

Where can I store my data? How usability can be improved in BExIS2

Felicitas Löffler, Dorothee Wieczorek (FSU Jena)



Agenda

- Usability definition
- 10 Usability heuristics
- Heuristics evaluation of BExIS2
- Results and suggestions for improvement



What is usability?

[Jakob Nielsen]



*“On the Web, usability is a necessary condition for survival. If a website is difficult to use, people **leave.**”*

- Usability is a **quality attribute** that assesses how easy user interfaces are to use
- **10 usability heuristics**



Visibility of system status

– “I know what’s going on”



Match between system and the real world –

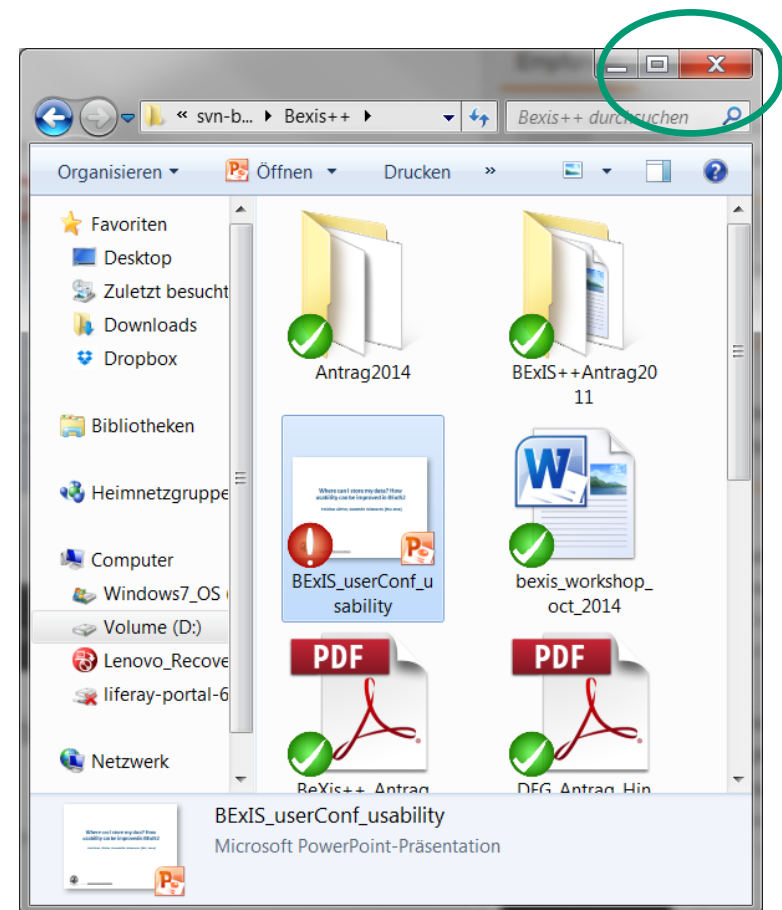
„I know what you’re talking about“



User control and freedom – “How to go back?”



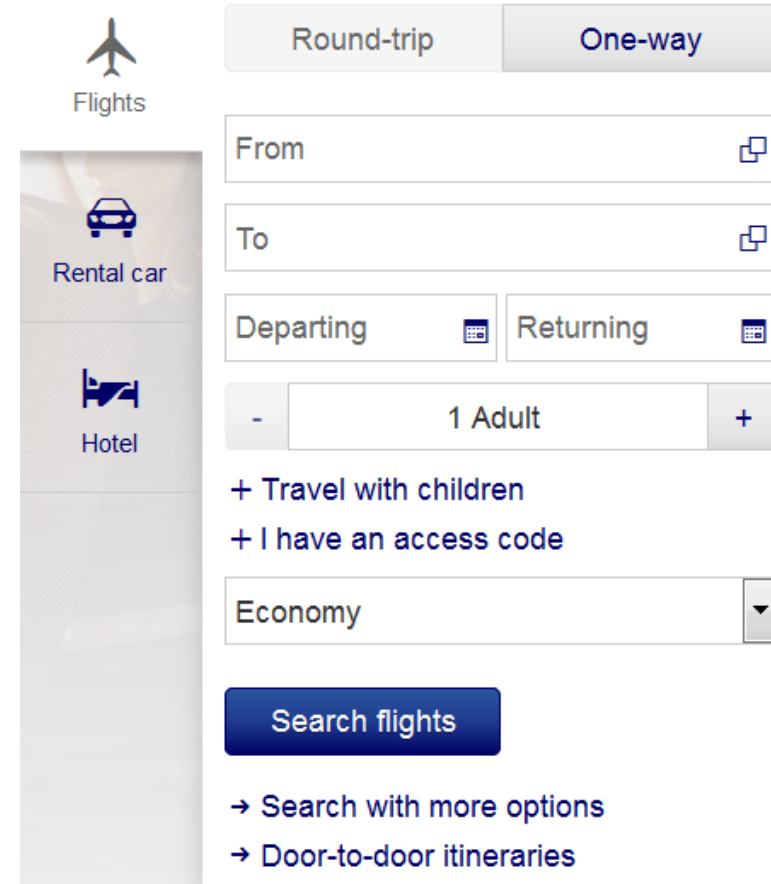
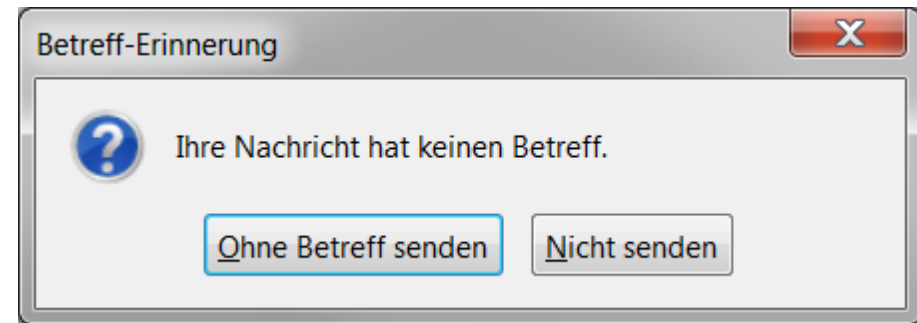
Consistency and standards – „That seems familiar to me.“



Error prevention –

“Thanks for reminding!”

Recognition rather than recall–
„I know what I need to do here“



Flights

Round-trip One-way

From

To

Departing Returning

- 1 Adult +

+ Travel with children

+ I have an access code

Economy

Search flights

→ Search with more options

→ Door-to-door itineraries



Flexibility and efficiency of use –
“Where is the shortcut for this action?”



CTRL

Z

Aesthetic and minimalist design –
„That’s clear and comprehensible.“

**Overview first,
 zoom and filter,
 then details-on-
 demand**

[Visual Information-
 Seeking Mantra
 of Ben Shneiderman]



Help users recognize, diagnose, and recover from errors –

“I made something wrong and I know how to fix it.”

translator

Your request failed to complete.

Please configure a valid Microsoft Translator license.

Language from
English

Language to
Spanish

Translate

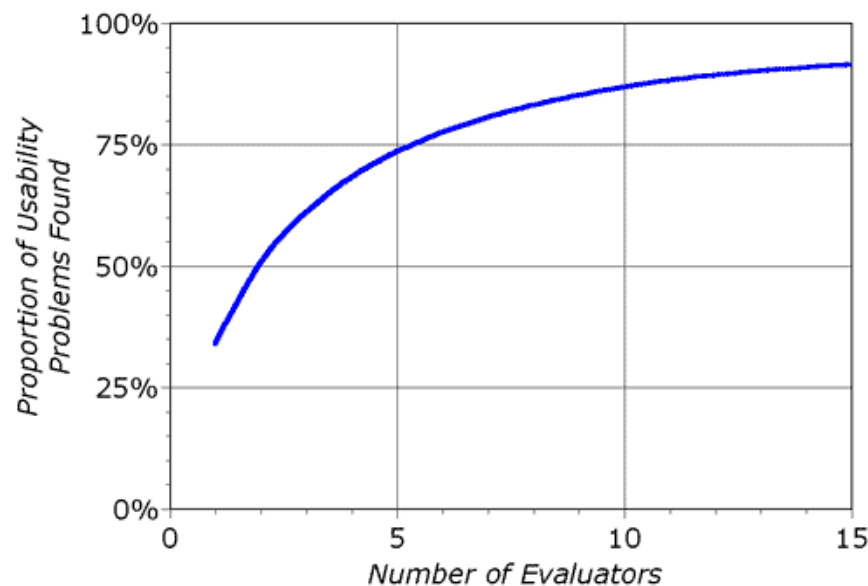
Help and documentation –

„Please help me!“



Heuristic Evaluation

- BExIS 2.5.1 in December 2014
- Questionnaire based on usability heuristics
- 3-5 experts can identify up to 75% of usability problems



[Jakob Nielsen, 1995]



Heuristic Evaluation of BExIS2

Utilizability

Previous knowledge of a user, comprehensibility, selection boxes and filter – does the system represent a daily workflow? (*Match between system and real world*)

Personalization and efficiency (*Flexibility and efficiency of use*)



Usability experts and advanced users

Navigation

Exits during processes, Links/Buttons
(*User control and freedom*)

Start pages, overview, site-maps, dialogs
(*Recognition rather than recall*)



Heuristic Evaluation of BExIS2

Information presentation

ordering and visibility of navigational elements, information overload (*aesthetic and minimalistic design*)

clear and comprehensible vocabulary for navigation and explanations, e.g., buttons, links, headlines, error messages (*consistency and standards*)

warnings, icons, auto complete functions, selection boxes (*error prevention*)



Heuristic Evaluation of BExIS2

User-System-Communication

Are errors recognizable as errors? Help to fix the problem
(Help users recognize, diagnose and recover from error)

response time, system status visible?, more system feedback required?
(visibility of system status)

Help & Support

help visible and accessible? Which interaction opportunities are provided? Which are required? Quality of help documents *(Help and documentation)*



Utilizability

previous knowledge required to understand the software
glossary, additional icons, more guidance

text comprehensibility not optimal (e.g., “Plan”, “Collect”)
better: “Data collection”, icons

some dialog inputs are too time-consuming (“create a dataset”)
pre-filling where possible, provide all input fields at once, copy-
function



BExIS 2.7.0

Home Search Plan Collect Administration Help

Dataset setup

- Technical Contact / Person
 - 1
- Content Contact / Person**
 - 1**
 - 2
- Description / Description
- Owner / Owner
- Scope / Scope
- Unit / Unit
- Summary

Content Contact

A container element for several administrative conta

+
1 X
2 X

BExIS 2.7.0

Home Search Plan Collect Administration Help

Dataset setup

- Technical Contact / Person
 - 1
- Content Contact / Person
 - 1**
 - 2
- Description / Description
- Owner / Owner
- Scope / Scope
- Unit / Unit
- Summary

Content Contact

A container element for several administrative contacts for the dataset.

* **Name**

Email

Address

Phone

Validate

missing undo/redo

LogOn

User Information

Authenticator
local

User name
demo

Password
.....

LogOn Reset Cancel

Or better **Sign In, Login?**



Navigation

undo and redo not always present
later changes need to be possible

missing overview
breadcrumbs and start pages



Where am I? – no headline or breadcrumb

Welcome **demo!** [[Log Off](#)]

Home Search Plan Collect Administration Help

Create Structured
Create Unstructured

Structured
Bird (in use)
InvIArth (in use)
traits test

Unstructured
GIS data
image
video

Bird (in use)

Name:* Bird
Number of Variables: 6
Data Structure ID: 2
Description: Bird observation

Functions	locked	locked	locked	locked	locked	locked
Name	StringIdentifier	Accipiter_gentilis	Buteo_buteo	Falco_tinnunculus	Milvus_milvus	Date
Optional	✓	✓	✓	✓	✓	✓
VariableID	4	5	6	7	8	3
ShortName	stringId	scientific name	scientific name	scientific name	scientific name	date
Description	Name for experimental plots	observation of Accipiter gentilis	observation of Buteo buteo	observation of Falco tinnunculus	observation of Milvus milvus	the date of observation
Unit	None	None	None	None	None	None
Data Type	String	String	String	String	String	Date

Datasets Download AddVariable Delete Save Save as Cancel

What does it mean?

visible all the time?



Information presentation

navigation not always visible and consistent

avoid scrolling, navigation needs to be present all the time,
usage of same icons and naming

missing warnings when leaving a dialog with unstored data
hint or warning when user clicks on another menu item
while entering data in a dialog

minor things: e.g., bad highlighting of selected filters in
“Data Attribute Manager”, re-design of the icons – bigger,
not only grey



Home Search Plan Collect Administration Help

- Dataset setup
- Technical Contact / Person
 - 1
- Content Contact / Person
- Description / Description
- Owner / Owner
- Scope / Scope
- Unit / Unit
- Summary

Create a dataset
 Upload data to a dataset
Push big files to server

representing the agent acting as the publisher of

* Name

Email

Address

Phone

Validate

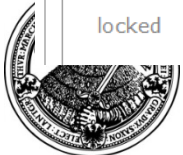
Home Search Plan Collect Administration Help

Data Attribute Manager

With this interface you are able to manage (e.g. create, edit, delete) data attributes which may be used as variables in data structures (a variable is an instance of an attribute). Data attributes cannot be edited or deleted once they are associated with a data structure (they become locked).

Create Data Attribute

Actions	Name	Id	Short Name	Unit	Data Type	Constraints	Description
	Name	29	name	None	String		Name of something
locked	Date	19	date	None	Date		the date of something
locked	ScientificName	22	scientific name	None	String		name
locked	Identifier	28	Id	None	Number		internal numbering of the something
locked	StringIdentifier	20	stringId	None	String		Identifier with numbers and characters



User-System-Communication

errors are not self-explanatory

avoid technical terms and describe errors with the user's language

only one type of error is supported

provide several types of errors (hints, warnings, errors)

missing communication when uploading big files

visualize the upload process

auto-complete functions would be helpful

[-] Error 1

in Package : **Technical Contact (1)**

Attribute : **Name (1)**

with value = **null**

is not optional

[BExIS 2.5.1]

[-] Error 1

in Package :

Technical Contact (1)

Attribute : **Name (1)**

(1)

is not optional

[BExIS 2.7]



Help & Documentation

missing “Help and Documentation” part
provide FAQ, Contact form, HowTo, detailed instructions how to
create a data structure, a dataset



Thank you for your attention!
Questions?



seit 1558

Friedrich-Schiller-Universität Jena

Usability in BEXIS2
Felicitas Löffler, Dorothee Wieczorek

<http://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/>

<http://de.slideshare.net/crafted/10-usability-heuristics-explained>

<http://www.nngroup.com/articles/ten-usability-heuristics/>

Wieczorek, Dorothee: *Usability-Studie zur Identifikation von Problemen in der Benutzerinteraktion und Bedienbarkeit am Beispiel des Datenmanagementsystems BExIS2*.
Bachelorarbeit, FSU Jena, 2015

