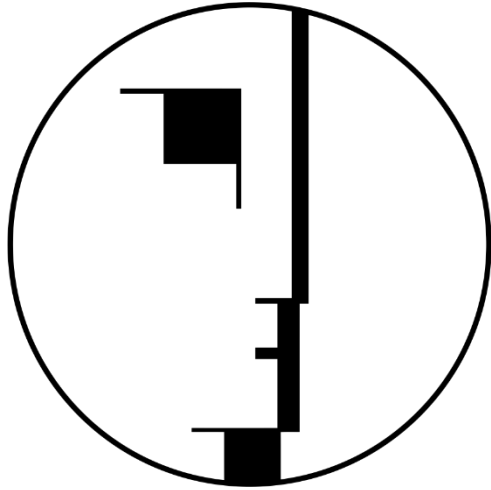*The travel destination*
www.germany.travel

On behalf of the German federal government, the GNTB has been working internationally to promote Germany as a travel destination.

The German association UNESCO-Welterbestätten Deutschland e.V. wishes to increase awareness of Germany's world heritage sites
http://www.unesco-welterbe.de/en/

The GNTB divided the WHS into more categories than just "natural" and "cultural".

| Natural Heritage	Cultural Heritage				
Nature, Garden & Landscape	Churches & Abbeys	Castles & Palaces	Industrial Heritage	Historical Town Centres	Other World Heritage Sites

- Hauptgebäude der Bauhaus-Universität
  / *Main Building Bauhaus University*

- Ehemalige Kunstgewerbeschule
  / *Former School of Arts and Crafts*

- Haus am Horn

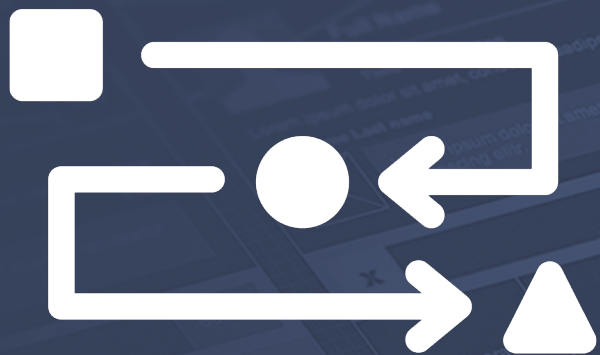Classical Weimar: more 10 locations spread in the city
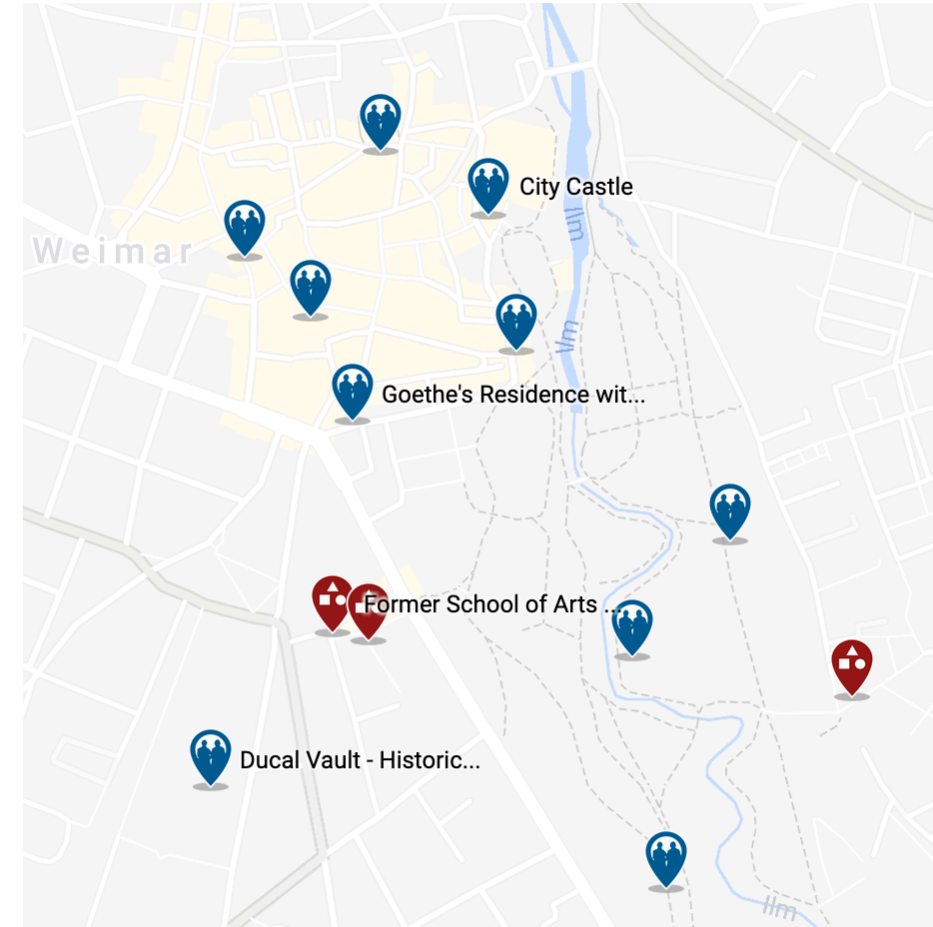
Profile:

- More than one building / monument
- Need to move through the city / directions
- Getting cultural information regarding each monument
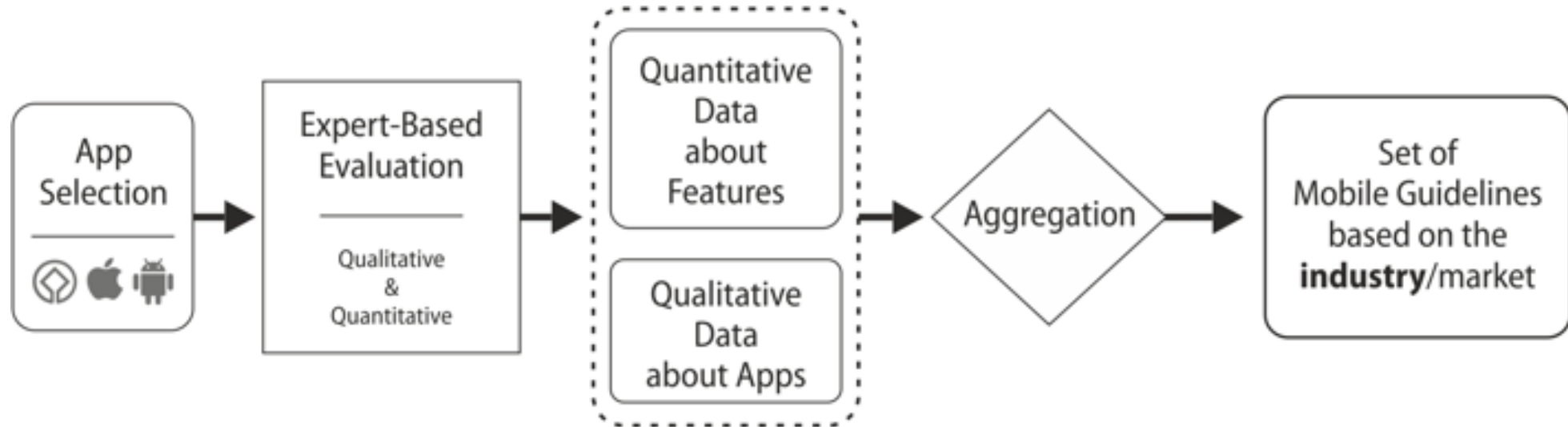- Access to further information / activities

Methodology

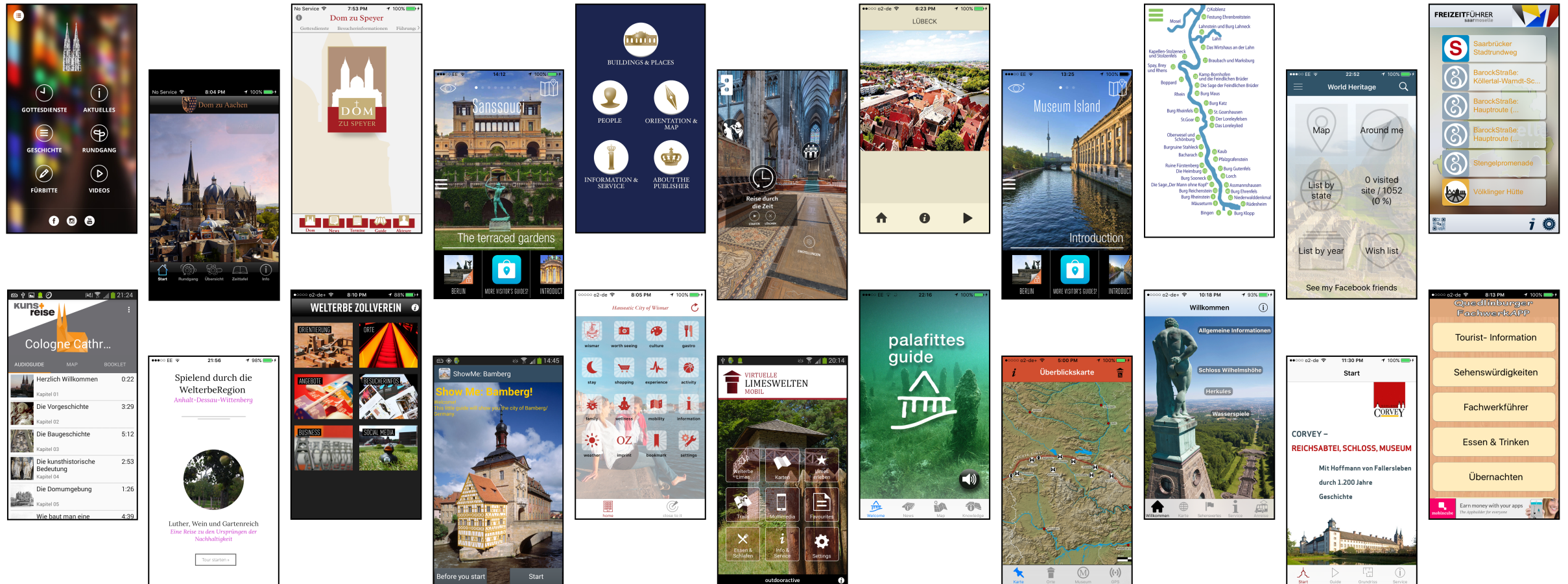Collecting guidelines from the **industry/market**, based on the German scenario.

After the analysis, the set of guidelines based on the industry were applied in a prototype **(Red)**
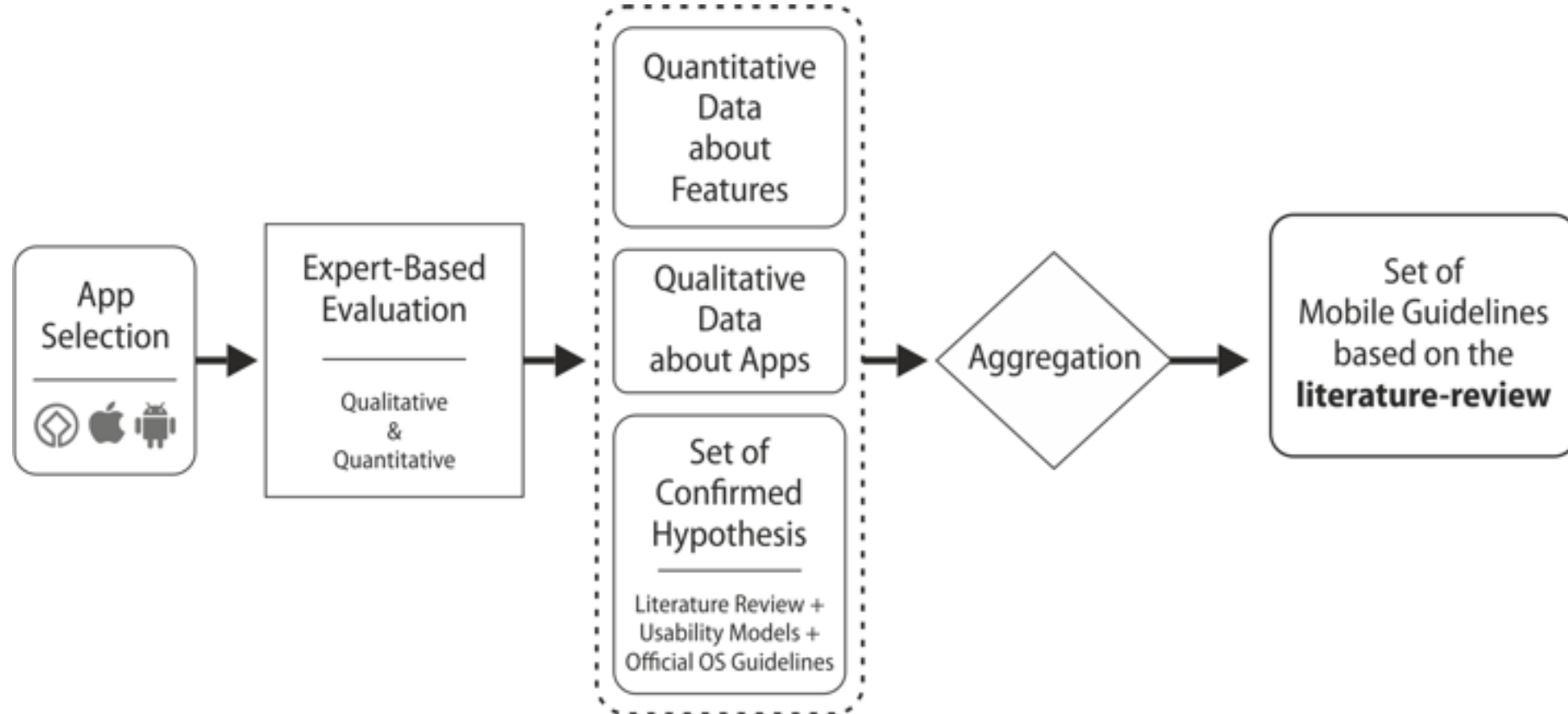
■ 29 Apps (by July 2018)

Collecting guidelines from the academic **literature-review**.

After the analysis, the set of guidelines based on the literature review were applied in another prototype **(Blue)**

Collecting guidelines from the academic **literature-review:**
Generated word-cloud from the keywords from the selected articles.

Search Strings:
- "Mobile usability" AND "Guidelines"
- "Mobile usability" AND "App"
- "Mobile usability" AND "Heritage"
- "Mobile usability" AND "Travel Guide"
- "Mobile usability" AND "City Guide"
- "App guidelines"
- "Mobile interface guidelines"

Covering five years of publication.

The first 50 results in each search string in each platform were sorted by relevance and initially analysed based on their abstract/description to be selected or discarded for content analysis.

Development of two prototypes for testing, using both found guidelines: industry/market (Red) vs. literature-review (Blue)
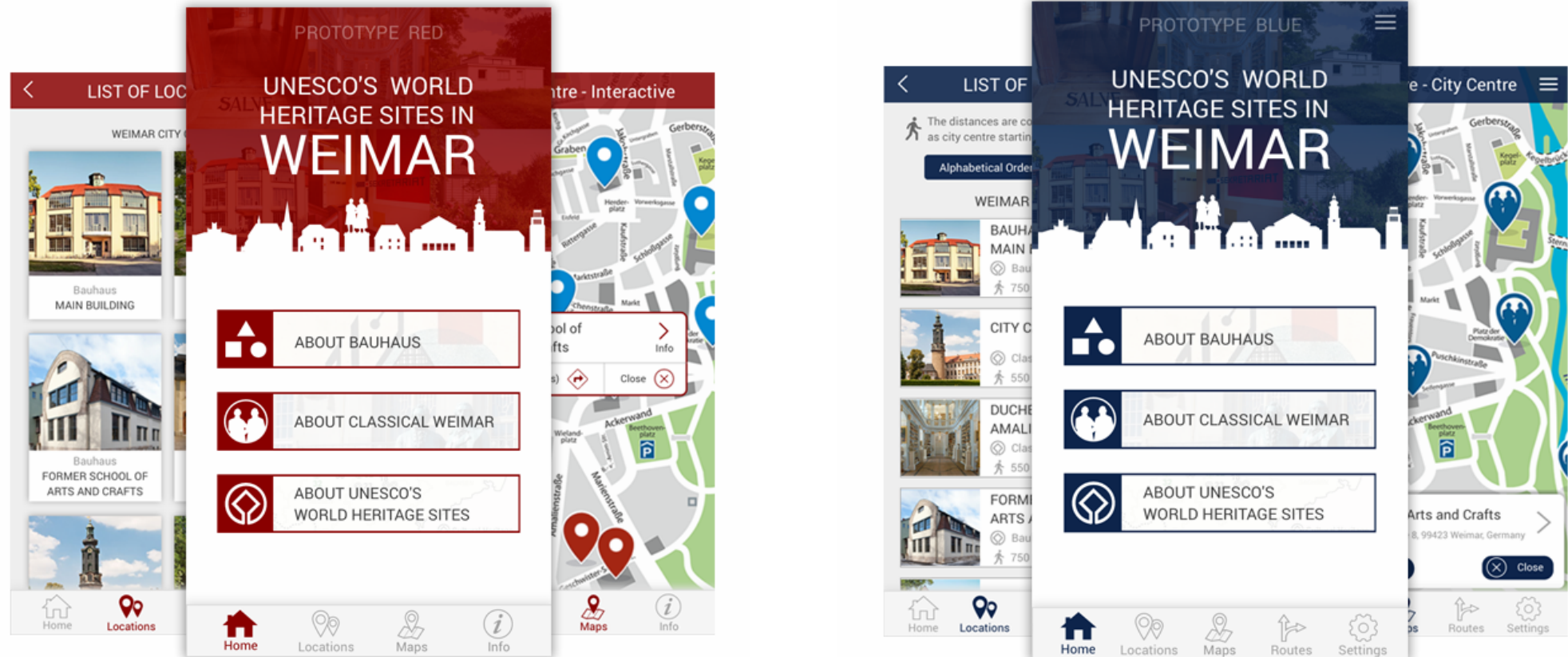
Testing both prototypes: industry/market (Red) vs. literature-review (Blue), to extract new recommendations or reinforcing previous ones.
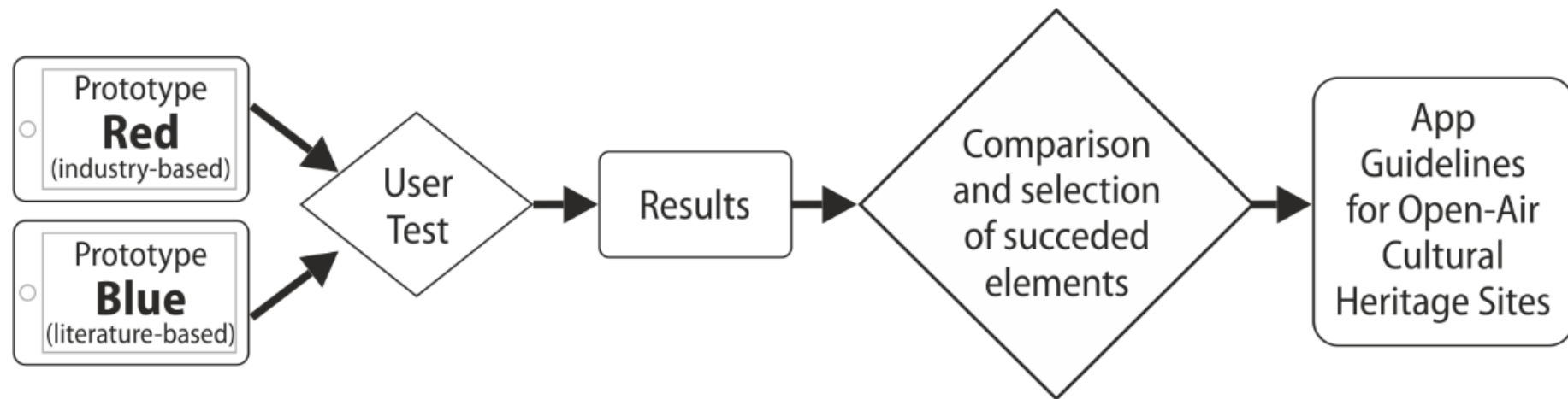
Interface/Features Recommendations

Why it is important to develop a dedicated app?

- Control the narrative (no long texts from Wikipedia)

- Tailored information

- Interface designed for the tourism profile: age, content and languages.

- Offering features, such as: tours, maps, articles, etc.

- Offering services: guided-tours, tickets to museums, etc.

Layout

The layout refers to how the visual structure is placed on the screen, without considerations on the design aspects

In the following slides it is possible to find a set of guidelines on how the Layout can help the user during the navigation.
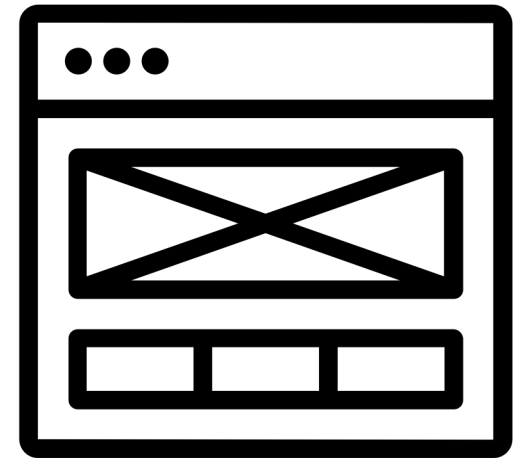
Layout

- **(1) Place Content in One Screen / Minimising-avoiding Scrolling**
  All the needed information is visually placed on the full screen, without the need to scrolling or dragging to access the content. [33] [28] [5] [26] [23] [13] [30] [8] [1] [34]

- **(2) Consistency between different sections**
  The layout maintains the same visual structure when accessing different content sections of the App. [28] [5] [31] [26] [35] [13] [29] [11] [8] [20] [1] [21]
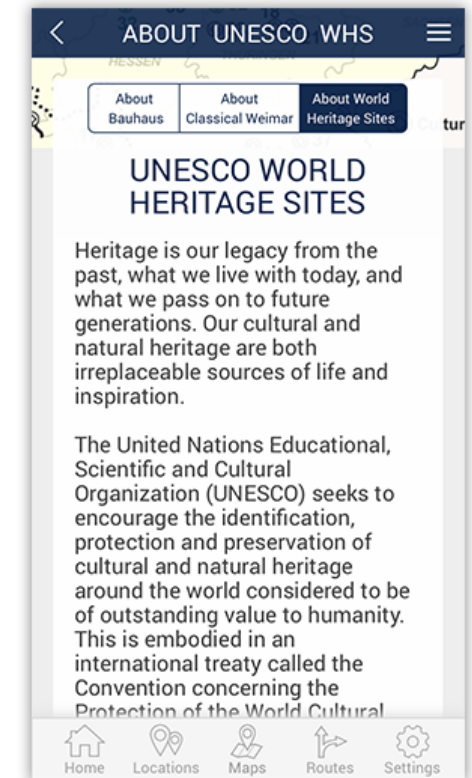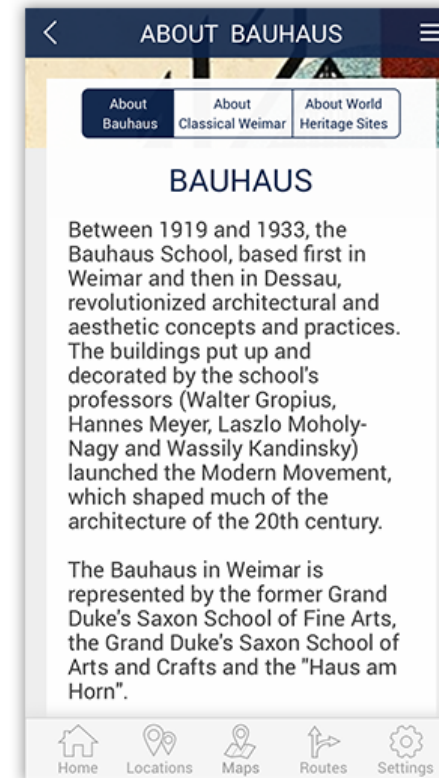
Layout

- **(3) Orientation: provide session title**
  Let the users know where they are inside your structure. [11] [1]

- **(4) Providing search bar**
  Specially if your app has a lot of content, it might help your user to find easier the desired information. [29] [11] [1]

Navigation

The navigation category is not related to how the App and its content are cosmetically presented but focused on the screen transitions and interactions.

It includes the steps the user might take to reach the desired information, and how easy it is to find the desired content, including how the main menu is displayed and elaborated.

Navigation

- **(5) Number of taps to achieve information**
  One of the main advantages of developing a dedicated app is to go direct to the point. It is best if you don't need to do more than 3 taps to get the desired information. [11]

- **(6) Items in the main menu up to 5**
  Do not overdo your main menu. A good suggestion it to put up to 5 items in the main menu. If your app needs more features, try including a "hamburger" menu

  ≡

  with the secondary features and settings.

Navigation

- **(7) Navigation Menu Visible**
  Don't hide the main menu in sections of the app. Being always visible increases the usability. [7] [20] [1] [21]

- **(8) One Level Navigation Menu**
  When planning your content, try to optimize it in a way to avoid tapping/clicking several times to get the content. [33] [35] [30]

Navigation

- **(9) Offering Visible (tabs) Sub-menu Navigation**
This guideline is a direct result of the evaluation, and it was included in the test as a new aspect, as it was not present in the industry guidelines nor the academic literature-based review. It helps to enhance further navigation inside a page, without the need to include more items in the main menu. It consists of the use of "tab-liked" clickable elements that lead to different sub-sections.
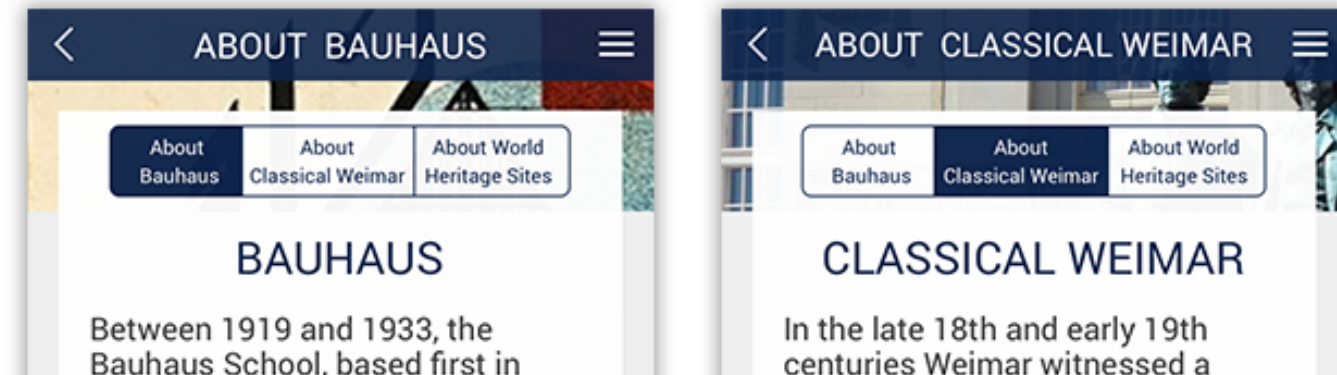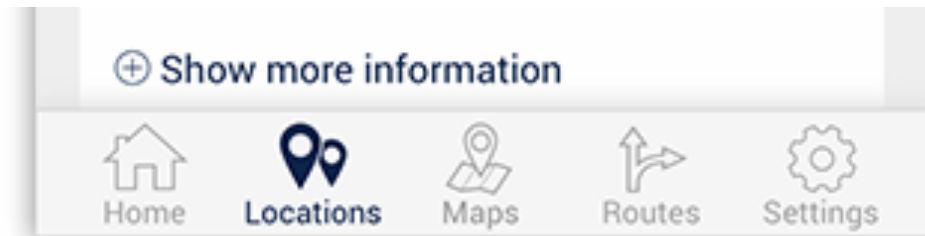
Navigation

- **(10) Self-explanatory menu**
Use words that translates well the sections presented in your main navigation. Don't assume the user has any previous knowledge about your content. [33] [10] [31] [26] [30] [11]

Navigation

- **(11) Presence of *Back* button**
  This can be signed just as an icon, or as a "back" text, or even displaying the previous section name. Despite the Android smartphones have a "back" button on its physical device, this feature addresses just to the presence of a back button on the app interface.
  [1] [34] [21]

Design

The set of guidelines related to design refer to how the layout and navigation are visually treated in the interface.

The design might include the use of colours, imagery as visual support, how the elements are placed and spread on the screen, and other visual aids such as icons and graphic elements.

Design

- **(12) Limited user of colours**
  The app limits itself up to three different colours, including the background. [18] [31] [26] [32] [23] [13] [29] [11] [1] [34]

- **(13) Simple design**
  Simple design is reinforced by low use of colours, white space and limited graphic additions, use of margins and spaces. [33] [5] [26] [32] [35] [13] [29]
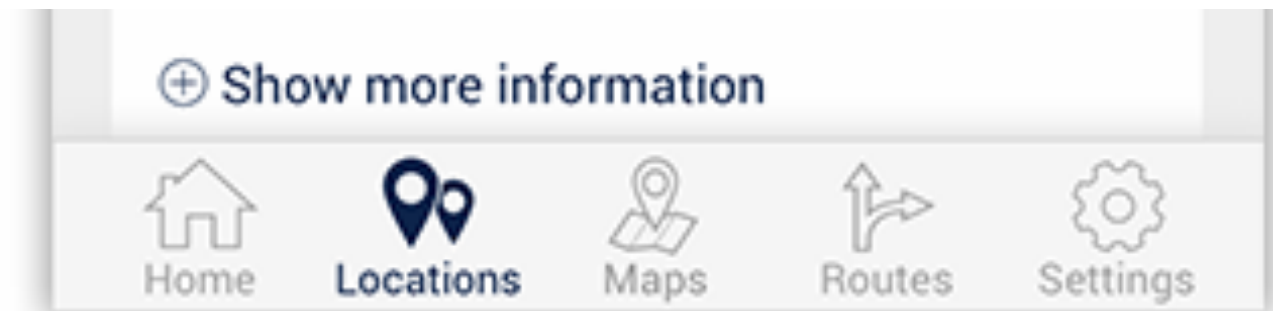
Design

- **(14) Use of icons**
  The presence of icons to reinforce an information, as main navigation or inside content.
  [33] [7] [26] [32] [17] [35] [23] [13] [22] [19] [29] [25] [30] [8] [12] [34] [21]

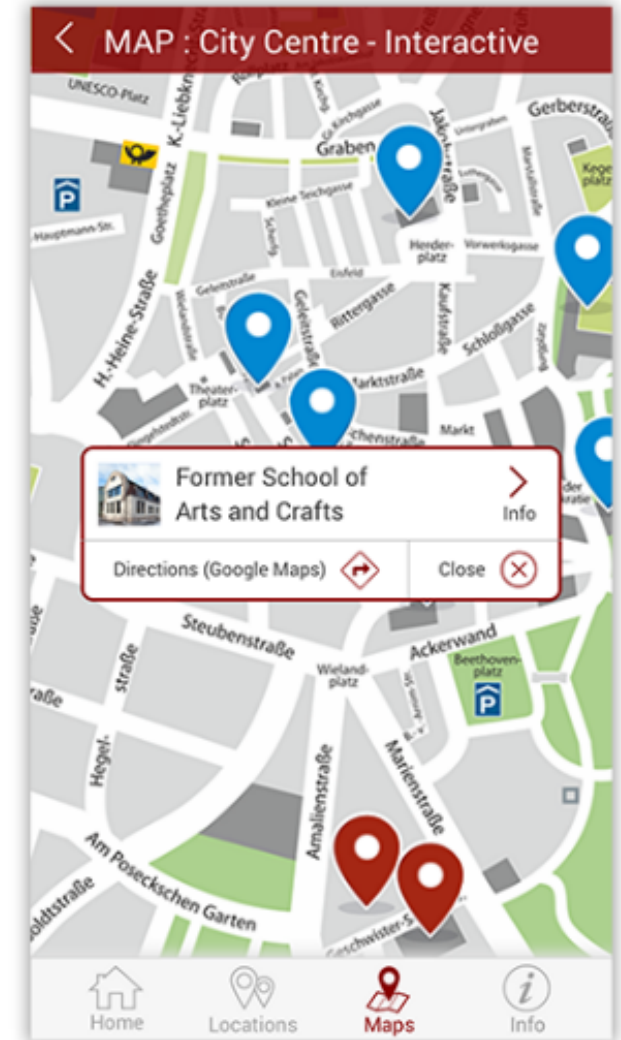- **(15) Space between buttons or other clickable items**
  Consider the size of the fingers and leave a reasonable space between clickable items.
  [7] [24] [5] [18] [31] [23] [19] [30] [8] [1] [34]

Design

- **(16) Use Standard Icons in Maps**
  The users felt more familiar with standard location icons from GoogleMaps, than with the customised ones.
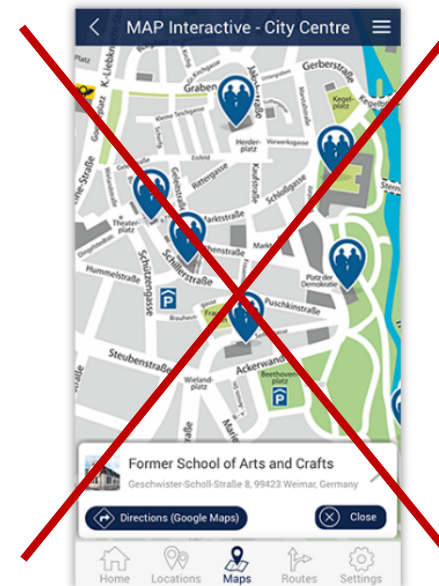
Content

The content guidelines complement the ones discussing in the layout section.

Still, the emphasis is on how the information is offered in terms of length, and the interactions with the content.
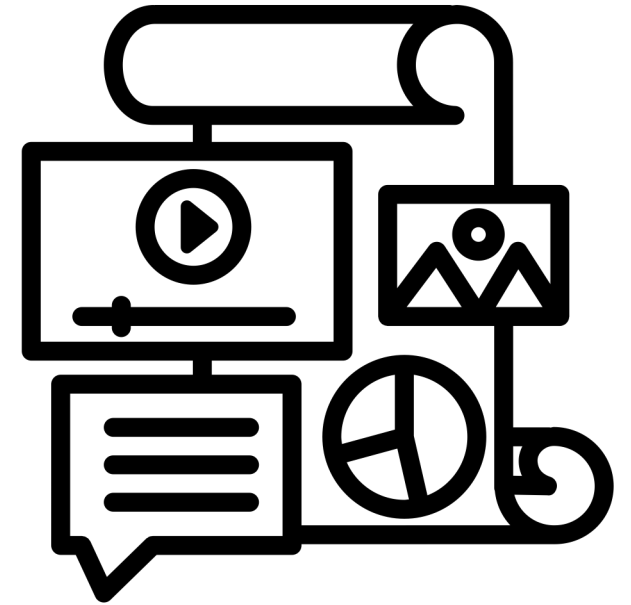
Content

- **(17) Use short text**
Try to use no more than two paragraphs of text referring/explaining the WHS, in order to avoid generating vertical scrolling. Offer to "click/tap" to see more text, if it is the case. [33] [28] [26] [35] [13] [8] [20] [1] [34] [21]
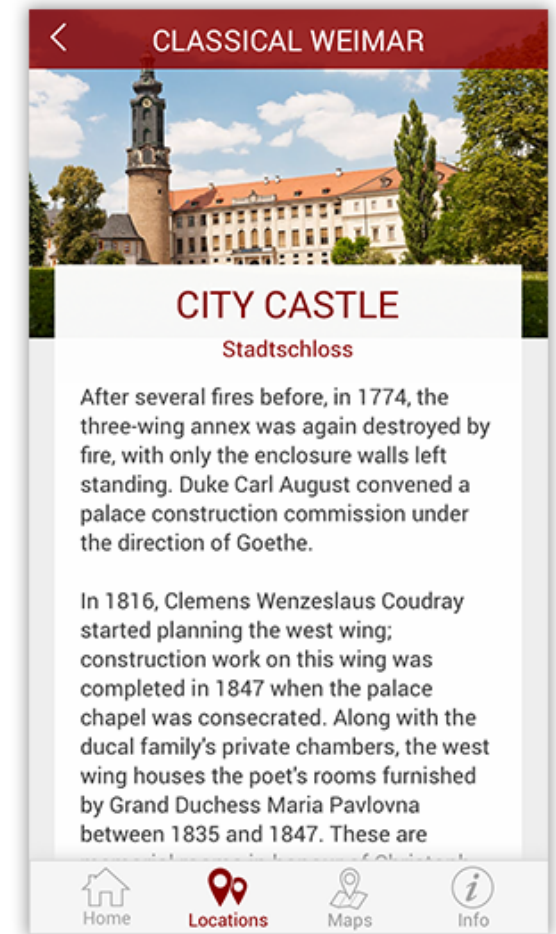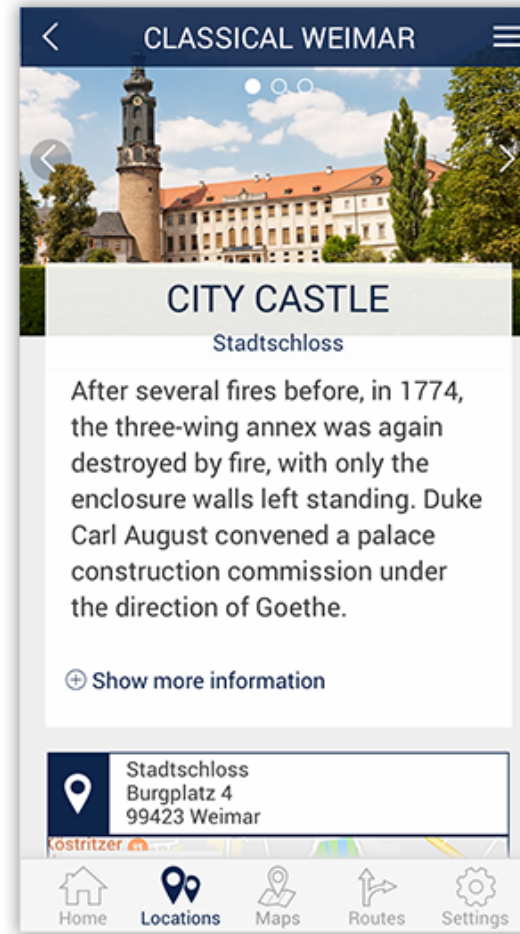
Content

- **(18) Information at start screen**
  When the app is opened, an introductory or explanation text is presented. Info at start screen. [3] [10] [22] [25] [11] [2]
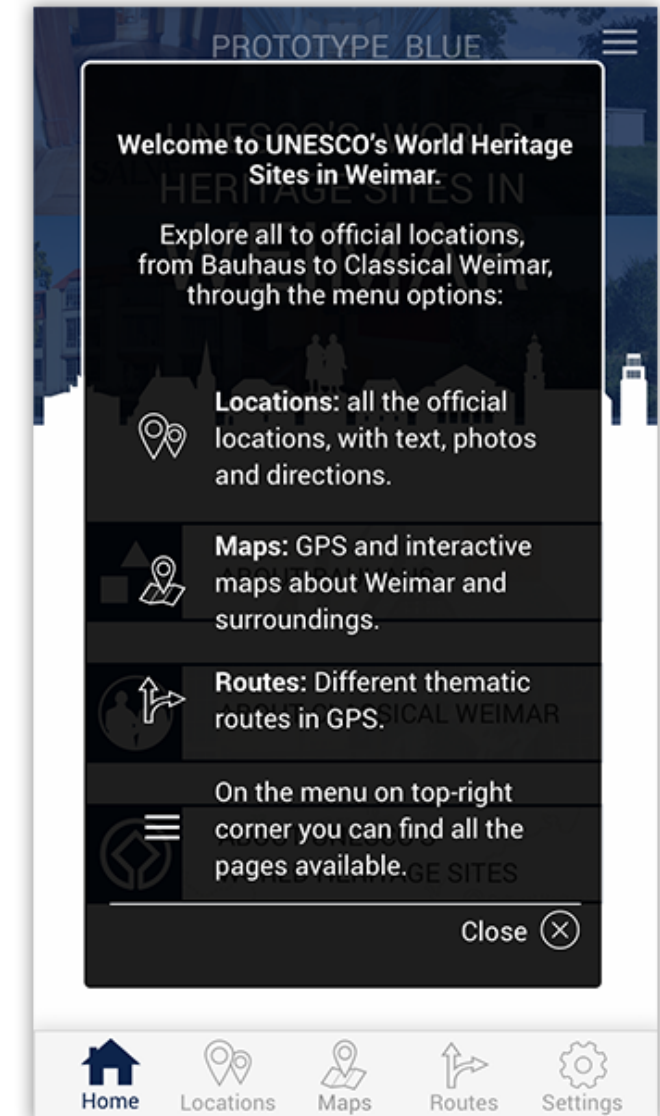
Content

- **(19) Tours / Routes**
When your target is spread in different locations, offering a tour could be a great feature. Try to provide even different tours, varying in length, time and topics. [6] [15]
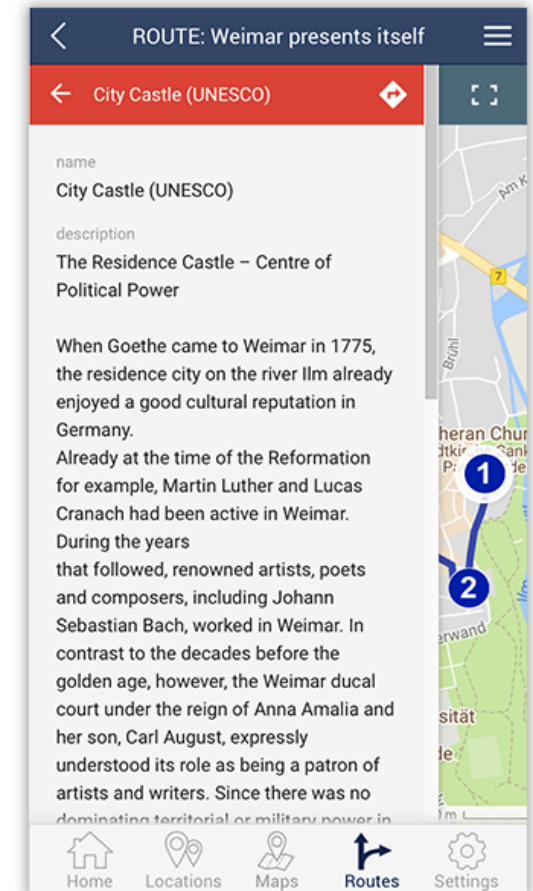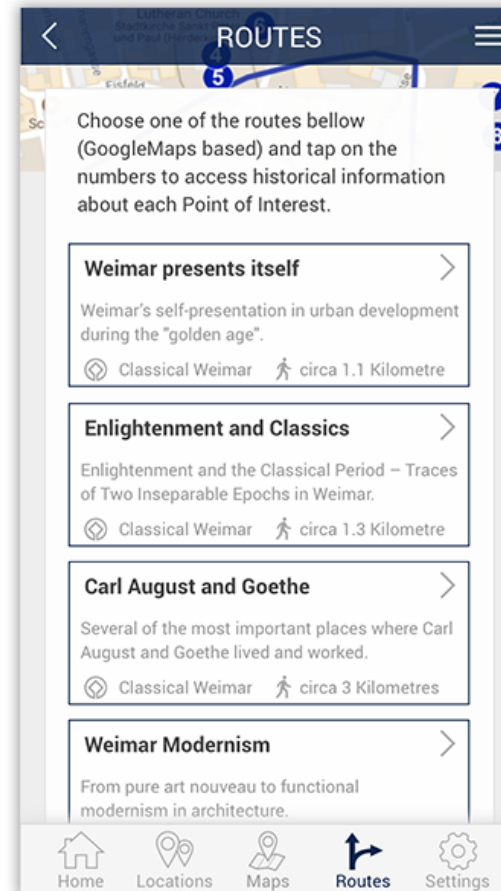
Content

- ## (20) Focus / Only display essential information
  This guideline somehow complements an even overlaps the instructions provided by
  "(1) place content in one screen".
  It also complements the instructions given by "(17) use short text" recommendation.

- ## (21) Use of Aesthetics Graphics
  The use of images/photos reinforce the content and makes sure that you are in the right
  place. The use of images also helps to create a more pleasant information. [18] [26] [32]
  [17] [4] [13] [19] [30] [8] [12] [1] [34] [21]

Content

- **(22) Considering surrounding environment.**
  Before including audios and videos, consider how your users going to use your app, while walking between locations. [3] [22] [25]

- **(23) Large screen font / optimal size.**
  Try to offer the possibility to change your font-size on menus and texts, specially if your audience includes elderly people. [7] [24] [28] [5] [31] [1] [34] [23]

Content

- **(24) Display the Locations in a List format.**
  There are different ways to display a sequence of POIs on a screen. For instance, it may be in a list format, placing one attraction below the other, or in a grid format, normally with quads with more than one location per line.

- **(25) Display More Details on the Locations' Preview**
  When the testers answered regarding their preference for lists of grids formats, to organise a series of information, they were also asked on the additional information offered together with the preview information of each one of the POIs.
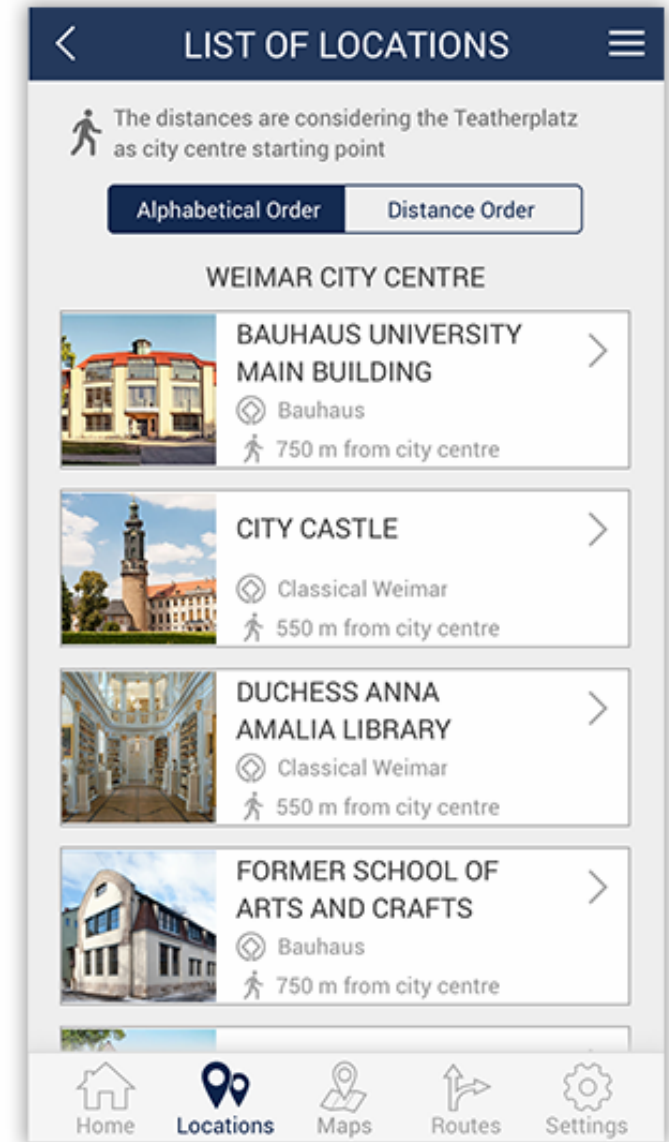
Content

- **(26) Allowing personalization / configuration.**
  Fonts, GPS notifications, Expanded/Contracted content, etc. Whatever your content offer, offering customization may help the user to have a better experience. [35] [4] [29] [20] [34]
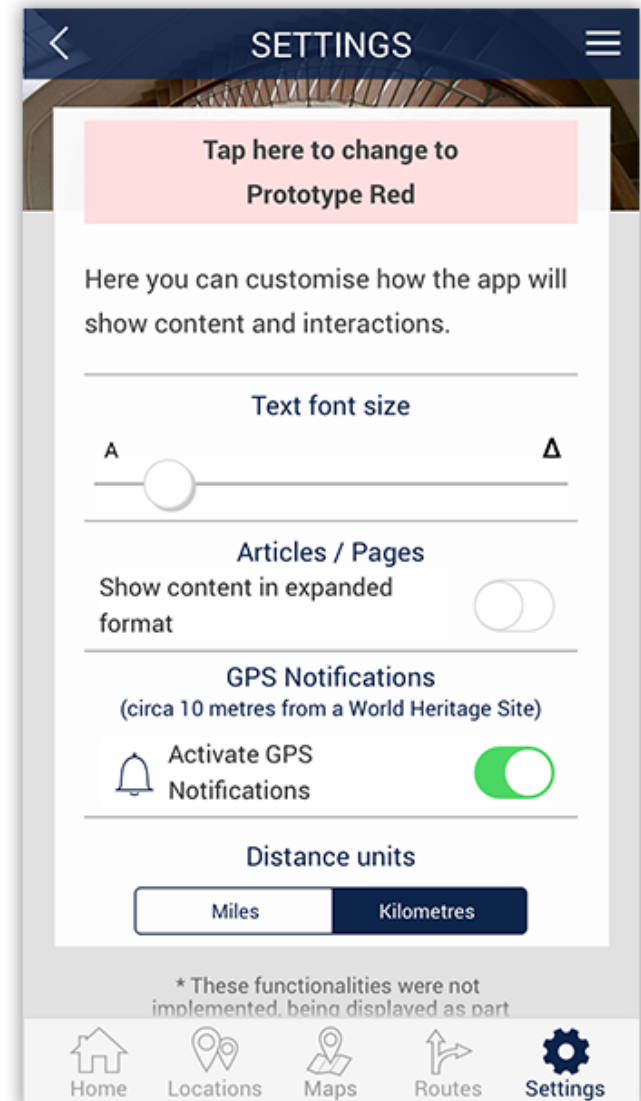
Content

- **(27) Centred Pop-ups**
  This guideline emerged from the empirical test. It recommends the use of floating windows for information to be placed in the centre of the screen. This guideline is strongly connected to the 15th, reinforcing that providing the space around a specific element can improve the experience with the interface.
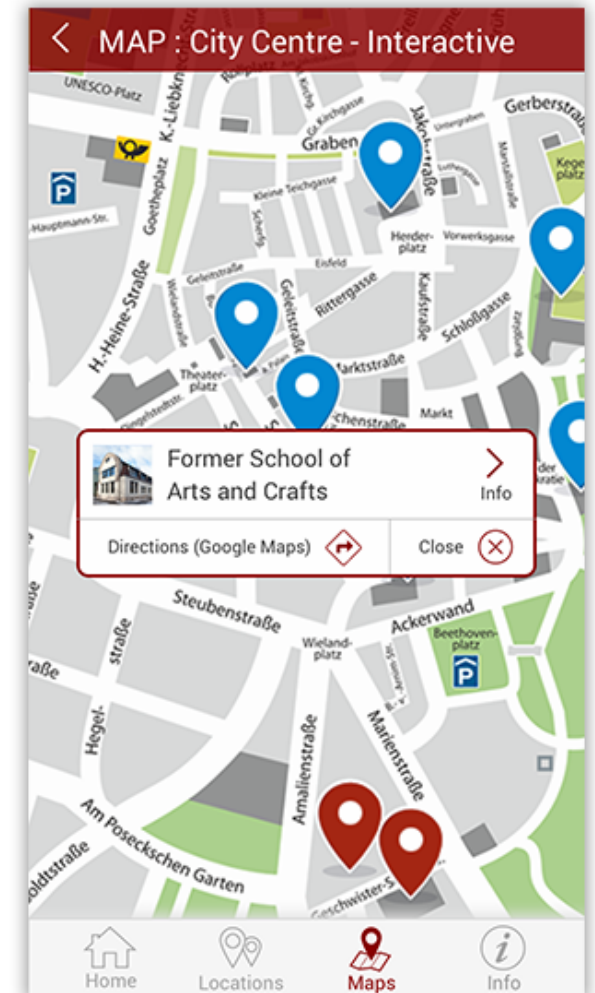
Technicalities

The following five guidelines offer a set of guidance developers should follow regarding the content.

They have not been tested explicitly in the prototypes due to the technological restrictions of the emulations, but they have been largely used and tested by industry and are recommended by scholars.

They are included here to make the final set of guidelines as comprehensive as possible, not neglecting these aspects.
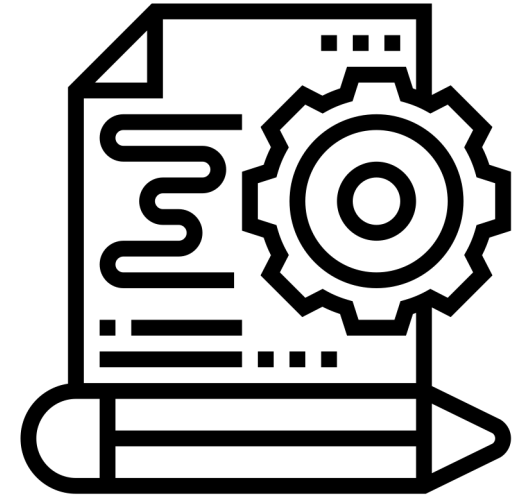
Technicalities

- **(28) Prevent information loss**
When back from a section, the app presents the previous information without any loss, especially on multi-levels content. [33] [35] [29] [11] [2] [20]

- **(29) Provide action feedback**
The app clearly shows on its interface a visual feature regarding an activity, such as section highlight or downloading bar, as example. In some cases, confirmation before deleting/uploading. [33] [7] [35] [29] [25] [12] [1]

Technicalities

- **(30) Clickable Buttons with Tactile Feedback or Sound**
  Clickable buttons with tactile feedback or sound helps the user to understand the actions, specially if you are designing for elderly audience. [7] [31] [30] [34]

- **(31) Provide location-based notification.**
  In some cases, you can active a notification based on GPS location, in case your app is designed to not being used on all the time. [3] [27] [14] [16]

- **(32) Use of visual clues for visited POI.**
  If your app has several locations, it can be a good idea to show visually the already visited locations or sections. [17] [14] [1]

Features and Media

The combination of different media needs to be done in a balanced way, in order to complement the written information.

It must complement the text but not create constraints to the App load or along with content, the features and media shows which mediatic content support is used in the app. The use of media and features in the application has attracted the attention of the App users, thus facilitating the wide use of the application.

Features and Media

- **(33) Photos and Galleries**
  "Pictures are more efficient than words to explain ideas" and it must be explored by developers. This guideline is closely connected to the 21st recommendation, but reinforces the importance of photographs to make it easier for the user to recognise a specific attraction.

- **(34) Map with GPS**
  Among all the tested guidelines, the use of GPS based maps is the only one extracted exclusively from the Apps available on the market (industry-review) that won the preference of the participants. The academic literature did not explore this topic specifically, and in part, it can be justified by the wide adoption of such model of navigation as a default feature.

Heritage Related

The last series of guidelines are focused on cultural heritage aspects.

Combined with navigation, design, content, technical and media aspects, they complete the set of guidelines for the development of effective WHS Apps.

Heritage Related

- **(35) Displaying the WHS Logo**
  As discussed in the initial chapters, for a place to be awarded the status of WHS is not a simple task; it requires a detailed study and the collection of evidence to ensure a successful application.

- **(36) Provide an "About" WHS Page**
  The WHS recognition is indeed an important recognition for an attraction, but not all the visitors are familiar with this importance, and a dedicated App cannot neglect this information.
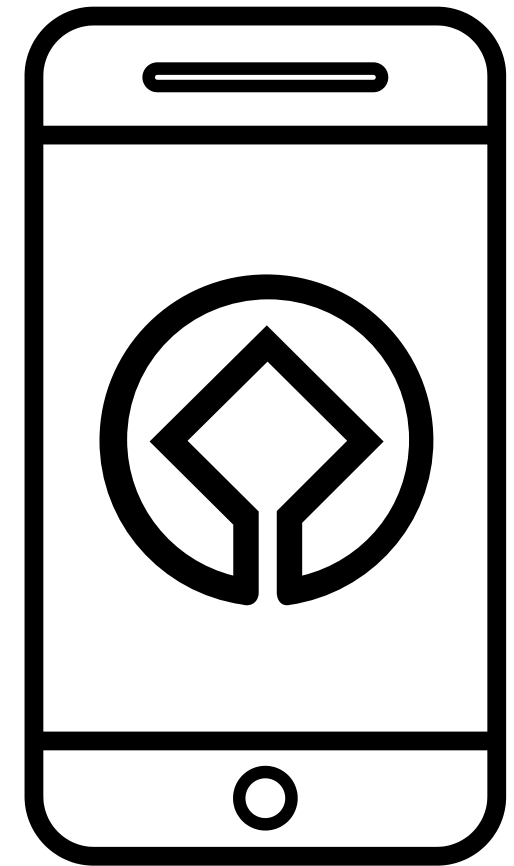
Heritage Related

- **(37) Curated Content**
There is plenty of information regarding touristic attractions around the world. The modern problem is precisely the opposite: the information overload and the difficulties in separating what is correct, accurate, and trustworthy.
For that reason, the last one of the guidelines tackles this issue precisely:
a dedicated App must contain curated information tailored to offer the user the best possible experience when visiting a WHS.

Mobile OS

- **ALWAYS go for both most popular OS**
  At least offer your content equally for Android and iOS devices.

Final Considerations

It can be argued that the found guidelines could be applied not just to dedicated apps to open-air WHS, but also to touristic apps in general.

This assumption can be true, as touristic locations also require wayfinding and points of interest (POI) descriptions, alongside with the navigation, design, layout and content recommendations described in this research.

It is important to say that – as it happens in most of the independent projects – this research had a constrain of time and budget for the prototype development and testing.

However, in the ideal scenario, the work could continue with the implementation of a commercial app based on the final guidelines and another round of tests with different demographics.

Another improvement could be done in regards to inclusion, checking the extension of the elderly-friendly features and extending the user-friendly approach to various disabilities and special needs.

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Thank you!

Gracias!

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