Best Practices and Concepts Driving Powerful HMI Design
“You mill with your eyes!”
95.1% of those surveyed indicate that design plays a major role in the brand value of their company.
69.1% of those surveyed indicate that design has a major influence on the overall return of their company.
SIMATIC HMI machine based
Design also means: processing information

Energy optimization
Process data
Diagnostic data
SIMATIC HMI machine based
… from recognition to decision

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SIMATIC HMI machine based
The HMI as the eyes, ears, and hands

HMI – the only interface between machine and human
SIMATIC HMI machine based
The capacity of humans – Measuring stick for usability

7±2

Errors

Interrupted attention
Information overload

Information items

0 1 2 3 4 5 6 7 8 9

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What does it mean to you?

Turn the visualization into a showpiece!
Design & Usability
Importance of the HMI in a machine

Usability
As viewed during usage situations, whether or not a product is easy to operate and learn.

User Experience (UX)
Includes all aspects of the interaction of a user with a company, its services and its products.
Design & Usability
A better HMI in 5 steps

DESIGN
Colors, icons, fonts, etc.

COMPOSITION
Screen types, navigation, etc.

STRUCTURE
Information architecture, user flow

FOCUS
Use areas, target group

STRATEGY
Use cases, customer requirements
1. STRATEGY

- Gathering of customer requirements
- Interviews / Research
  "What does the operator need?"
- Definition of use cases for operation
2. FOCUS

- Define areas of use
  Near-field / far-field, indoor / outdoor, etc.

- Define target group
  What personnel operate the machine?

- Glove operation?

- Prioritize use cases
3. STRUCTURE

- Information architecture
  Where is what information needed?

- Specify hierarchy of individual screens

- Design "user flow"
4. COMPOSITION

- Definition of screen types (design patterns)
- Composition and hierarchy of screens
- Which objects are used for which action (interaction).
Design & Usability
A better HMI in 5 steps

5. DESIGN

- Definition of colors (corporate design guidelines)
- Definition of icons
- Design of objects
- Graphic elaboration of the screens
EXAMPLE
Design & Usability

Screen redesign - Original screen
Design & Usability
Screen redesign - New structure
Screen redesign - Object size

Heating Unit 1

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<thead>
<tr>
<th>Mode</th>
<th>Man</th>
</tr>
</thead>
<tbody>
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Start

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Timer

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Manual

00 : 00 : 00

Design & Usability

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Page 21

SIMATIC HMI machine based
Design & Usability
Screen redesign - Visual design

### Heating Unit 1

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<tr>
<td><strong>Total Time:</strong></td>
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### Controls

- Compressor
- Feed Pipe
- Combustion
- Temp-regulation
- Overheating-regulation
- Maintenance
- Alert

**Date:** 12/31/2000 10:59
### Design & Usability

**Screen redesign - Further optimizations**

![Image of timer configuration screen]

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Manual: 00 h : 00 m : 00 s

**Set Values**
Design & Usability
Screen redesign - Comparison
Design & Usability
Redesign - Before / After
Design & Usability
"The 10 commandments"

Know your customer
The goals of your customer are also your goals.

Follow previously learned patterns
Learn from apps & software used in everyday life.

Stay consistent
The user needs consistency during operation.

Create a visual hierarchy
Make use of size, color and placement to set the focus.

Give feedback
Inform the user at all times.

Be forgiving
An action should always be able to be undone.

Speak the language of the user
Provide understandable texts and messages.

“Keep it simple”
Abide by the motto “Less is more”.

Keep evolving
Collect feedback and fold it into development.

An HMI is more than colorful images
An HMI is the user interface.
Design & Usability

... seen only recently.
Design and usability increase productivity

High-quality machines

5 - 12%
SIMATIC HMI machine based
... an easy way for you to get started!

Attractive HMI templates
Free, fast and easy: HMI templates with ready-made navigation concepts in attractive design.

HMI styles for more customization
Free, fast and easy: HMI templates with ready-made navigation concepts in attractive design.

Innovative icons and graphics
Free, fast and easy: HMI templates with ready-made navigation concepts in attractive design.

SIMATIC HMI machine based
... an easy way for you to get started!

HMI Toolbox
It's generally the little things that make everyday life easier. We offer you free tools including descriptions.

Questions?

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