Visualisation

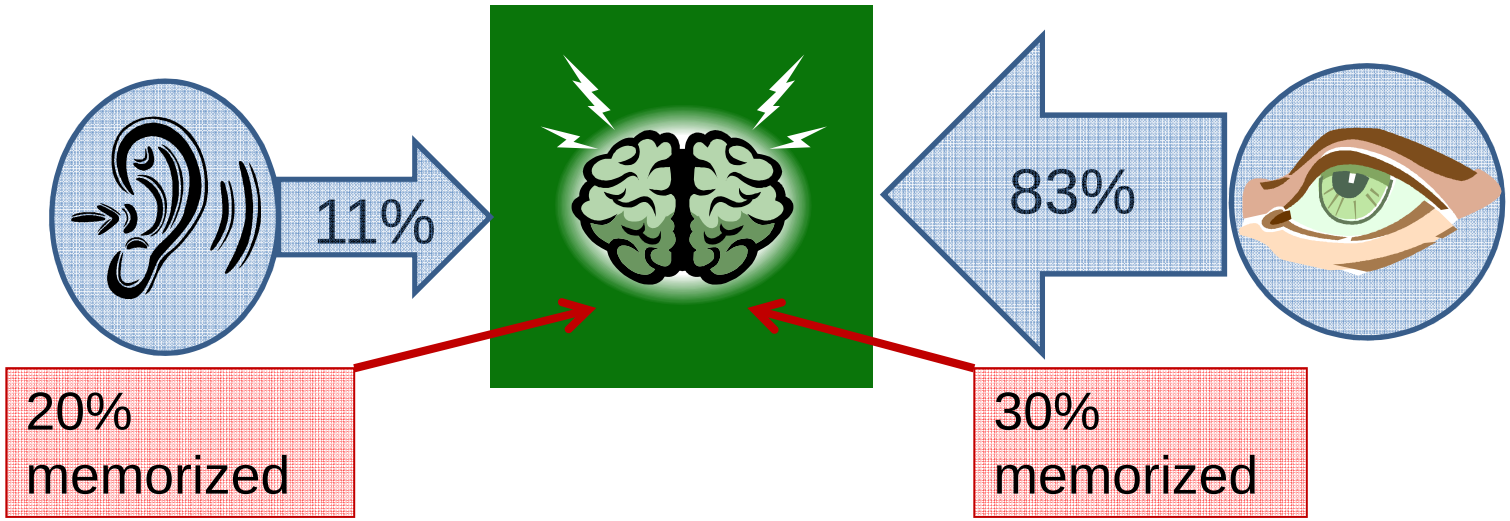
Why?

What?

With what?

How?

Visualize- why?



Balance for **combination of hearing and seeing**:

Information intake 94%

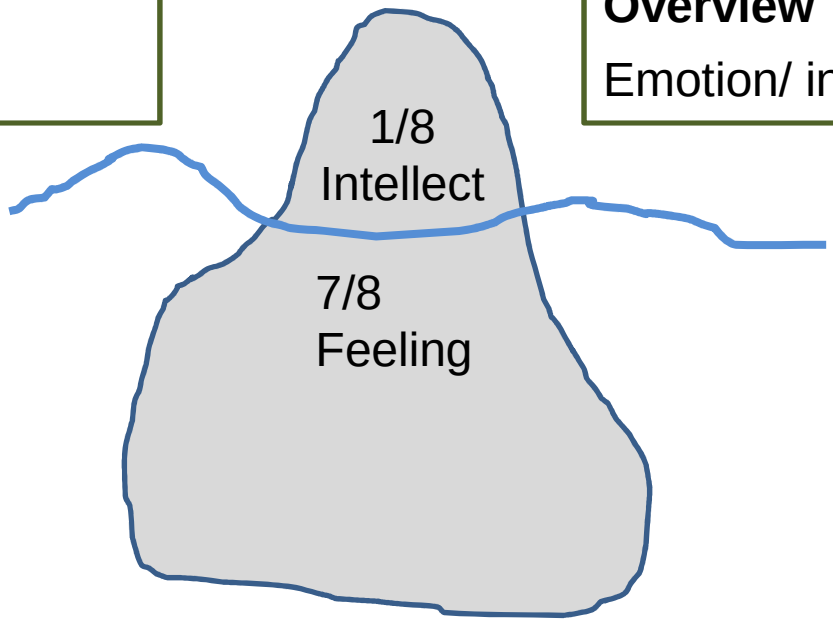
- 50% forgotten

= 47% of the information intake will be memorized

Visualize – why?

Left brain hemisphere:
Digital
Verbal
Language
Rules/ laws
Analysis
Time
Detail
Logic

Right brain hemisphere:
Analog
Non-verbal
Body language
Creativity
Synthesis
Space
Overview
Emotion/ intuition



Visualize – Advantages

Advantages of visual demonstration:

- Issues, demostrated supported by pictures, drawings or other visual impressions will be better memorized
- Complex combinations (procedures, measuring values, structures...) can be better explained with visualization
- Visualization of issues concentrates to the most important points (Selection between essential and inessantial information)

Visualize- what?

- Figures
  illustrate and making clear
  - Spreadsheets
  - Diagrams

- Structures and combinations
  Illustrate formation, chronologies oder relations (cause/ effect)

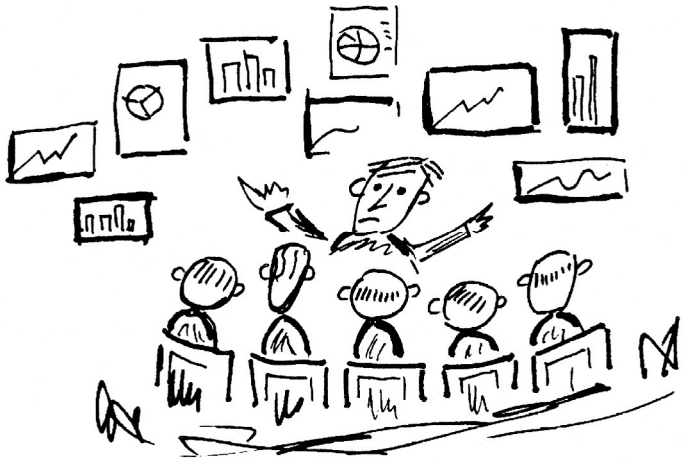
- Chronologies
  Chronologies of action and decision, instructions...
  - Flow chart

Visualize- Figures Diagram

General:

- Title, underline, where nessesary indication of source
- Colors and shading must be clear and specific
- Colors have meanings - be careful!

Less is more

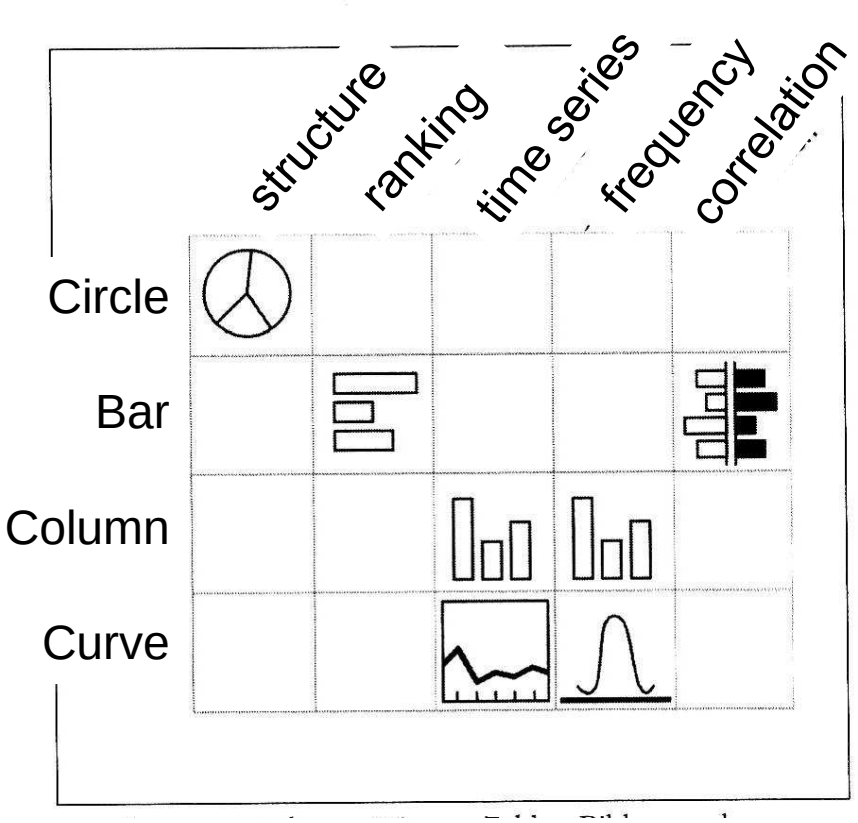


Too much!

Visualize- Figures Diagram

Diagrams make comparisons better understood:

- Structures
  (consistence)
- Ranking
  (major/ less; bigger/ smaller)
- Changes over time
  (up- and downturns, in–/decreases)
- Frequency distribution
- Correlations
  (Connections between influence values)



Abstracts of data before demonstration makes them arranged better!

Visualize- Figures: spreatsheets

- Spreadsheets

  Instrument for a demonstration presentation of results in modest use

  - resonable composition of columns and lines
  - clearness regarding statement

    (perhaps summarize with a diagram)

  e.g.

  - to compare figures, they should stay below each other
  - highlight for easier orientation
  - spreadsheets always with headlines
  - regional information better used with maps

Visualize- Figures: Diagram

If something is important, it also has to be readable
- also axis legends, headlines etc.

- Circular chart:

  typical to visualize percentage proportions on basic population (=100%)

  - If possible <6 values (=segments) – better orientation!
  - Segments of a circle arrange starting with biggest value in clockwise direction
  - To highlight a single aspect one segment can be exposed

Visualize- Figures: Diagram

- Bar chart and column chart:

  Frequency distribution = column chart

  Rankings, to draw comparisons = bar chart

  - One–dimensional bars / columns easier and faster to understand
  - Maximum 5 bars or columns
  - If very different values – scaling

Visualize- Figures Diagrams

- Curve chart or Line chart:

  changes over time; up- and downturns...

  - < 7 points in time also is suitable a column chart, otherwise better use a line chart
  - Max. 5 curves with max. 5 data points each
  - Or <5 curves with more data points

Visualize- Figures: Diagrams

- Pictogram

  Values are shown in symbols (people, animals, objects or similar)

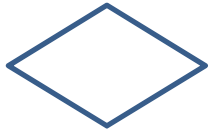
  - good for fast orientation
  - pictograms have to be clear and simple to understand

Visualize- Chronologies

- Supports to understand a time line and consistence
- Flowchart: 5 elements

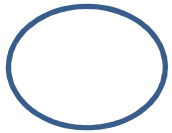
Begin and end

Activities



Decisions

Direction of action



Connecting point
(with letter or numeric character)

Visualize- with what?

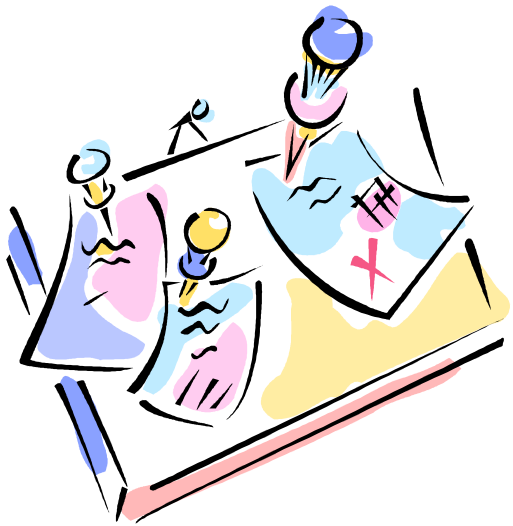
Mediums support the presentation- the use depends of:

- Number of participants and dimensions of the presentation room
- Text has to be readable from each seat
- Possibilities of the medium (e.g. Video sequences)
- Availability, a change of the medium supports the attention
- Mediums emotionalize

But no „Medium magic“ !

Visualize - Mediums

Beamer
(slide projector)

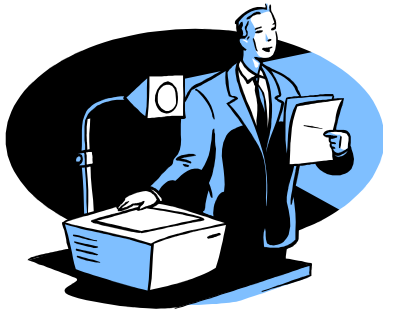


pinboard

Flipchart

Blackboard
or whiteboard

Overhead-
projector



Visualize- with which kind of medium

Overview ability to intention:

	Beamer	Flip-Chart	Pinboard	Overheadp.
Company	++			+
Products/ benefits	++			+
Opinions (pro/contra)		+	++	
Figures/ Data	++			+
Diagrams	++			+
Scenarios	+	+	++	+
Chronologies		++	++	
Connections	+	++		+
Structures	+	++	++	+
Discussions		++		+
Balance sheets	++			+

Visualize- how?

- Composition laws
- Font composition
- Use of color
- Implementation of pictures

Visualize- how? Compositon laws

Result of research of psychologie of cognition

- Law of nearness
  at close quarters are seen as a whole piece
  ➡ e.g. picture and legend are close together

- Law of closeness
  closed parts are more seen as a whole than open parts
  ➡ e.g. framing around pictures or central quintessences
  control the focus of the viewer

Visualize- How? Composition laws (2)

- Law of similarity
  Parts with same form, colour, dimension are felt as a whole
  (visual uniformity signalize factual togetherness)

  ➡ e.g. what belongs together should be demonstrated
  with same colours, shiftings, identical fonts

- Law of conciseness
  Elements with features like regularity, symmetry come togther to a good figure

  ➡ e.g. symmetric contures/areas keep help easy to memorize

Visualize- How? Font

- Font face should fit to content
- Be careful with changes in font face, font size, font style:
  - One type face, max. a second to highlight a headline
  - 4 font sizes:
    - main headline >= 32
    - subheading >= 24
    - continuos text >= 20
    - legend (picture) > 18
  - Max. 2-3 font styles, no combinations!
    (e.g. **fat**, *cursive* , <u>underlined</u>)

Visualize- How? Color

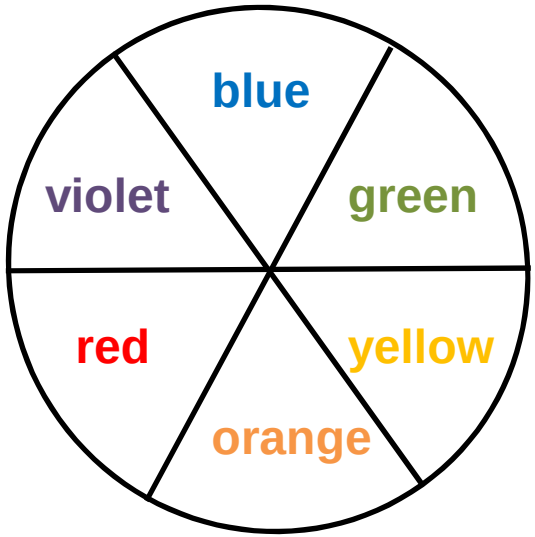
- Colors are instruments for illustrating and mostly have meanings
  Attention: cultural differences are possible!
- Use for structuring of information and orientation of the viewer

3 aspects for use:

- Use colors targeted for highlighting/ structure/ differentiation
  - be careful not to redirect !
- Few colors (max. 4), otherwise turbulent, confusing
- Keep readability in mind (background, contrast)

Visualize- How? Colors

Circle of colors



Background color and font

Black at white is good readable	White at black is fatiguing
Black at soft tinted is ideal	Black or white at grey is good

Effect and meaning of colors

Blue

- Standard for Flip Chart
- Neutral, like handwriting
- Good readability and contrast

Black

- Typical print color
- Rich in contrast, with red possibly aggressive

Red

- Aggressive (stimulus word), use it sparingly!
- For underline, framing, symbols

Green

- Low contrast
- Only completition color
- pictures, drawings, graphics

Use of color combinations:

- text max. 2 colors (blue/black+red)
- 3 colors for partly prepared flipcharts
- 4 colors only for prepared charts

~~Violet Yellow Mint green~~

- Act unserious
- Extrem colors don‘t engage so‘s sympathy!

Visualize- How? Pictures

Pictures are necessary for sophisticated visualizations:

„One picture tells more than 1000 words“ (chinese slogan)

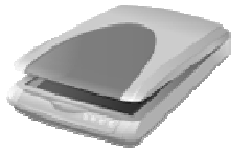
- Self making

Photos

Videos

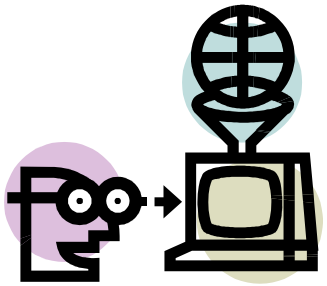
Graphics

- Using other sources



Scanning

Attention: respect intellectual property rights !



Search at web or picture data bases

5 Rules for design of slides

- Manageable number of information
- Clear structure
  Arrange information
  use sparingly and consistent typographic elements
- Choice right font size
- Considered use of font type/ -style
- Targeted use of colors

5 Rules for design of slides at one glance

1. Amount of Information

magic

2. Structure

1.
2.
3.

-
-
-

X= blue
Y= red

3. Font size

Minimum 18...

Better: 24

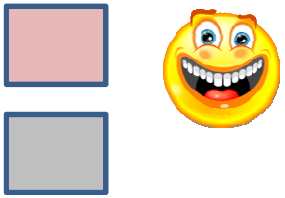
4. Font type

Arial !!!

Times Roman !!!!

forte ????

5. Color design



Red= danger