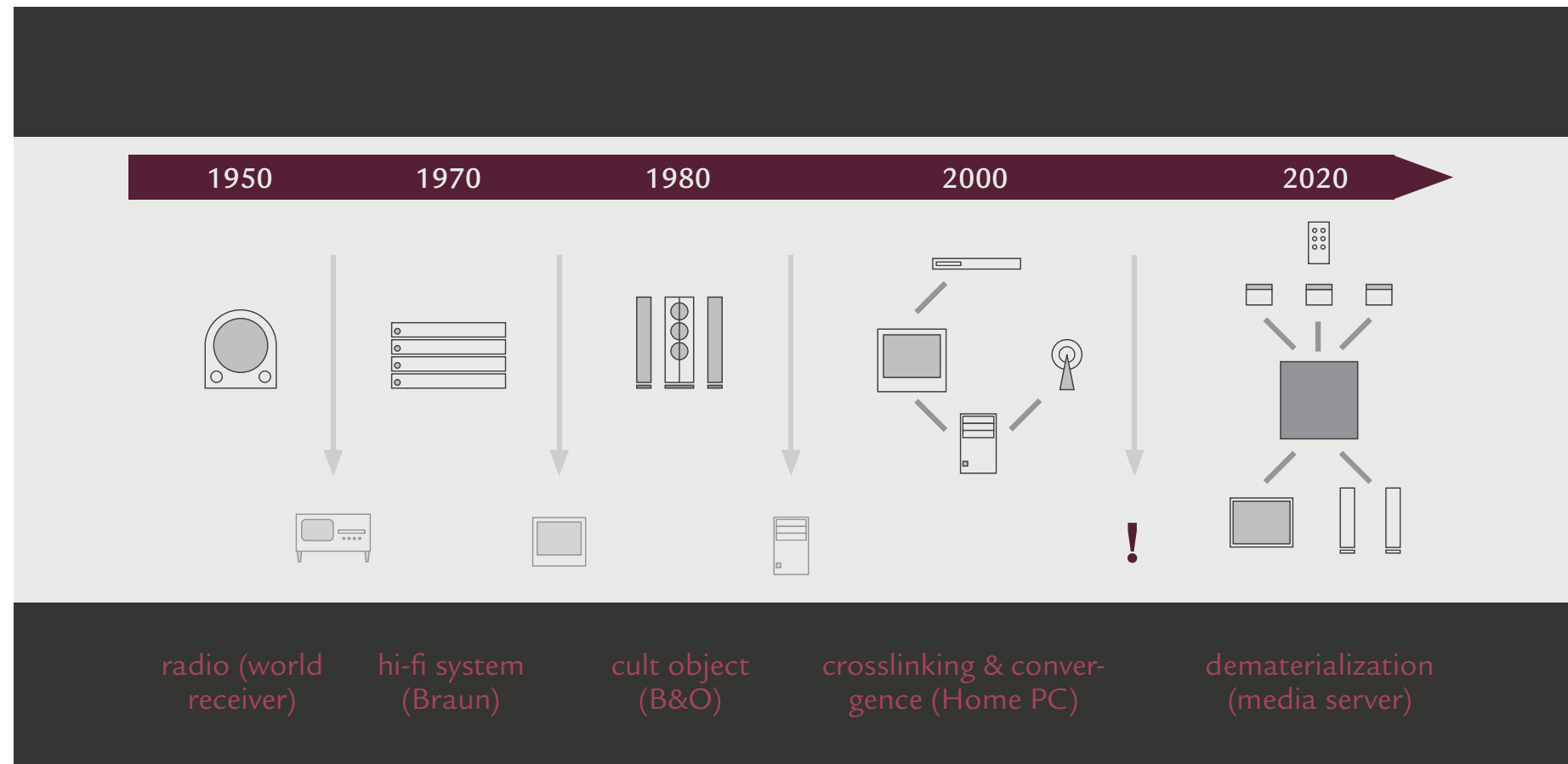# Graduation Project

The Consumption of Music in the Era of iTunes
Abstract of the Design Process

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Music Consumption in the field of Home Entertainment – Analysis

Development from the Beginnings until Now and Forecast

By way of technical advances the way of listening to music has constantly changed. The consumption of music within our own four walls changed most recently with the introduction of Home PCs with broadband Internet connection and the media made available through this.

1950	1970	1980	2000	2020

| radio (world receiver) | hi-fi system (Braun) | cult object (B&O) | crosslinking & convergence (Home PC) | dematerialization (media server) |

To evaluate the individual listening habits, it is important to see them in the context of technical and cultural development. Also, this helps to evaluate subsequent concepts and their level of innovation.

Music Consumption in the field of Home Entertainment – Key findings

In the past, single songs were statically bound in their combination and order to albums and their supporting media. As well that their distribution was limited by their physical limitations.

The biggest innovation through the development of the MP3 format in the mid-nineties was the flexibility it offered users. Virtual and not depend on specific supporting media, dynamic compilations were now possible. Thanks to the small size of songs, they can be published simply and quickly through use of the Internet.

Playback devices are now experiencing more and more of a reduction in their use. Software based interface solutions are now becoming more influential.

Software based Interfaces – Analysis

Within a non-representative statistic an average music collection contains about 3.600 titles. One-fourth of the available titles are in active use – two-thirds of the stored songs have never been listened to.

Personal music collections are often so huge that the desired music selection cannot be made without investing a considerable amount of time and effort. For this reason, users simply revert back to what they know and select tracks they like, but are inevitably the ones they listen to on a regular basis, leaving the majority of their music archive unused.

3.600 titles of an average music collection – only 25% are in active use
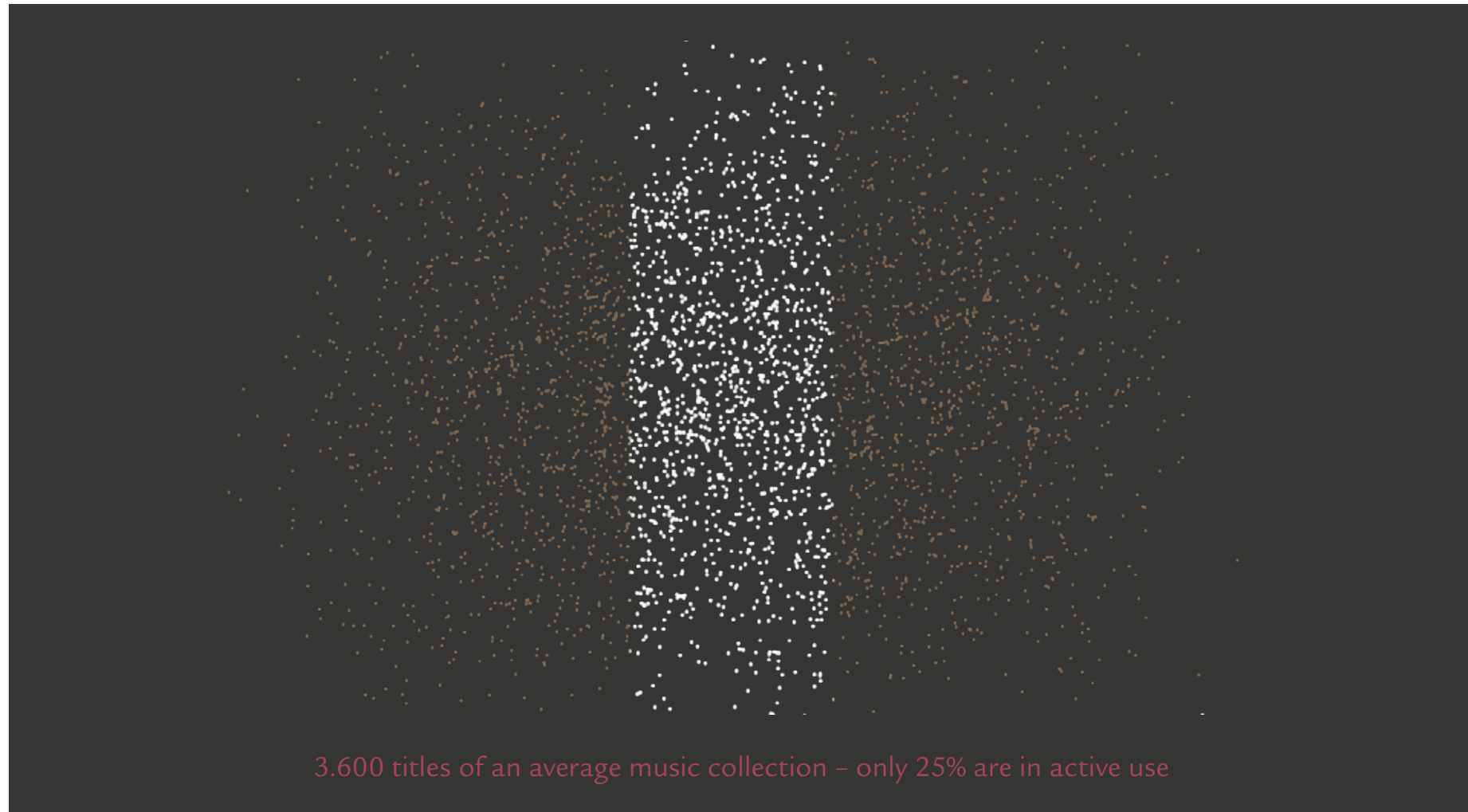
This suggests, that common list based software is not an applicable instrument for organizing personal music collections, whose one dimensional tables and integrated search functions are insufficient.

Information Design

"To clarify, add detail"
Edward Tufte

If we talk about music, we use terms to describe, categorize and compare, which can be represented accordingly by metadata.

Metadata for pieces of music can be sub-divided roughly into 3 categories: native, passive and active.

native metadata
(production data)

passive metadata
(listening habits)

active metadata
(associative)

With the help of metadata, interesting scenarios can be developed. – You could record when, how often, in which order and how loud you have listened to music. By GPS it is possible to define the place, where you were listening music. – Information about the place and time could be matched with a weather database and by that you can ascertain which songs are typical for a rainy autumn evening or a Monday morning.

Furthermore it is possible to determine the musical similarity of songs and to use this information for an application.

Information Visualization

By a visual translation of complex information it is possible to comfortably get an insight into the structure of data and to quickly grasp the context and draw conclusions from the data provided. Furthermore, by a compact, abstract representation of data the pixel per data value increases, that means more information can be displayed on a display simultaneously. According to the possibilities the user is able to interact with the data right in the visualization as well.
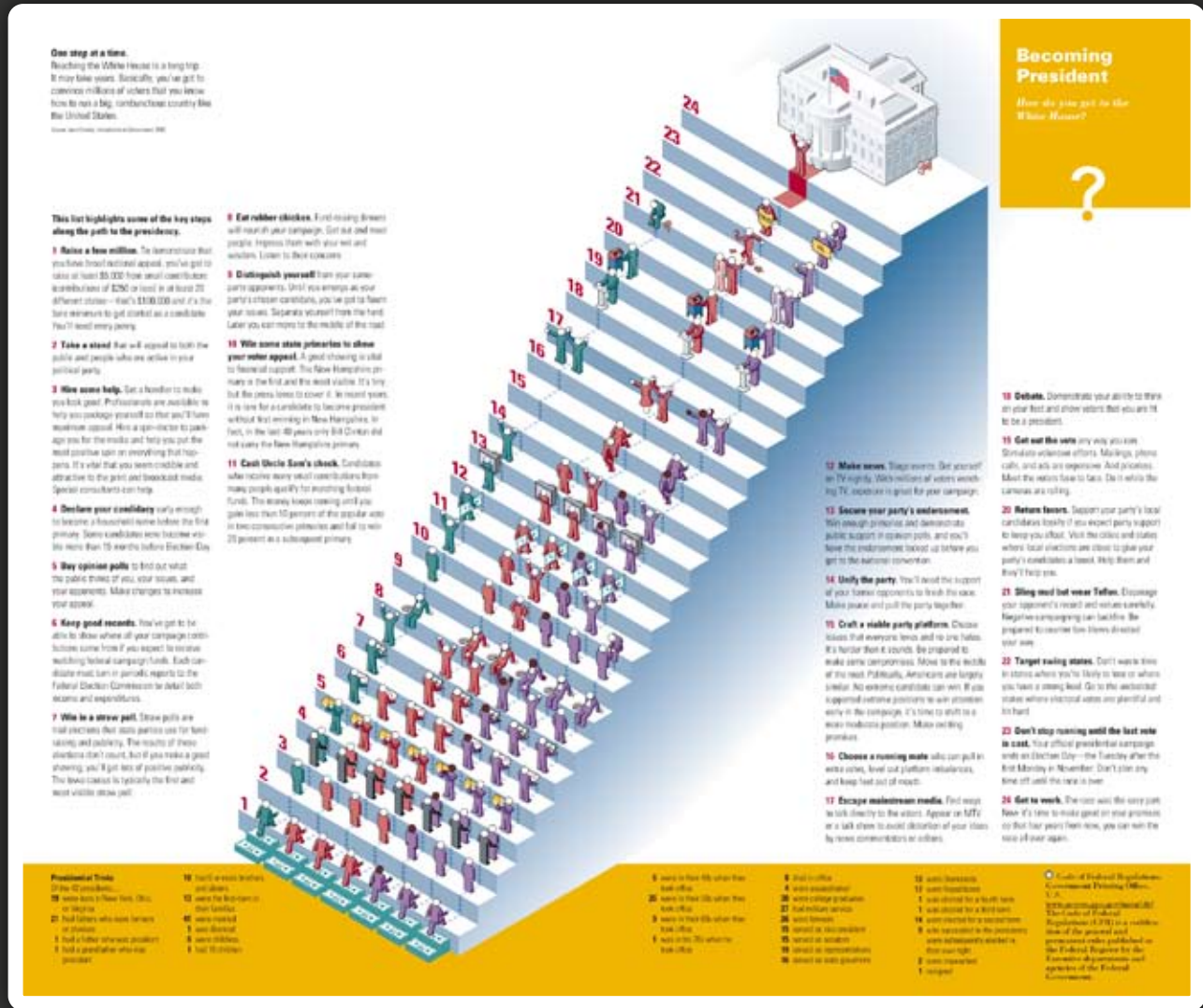

"Becoming President" from the book Understanding USA

Graphical User Interface – Encoding of the songs

It was the aim in the implementation of the GUI to convey as much additional information as possible by visual values and give the music collector immediate usable clues and decision support.

The single songs are visualized in an abstract fashion by circular symbols. Through variation in size, brightness and saturation, the attributes 'play frequency', 'release date' and 'last played' are encoded. By this combined visualization many scenarios can be described visually.

Enhanced through the concrete conversion of the particular wave form, conclusions on length, dynamics and structure are possible.

play frequency

release date

last played

combinations

selected
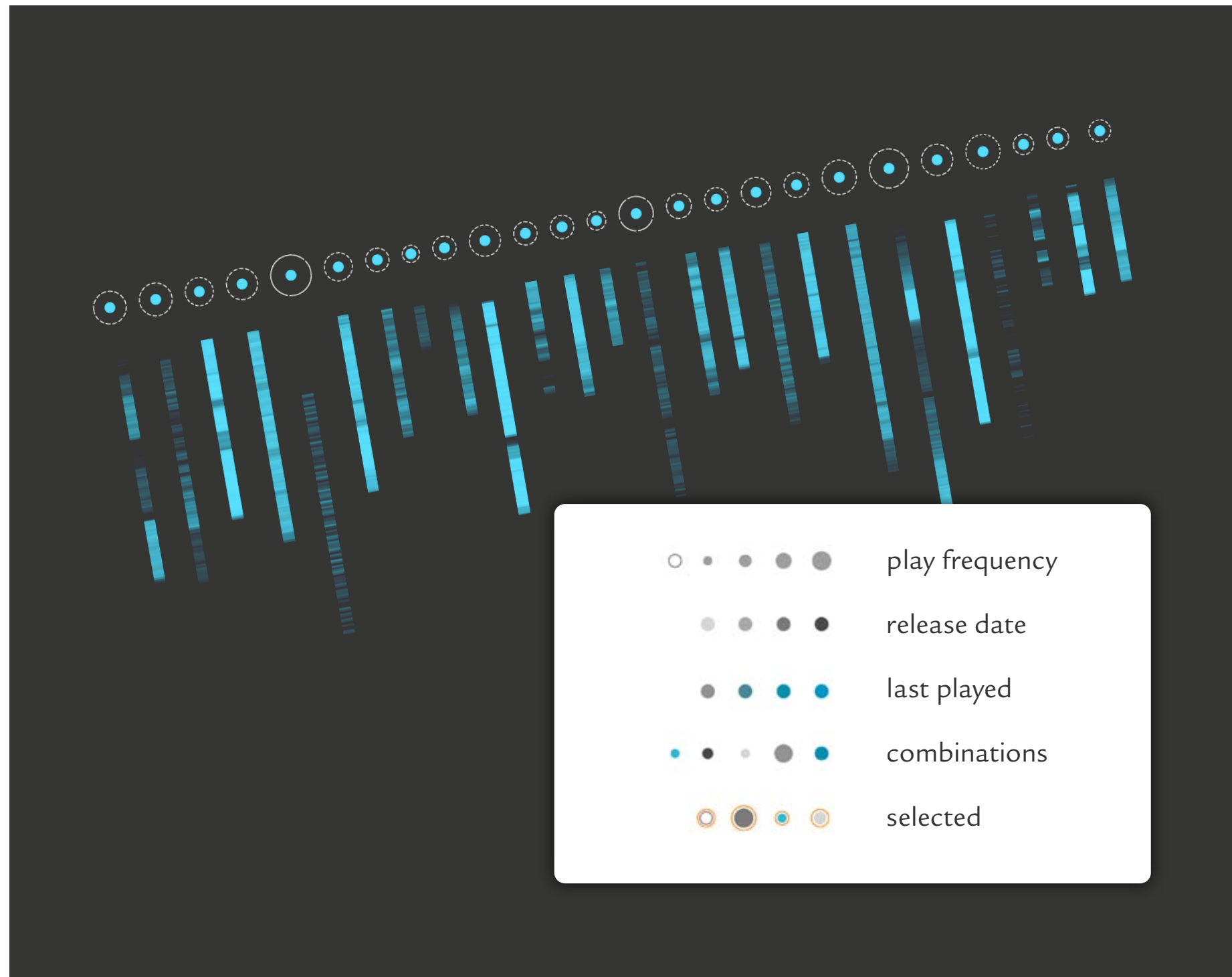
Graphical User Interface – Visualization of the Collection and Interactions

The position of a title within a compilation is deemed to be the visually most dominant encoding. – In the working area of the interface, the single titles of the music collection are displayed two dimensionally in a self organizing map arranged by musical similarity (similar songs close to each other).

To have control over the overlaps caused by the alignment and to embed additional textual information, a Zoomable User Interface is used. This supports further a dynamic navigation and interaction without disruption of orientation by changing the data area.
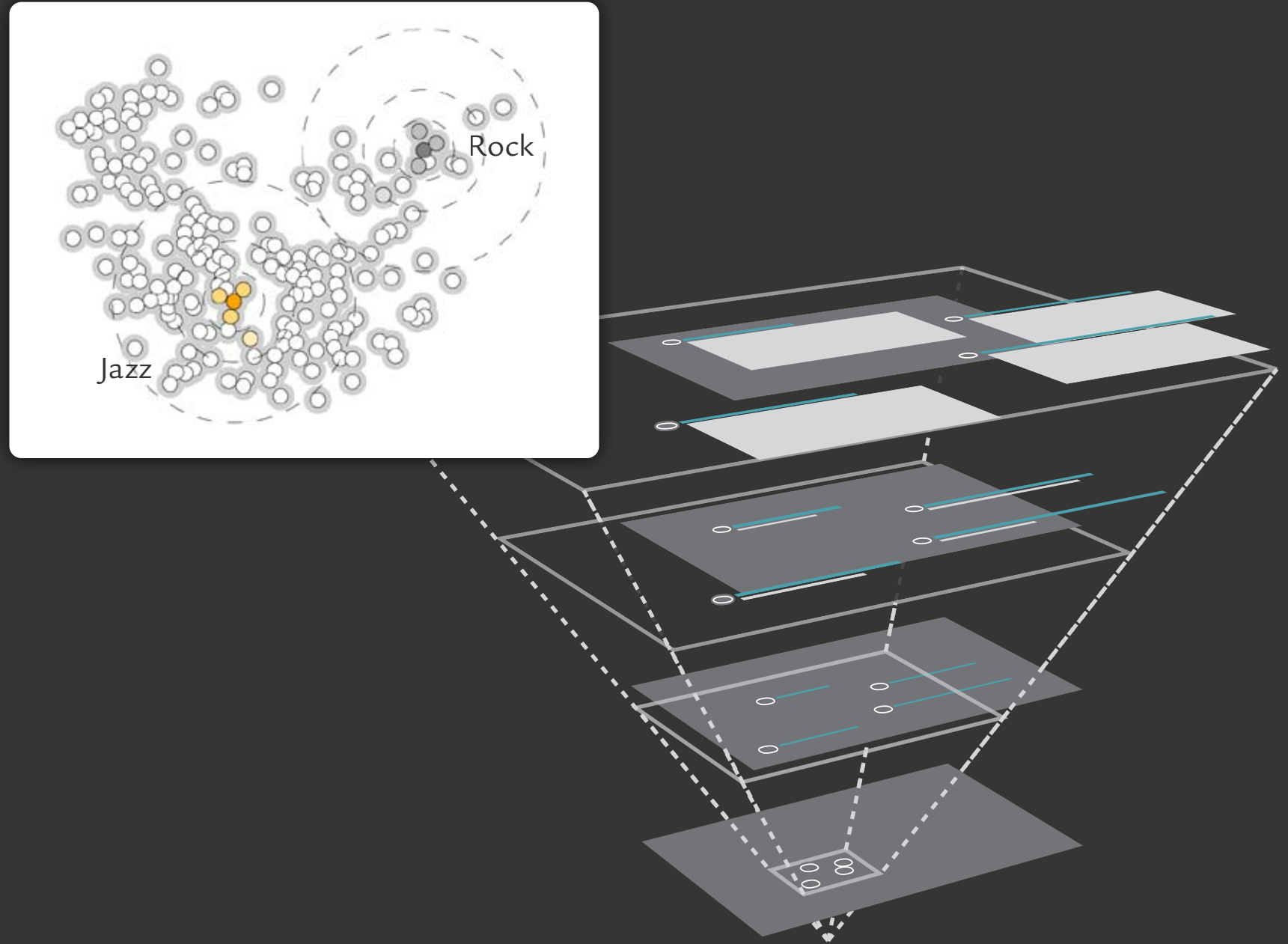
Prototype

The cognitions and concepts developed within the design process were translated into a tangible interface prototype. A detailed description of interactions – like orientate, navigate, inform, play, compile, compare and receive recommendations – occurs with animated scenarios within the software simulation.
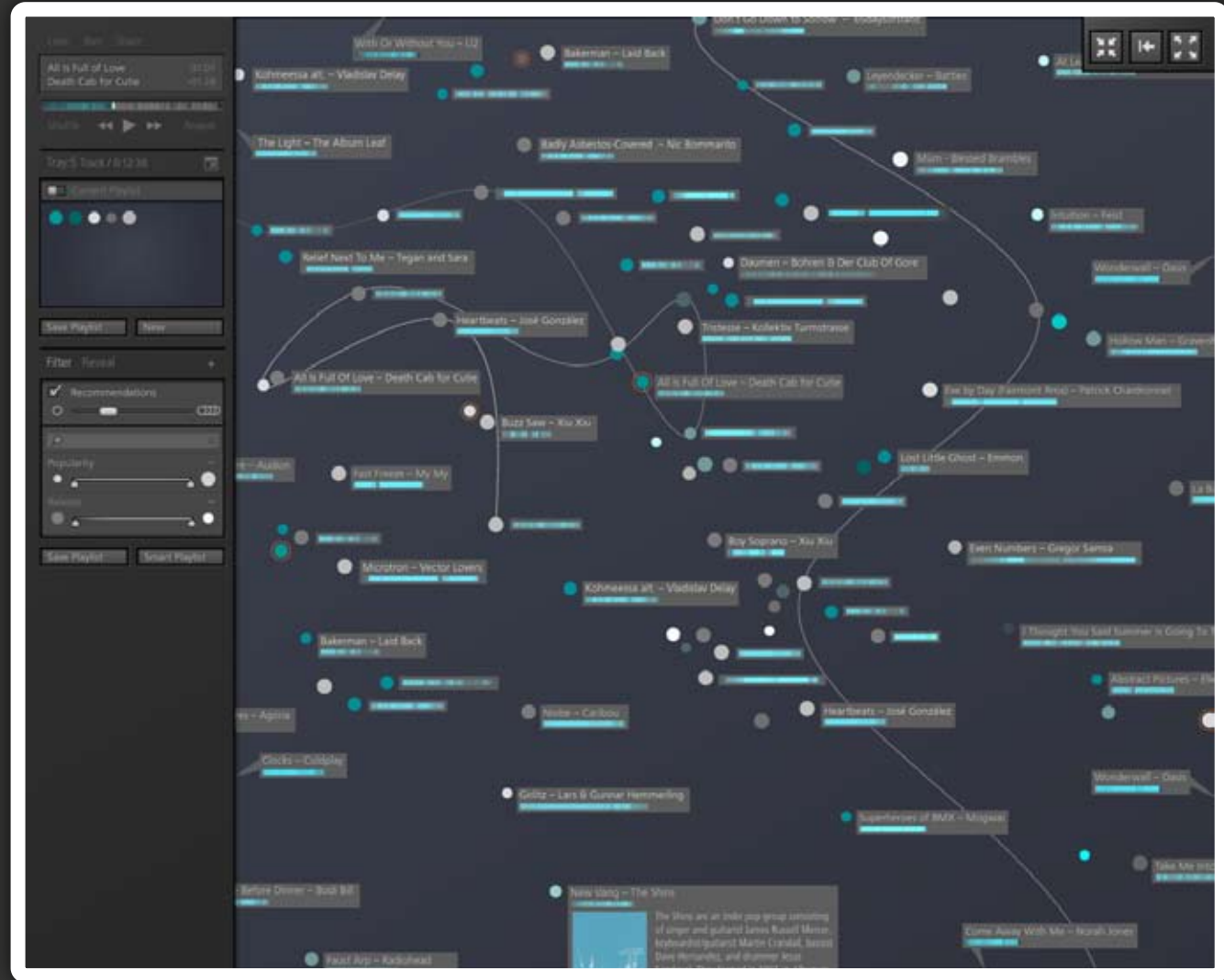
You can download the prototype for Windows here:
http://www.formater.de/downloads/playlist.win.zip

Prototype for Mac OS X:
http://www.formater.de/downloads/playlist.osx.zip

A short description of the main functions is available at:
http://www.formater.de/

Many thanks for your interest!

Interface of the prototype