Espresso

brief reference to information design

77 ~~principles of~~ information design

77 selected thoughts on information design

The context is: With a passion for graphics and a background in business administration it was and is my intention to make information accessible and appealing. This way I got in touch with the discipline of information design, a fascinating combination of design, research and methods, fulfilling people's basic needs in daily life.

This little booklet is a teaser to this discipline, without any claim on a academic approach or completeness. But a compilation of useful principles, methods and tools out of experience, as a starting point for further explorations and discoveries.

please, let me know your thoughts

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the very-white-design of this book

according to Hara Kenya (page 123)
white space in a book is a way of listening to the reader,
in addition it is a vessel for your thoughts,
to be used as a notebook

1) Espresso

learnt from: Graziella Tonfoni

Information Design could be compared to the Italian Espresso:

- it needs excellent beans = content
- which should be properly raosted and brewed = competence
- made with as little water as necessary = not diluted
- presented nicely and usable = design
- maybe a bit sweet with sugar = aesthetics
- to be enjoyed at the cafeteria = context

read more: Graziella Tonfoni: Information design / The Knowledge Architect's Toolkit

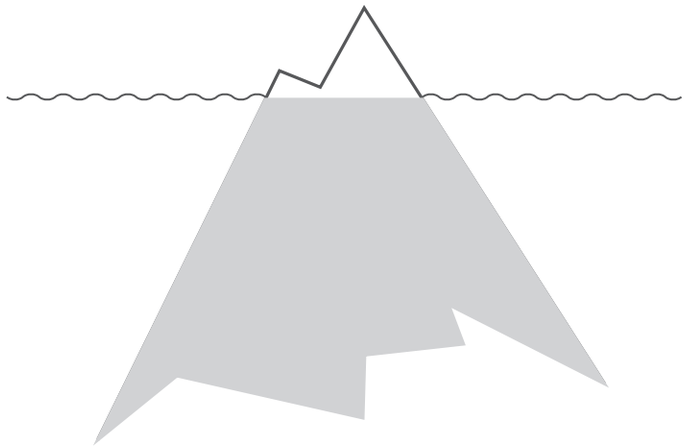
2) (another) Iceberg

learnt from: conversation with Rurdolf Greger

another application of the iceberg model:
you see: the tip of the iceberg:
any kind of visible- and sensecapable design:
visuals, pictograms, infographs, signage, forms

but it is always based on:
analysis, understanding, structures,
concepts, systematics and procedures

similar as: the i-pod and i-tunes

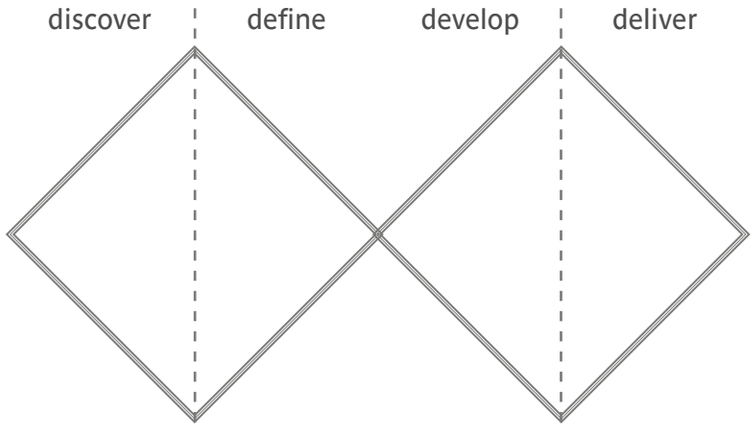


3) double diamond

learnt from: British Design Council

As in any design process, the double diamond model is applied in information design:
Divided into four distinct phases, Discover, Define, Develop and Deliver, it maps the divergent and convergent stages of the design process, showing the different modes of thinking that designers use.

read more: www.designcouncil.org.uk/designprocess

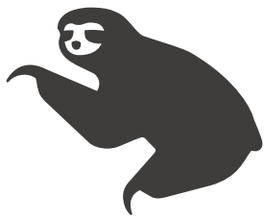


4) a sloth impression

learnt from: won´t tell

the more information design appears to be very lazy
in output as media, products and formats, the more
well done it may be:
- condensed, intensive message
- little or none redundance
- as little as necessary
- smart – if well considered

read more: keep in mind, but don´t take it too serious



5) a definition: shortcut

learnt from: Richard Grefé

Design is the intermediary between information and understanding.

6) a definition: International Institute for Information design

learnt from: idX
Development of International Core Competencies
and Student and Faculty Exchange in Information Design

read more: www.iiid.net

Information Design is
A) the defining, planning, and shaping (workout)
B) of the contents of a message (content)
C) and the environments in which it is presented (context),
D) with the intention of satisfying the information needs of the intended recipients (user).

7-17) in case of emergency and need of evidence

learnt from: idX
Development of International Core Competencies
and Student and Faculty Exchange in Information Design

read more: www.iiid.net

It's the "new media", which more than anything else prompted the development of information design. However, to deal with the possibilities and demands of the new media, we must acquire competencies quite independent of them. Terry Winograd, Stanford University, may be quoted: "The majority of today's students will not be working in a world bounded by current familiar examples. They will design interactions that move beyond the desktop and even beyond the extended desktops of PDAs and wall-sized whiteboards. The human-computer interface of the future will not be perceived as the interface to a computer, but as a pervasive part of the environment we all inhabit." (4)
Since "the environment we all inhabit" presents itself three-dimensionally, we cannot restrict ourselves to paper or the computer screen.

Information design in social context

Equipped with the appropriate expertise based on practical, methodical and social competencies the information designer will have "the right stuff" to become one of the key professionals of the future. The quality concept of the virtual enterprise (5), geared to customer and employee relations, suits him well. The philosophy: it is much easier to keep existing customers (or employees)
than to gain new ones. And: one loses customers (and employees) only when they have reason to be dissatisfied. Customers and employees alike want to be informed and to feel a part of a community with shared values. And if they feel they are welcome in such a community that listens to their concerns and gives them an opportunity to contribute to improvements they reciprocate with dedicated loyalty.
Ever more frequently, the idea of making the customer a partner moves to centre-stage in company philosophies. Philips (Royal Philips Electronics N.V., one of the largest electronics companies in the world) had compressed this to a slogan: "Let's make things better!"
Information designers identify and optimize task-related
information required by both customers and employees.
This, however, is easier said than done. In the course of development of the "Fachhochschul-Studiengang Informations-Design" for Technikum Joanneum, Graz, interviews were held to investigate the needs of the regional industry with employment opportunities for graduates.
A representative of a world-wide successful company* stated: "When we wish to bring a product to market, and the development engineer has done his job, our problems begin: how do we explain the product in sales documents, how do we explain operation and maintenance, how do we create Manuals and Help-Desks?" The representative of another company**, no less well known as an international market leader, has an answer: "We hire specialists which we found after a long search in Kiel in Northern Germany. When we need the same in English, we get help from experts in Atlanta in the United States".
The development of information products is becoming ever more complex. Designers with interdisciplinary competence who are able to achieve user-friendly results are sought-after around the world.
Designing means planning and developing. What the design profession is able to bring about is clear to anyone who has had first hand experience with design processes. For these people, the future of the world economy stands or falls with design. Thinkers like Edward de Bono demand: "The word 'design' should be a very important word because it covers all aspects of putting things together to achieve an effect." (6)

The industrial age gave rise to industrial design.
The information age gives rise to information design.

An article in Business Week magazine in 1996 expressed what differentiates the contemporary interpretation of design from previous impressions. Arnold Amstutz of Citibank Private Bank referred to this in his presentation "Customer-driven Design" at the "1996 Strategic Design Conference", run by the American Center for Design in Chicago. He said, "They were talking about the Industrial Society of America Awards and they said that America is coming back to the cutting edge of design. Well, that's encouraging. But what was really fascinating to me is what they said about why. They said: Americans are pioneering a major shift from designing a single product to designing the whole process of product innovation and development. And I would submit that the key thing that we see happening is that it is no longer a single process – from one point in time to the end and then you start over – but that it is rather becoming an iterative process with change cycles as short as three weeks. And they pointed out a third thing that I found interesting and that was: that the Awards illustrated the interactive design factor which is making the US edge real." (7).

Any remaining doubts about the relevance of such statements to the profession of information design were put to rest by Ann Senechal in the Spring 1997 edition of "Adobe Magazine": "It's all in the PROCESS. Information design isn't necessarily about databases, spreadsheets, or even infographics. It's about process – designers and clients working together to solve problems and convey complex information through design systems that are functional and beautiful." (8)
The information age, "new independents", and knowledge transfer
The process of rapid change, enhanced through evolving technologies, including those in the realm of information and communication, leads up to societal transformations. New professions appear for which there exist no educational opportunities.
In addition, many people practice several occupations in parallel. (9)

There may be various reasons for this:
1. They like the variety.
2. They want to increase their independence and maximize their income.
3. Available positions are part-time only.

For the same reasons, many people change jobs with astounding regularity. (10)
There are no signs that the indicated changes have come to a halt.
Developments like the mentioned ones often result in the need to train and retrain.
This is often done in an autodidactic manner.
Information designers facilitate knowledge transfer by making information (supplied by those who know) accessible and understood (by those who don't know, but aspire to know). They do it by considering the task-related and goal-oriented purpose of the information. To Richard Saul Wurman this should lead up to processes which empower motivated people to accomplish something which they otherwise would not have been able to achieve. "Empowerment is what enables employees to go beyond the instructions they are given." (11)
Without knowledge transfer there is no effective learning of how to cope with challenges of assigned or desired tasks, such as those encountered in a new business situation, when moving around in a country where people speak a language different from one's own, when trying to use unfamiliar means of public transport, or wanting to operate an unfamiliar apparatus.

It is the same with information as it is with construction materials: for efficient design and production one requires purpose-led concepts and plans. It's not enough just to have printing presses and "information highways" in order to create usable information, the same as construction equipment and building cranes cannot alone create usable human spaces.
For optimal information creation one requires information designers the same way architects are required to create optimal living and working spaces.

In the context of information design, the "user" is someone who uses an (information) object, a service or a system in the framework of an activity in order to carry out a task. Carrying out an unfamiliar task to achieve particular objectives can be facilitated by the acquisition of task-specific information. The usefulness of information is dependent on:
• whether and to what the extent it can broaden the existing knowledge of a person so that he/she can make reliable decisions for the accomplishment of given tasks
• whether the rendering of the information enables the user to quickly find and to clearly understand the required information.

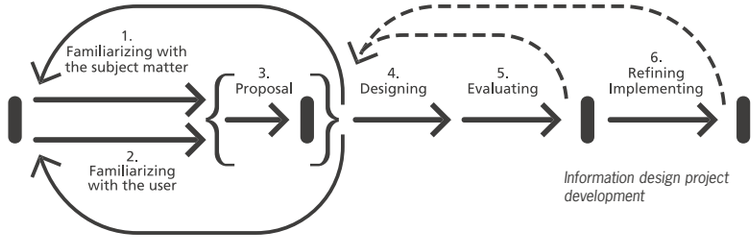
The intention of use is an important constituent of this definition. It implies a predisposition on the part of the user and is the reason why "creating desire" is not a part of information design.
Depending on the task at hand, the user of information is an information end-consumer or someone in the information chain between information building and the abandonment of the information.
To create satisfaction for all those involved equal attention needs to be given to the envisioning, planning, creating, implementing, servicing, using, updating, and eventual modifying or recycling of information with respect to a given information system.

Zwaga, Boersema and Hoonhout in the introduction to their book Visual Information for Everyday Use (12), refer to "use-centered design", a term made a subject of discussion by Flach and Dominiguez (13): "A designer is a product manager who coordinates the contribution of all the different experts and is the custodian of the budget and the time scale." Flach and Dominiguez continue to
say that "a new product should satisfy at reasonable costs not only the needs of the user, but also those of the client/producer, and, when applicable, those of the distributor and retailer. Also the consequences of the introduction of the product for the environment may play a role in the development process. From the point of view of the user this relates to: appropriate pricing, easy availability, convenience of use, aesthetic appeal, and safety in disposal."
To satisfy the information needs of the intended recipients Information Design must facilitate knowledge transfer within activity systems, overcoming departmental boundaries and considering all those involved in an information chain from creating to using to substituting or abandoning task-related information.
Optimized knowledge transfer requires optimally designed task-related information.
Whether information gives rise to an optimal task-related broadening of the user's knowledge depends on how well the content and the design of the information corresponds to his/her needs.

The demands on the design of information are:

- content based (specific to the circumstance about which the person wishes to gain knowledge in order to make decisions)
- cognitive (specific to the perception, learning and recall abilities of the person who wishes to use the information), and
- technical (specific to the information system which makes the information available).

Professional Practice



Step one of every information design project:
Understanding a given subject matter and its value for a given user.
The first stage of every information design project requires the designer to unlock – with an open mind and open eyes – the information to be designed. The warning applies: If you don't understand it, don't design it.
In normal business life understanding the information usually precedes understanding the anticipated adressees of the information. On occasion this can be the other way round. Quite certainly, both notions are closely interlinked.
By becoming familiar with the meaning of the information and the environments in which it is intended to be presented the designer also acquires intimate understanding of the purpose of the information.

Step two: Understanding the users/addressees of the information and applying methodical competence. "Once you see or understand something you cannot conceive of what it was like not to have seen or understood it. You lose the ability to identify with those who don't know." (14)
Information designers are aware of the resulting dilemma: Understanding of a given subject matter as a prerequisite of facilitating knowledge transfer is often an impairment to awareness of the mindset of the intended recipients of the information.
The acquired methodical competence enables the information designer to overcome this dilemma and to design the information in such a way that it facilitates the accomplishment of the assigned or desired tasks which – in the long run – helps the user attain defined goals.
The resulting perfect deal: the expectations of the user of the information meet the expectations of the provider of the information and vice versa.
To design and optimize the information, the designer determines what is critical for a user by observations (in both controlled laboratory situations and in real world situations), by interviewing, and by investigations. Variations of these processes are undertaken depending on the use of the information.
Considering the need to get a clear picture of the most relevant user requirements, the information designer often develops scenarios in which virtual "personas" (= prototype users) perform the tasks the information is supposed to facilitate. (15)

By doing this the designer becomes critical about the benchmarks which determine whether a design would be considered successful or not.
Being aware that tasks never exist in an isolated manner, that there is always a before and after, the information designer also considers the activity chains in which the tasks are performed. Adding a time factor to scenario building, e.g. by introducing the concept of "The Journey", developed by Michael Wolff and Wally Olins (16), it becomes evident that sequences of tasks/activities must be perceived as processes towards goals of users/customers within user-orientated task systems.

Step three: Making a proposal
After steps one and two, the information designer is ready to make a proposal which outlines the work/results to be done/achieved, which technical and legal standards should apply, and how much time and money this would cost.
This, of course, should result in an assignment.

Step four: Designing the information
Practical competence, Six Thinking Hats, and Intuition

As steps one and two were made in a rough mode to enable the designer to compose a proposal they now need to be repeated in "quality mode". Only thereafter the designer is ready to start with designing the information which comprises "the defining, planning, and shaping of the contents of the message and the environments in which it is presented".
Information usually manifests itself in the form of visuals: no wonder many think that information design equals visualization and that the education of information designers equals the education of graphic designers. This is certainly a good guess which needs to be extended into other fields of sensory perception and complemented with elements of professional writing, cognitive and social sciences, knowledge of related legislation and standards, information and communication technologies, and business management – to name just the most important themes. They all constitute the practical competence of an information designer.
When the defining, planning, and shaping of the contents of a message and the environments in which it is presented, with the intention of satisfying the information needs of the intended recipients gets exceedingly complex the information designer applies the method of the Six Thinking Hats, "an extremely simple thinking technique based directly on the phenomenon of context, … providing a tangible way of translating intention into performance."
The foremost value of the Six Thinking Hats is that of defined role-playing. "The hats allow us to think and say things that we could not otherwise think and say without risking our egos" says Edward de Bono, author of the Six Thinking Hats. "There is the white hat for attention to pure and neutral data. There is the red hat to allow the input of intuition and feeling without any need for justification. There is the black hat of the logical negative, which is caution and points out why something cannot be done. There is the yellow hat of the logical positive, which focuses on the benefits and feasibility. For creative thinking there is the green hat, which calls for new ideas and further alternatives. Finally there is the blue hat for process control, which looks not at the subject but at the thinking about the subject (meta-cognition)." (17, 18)
Methods like this help a lot but cannot guarantee a positive outcome. L. Lohr, quoted by R. Pettersson, says: "Too many factors influence design. That is why it is considered an art as well as a science." (19, 20).

Step five: Evaluating the effectiveness of the designed information
To make sure that the objective of task-related knowledge transfer is attained information designers have a strong interest in determining whether their information products yield the desired effect. They know how to utilize insights of cognitive psychology, to conduct user interviews, to apply evaluation methods, and how to interpret results with regard to set benchmarks.

Step six: Refining and implementing the information
Based on insights gained through testing information designers optimize their designs to content, consider alternatives or identify obstacles which they overcome through a change of directions. They subsequently assist in the implementation of the design(s) and, if needed, stand by for adjustments and modifications in response to changing requirements.

Information design: more than a problem solving activity
When social competence really becomes an issue

If information impacted problems or unspecific information needs of "users" are in the forefront of an information design challenge the subject matter requiring familiarization/analysis, design and evaluation will be much wider – and deeper too.
Information designers who take an effort in finding out which contribution information (design) could make to the improvement of an unsatisfactory situation will be able to develop innovative concepts beyond "problem-solving" [problem-solving, according to Edward de Bono, "only get us back to where we were before"]. (21)
Such concepts always require a technically feasible match of interests of "problem owners", information providers and information users. On a global scale they might range from the need to successfully fight HIV/AIDS or to reduce global warming. On a more moderate scale they might include a strategy to improve living conditions in a given region. Here the social dimension of information design core competencies, Politics, Position, Parsimony, Politeness, Performance, defined by David Sless as the five Ps (five essential principles), really become an issue. (22)

Interactivity as a prerequisite of successful information systems

Interactivity has to do not only with operating machines and/or accessing task-relevant information on a screen. It is basically independent of the question of which of the media at hand should address to which senses.
Optimizing knowledge transfer is enforced through rapid and often unforeseeable change of technologies, legislation, user preferences and responsibilities affecting tasks to be done. Because of this, traditional evaluation procedures sometimes meet a problem. Whenever they would need to be repeatedly applied, concerns of time and money come in. To facilitate the timely adaptation of the information, it therefore pays to set up interfaces in an inviting, interactive way. Thus user feed-back will be generated, enabling constant actualization of the information and its infrastructure.
By putting effort into the optimization of the design of information the information designer familiarizes himself/herself with the given subject matter. He/she endeavors to optimize information by considering the cognitive and the technical requirements so that the designed information appeals to the senses of the addressees and can readily be understood. He/she engages in an iterative process of designing and evaluating and takes precautions to enable the continuous actualization of the information through inviting interactive interfaces.

This justifies the conclusion
that what really challenges information designers
is the design of information systems.

18) user

learnt from: Peter Simlinger

Information designers always have an user in mind, as information design empowers people to attain its goals

read more: www.iiid.net

first things first

19) personas

learnt from: Alan Cooper

The Personas concept provides us with a precise way of thinking and communicating about how users behave, how they think, what they wish to accomplish and why. Based on the behaviours and motivations of real people Personas represent composite archetypes. Furthermore we can develop an understanding of users goals in specific contexts..

read more: The Inmates are Running the Asylum

20) journey

learnt from: Wolff Olins

The concept of „The Journey“ encapsulates the various points of contact which take place sequentially between an organisation and those with whom it comes into contact. The Journey can show how and where design can make its impact on an organisation. It can equally well be applied to exemplify and analyse the steps users/guests/citizens take and the decisions they need to make.

read more: Wolff Olins: design management

21) universal design

learnt from: Peter Barker

If your leg is broken, you are impaired,
if therefore you can´t walk you are disabled,
if it is impossible to enter the café, because of the stairs,
you are handicapped.
It is the society, causing the disadvantage.

read more: www.rnib.org.uk

22) this can make you handicapped

learnt from: daily life

It is about being temporarily handicapped, caused not only by an accident, but by a heavy suitcase, a baby buggy or a dog, – in worst case all together.

read more: norway …

23) making it functional is not enough

learnt from: Daniele Marano

Information design is not allowed to stop at functionality.
Serving our needs for aesthetics is equally relevant, as it is
an expression of respect towards impairness.
The question „does it feel beautiful“ is as important
as „does it work“,
and sometimes even more.

read more: xxx

24) visual impaired is not the same as being blind

learnt from: Michael Wolf

Being visually Impaired does not automatically mean being blind.
In fact only 4% of visually impaired people are definitely blind.
The other 96% may be affected by deseases like glaucoma, eye cataract, pigmentary retinopathy, macular degeneration, diabetic retinopathygraphics or shortsighted-ness.
Especially these partially sighted people can be served by graphics and excellent all-senses-information design to guarantee accessibility and mobility. Remember: 70-75 per cent of the information we receive is given throuhgh eyesight.

read more: www.signdesignsociety.co.uk

25) it is about contrast

learnt from: Laura Badaluco

red	orange	pink	green	turquois	yellow
brown	white	blue	velvet	black	sand

change your colours in greyscale mode to recheck contrast

read more: www.signdesignsociety.co.uk

70	40	40	55	30	15
80	0	70	50	100	40

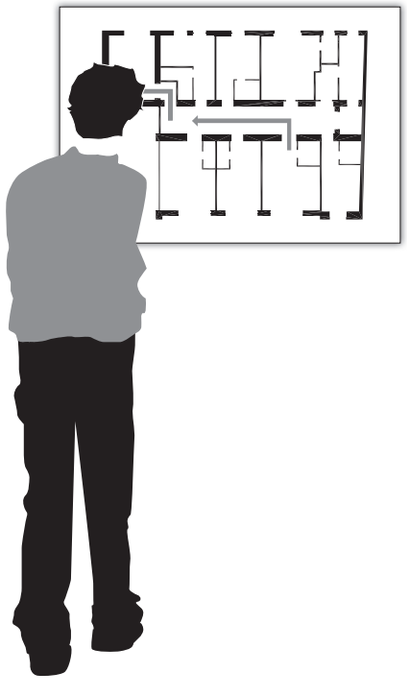
greyscale in %

26) it is design for people not being familiar with a situation

outcome of: workshop at design per in Treviso 2012

this does not mean that it is design for stupid people.
In fact design has to encourage the user getting smarter,
better orientated, more independant and autonom.

read more: www.aiap.it



27-30) Key theories from psychology on behaviour change - where can information designers contribute?

learnt from: Karen Stanbridge

This paper runs through three popular theories of behaviour change from psychology, and highlights the key areas within these where information designers might have something to contribute to behaviour change campaigns.

read more: www.iiidspace.net/greenid.net

In the battle for sustainability, changing behaviours is a stark necessity. Technological improvements cannot keep up with the demand for energy use or other dwindling resources. To be 'greener' we have to change our travel patterns, household energy use, waste generation and other such behaviours. Some people are more willing to change than others but regardless of this, changes are needed and we need help to make them.
Psychology has a wealth of experience and research knowledge for encouraging all types of behaviour change. A key part of any behaviour change campaign is information, although it is certainly not the only vital ingredient (Stern, 2011). People need information on what to change, why they should change, and how to do it. Information designers' skill is in conveying information in a clear, engaging and understandable way. There is clearly a need for information design in behaviour change campaigns, but what areas provide the best opportunity for its contribution?
This paper runs briefly through three of the most widely used psychology theories relating to behaviour change. These are the Theory of Planned Behaviour (TPB), the Stages of Change Model, and Social Dilemmas. These theories have each been chosen because of their popularity, widespread use, and because each of them calls for slightly di!erent contributions and uses of information. In the paper I will highlight areas where these theories suggest there could be useful contributions from information designers. In the process I also hope to better equip information designers with some understanding of what psychologists are trying to achieve through information use, and to include guidance on some of the pitfalls to avoid that are identified in these theories.

Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (Fishbein and Ajzen, 1980) is one of the most widely used behaviour models, largely because the limited number of criteria involved makes it straightforward in use.

A person's intended behaviour (behavioural intention) is predicted by by three things: the individual's attitudes towards the outcomes they expect from the behaviour; the individual's beliefs about what others will think if they complete the behaviour (subjective norm); and finally, their beliefs about whether they are able to complete the behaviour or not (perceived behavioural control). According to the model, changes to any of these three predictors could result in changes to behavioural intention, and so result in behaviour change.
Attitude change (the first element leading to a behavioural intention) has received a lot of attention in both research and in practise, including from designers. Useful summaries exist (Wood, 2000) and so it is not necessary to discuss it in detail here. It is however useful to remind ourselves that research has shown that attitudes are actually o"en weak predictors of behaviour (Eagly and Chaiken, 1995). Despite this, attitude change is vitally important for creating public acceptability for policies (e.g. laws, charges), which can then encourage change in behaviour.
People are social animals and are generally more likely to behave in ways they think others, particularly their peers, would approve of$ this is behaving in accordance with social norms (the second element leading to a behavioural intention). People can take cues from many places about what is normal for 'people like me' or 'people who are important to me' in a given situation. These cues can o"en be visual. It is therefore important to ensure the behaviour being promoted appears normal to the target audience in any images selected.

Promoting cycling as a mode of travel using only pictures of lycra-clad professionals, or even images of children cycling, is unlikely to make non-cycling adults feel it would be normal for them, or something their peers would approve of. Images are a strong way of creating associations; so showing people cyclists dressed normally but safely, rather than all in lycra perpetuates it as a normal activity.

Perceived behavioural control (the third element of the model) is explicitly about whether the individual believes they can complete the behaviour or not, rather than an objective view of whether they can actually do it. If someone believes they cannot, they are unlikely to try, or form any intention to do so. This is an area where clear and well-designed information has the potential for substantial impact. Recent work by Song and Schwarz (2010) demonstrated that participants predicted a task would take less time and e!ort to complete if it was described in a clearer font and 'looked easier'. If it is easy to read, it is perceived as easy to do. This suggests that information presentation not only has an e!ect on usability, but also on perceived task di#culty, which could be equated with perceived behavioural control.

The two di!erent public transport journey information examples in Figures 2 and 3 both give information about the same journey, and are both common information types someone planning a public transport journey might obtain. If a person is unfamiliar with using public transport they might be put o! by the large array of numbers in Figure 2 (which is a perfectly useful timetable for those with experience). The information in Figure 3 appears easier, giving the impression that using public transport is not so di#cult. The level of complexity of information provided is likely to have a significant impact on responses to behaviour change initiatives. Any information involved is likely to be new and unfamiliar to the recipient so it will be important to make the information look straightforward to encourage a positive response to change.
Examination of the Theory of Planned Behaviour has outlined a number of areas where information design can contribute to behaviour change. It is however not always the case that a person will behave how they intend to, as specified in the model. Many things could prevent a plan being acted on, for example habits, constraints of the situation, or emotional reactions. This can be considered a weakness in the model as it only focuses on intended, planned behaviour. Nevertheless it is a popular theory and widely used to structure behaviour change campaigns.

Stages of Change model
The Stages of Change model by Prochaska and Diclemente (1982) outlines a series of steps that a person goes though when changing from one stable behaviour to another. It was developed in the field of health promotion and is particularly useful because it identifies that di!erent cognitive processes occur with changes at each step. The model can be used to help us understand the di!erent approaches to behaviour change, including di!erent information requirements, that will be most e!ective for people to move between di!erent stages of the model.
The model's stages, and also examples of di!erent approaches required for changing between them, are shown in Figure 4. The model starts where a person is not thinking about changing the behaviour in question at all. To move from this first precontemplation stage requires raising awareness of the problem with their current behaviour through education and attitude change campaigns. To move from thinking about changing to actually preparing for it requires specific motivators to be identified.

These could be cost or time savings, or environmental considerations etc. To move from preparation into action requires practical information about what changes to make and how to achieve them, e.g. public transport timetables and cycle route information for someone wanting to reduce their car use. It might also require skill development such as learning how to ride a bike safely. To then convert any attempts or trials an individual initiates to become a maintained, new behaviour, the individual would probably benefit from feedback on their behaviour and rewards, through either self monitoring, time for reflection, or discussion of new ideas. This feedback might need to evolve and continue in order to avoid relapse into the previous behaviour.

The Stages of Change Model encourages us to think about the mindset of the person receiving the information or behaviour change intervention, in particular, have they thought about changing or not? This is crucial because according to the theory provision of practical, 'how to' information to people at earlier stages would be likely to be ignored, as recipients wouldn't be ready or interested. Conversely, repeatedly telling people of the need to change, when they are already willing to change, but without any 'how' information, is likely to produce annoyance and be counterproductive.
Knowing that specific information is required at di!erent stages of change can be extremely valuable for information designers wishing to contribute to behaviour change campaigns. This can lead to segmentation of the audience into di!erent groups with di!erent information needs or wants. Segmentation can be achieved using simple questionnaire statements to identify the stage an individual is at. Alternatively a staged campaign might be considered, starting with problem awareness-raising first and, over time, progressing to practical information. Whatever the chosen approach, the Stages of Change Model highlights the di!erent types of needs of di!erent people.

Social Dilemmas
The final theory to be discussed here is that of Social Dilemmas (Hardin, 1968; Messick, 1983). The theory examines the choices people make when faced with choosing between behaving in the long-term interests of the group they are part of, or in their own short-term interests. It is a way of framing a problem situation and examining a simplified version of the underlying problem structure. Research has shown that people react in di!erent ways depending on how the situation is presented to them, so this is another area where information design has potential contributions to make.
One example situation is the choice between car and public transport. For each individual, travelling by private car is quicker and more convenient than using the bus. However, if everyone chooses to drive themselves rather than travel by bus then the roads will soon be very congested, and car travel slower than if some or all had chosen the bus. Similar examples include air pollution, energy usage and global resources. All these situations include a finite resource that can be used up by some individuals and which impacts on others.
In these situations an individual's behaviour depends on their beliefs about how others will behave. Research has found two key factors that a!ect these beliefs. Firstly, the more uncertain the situation, the more people are likely to overestimate the resource available and act in an individualistic manner. Therefore reducing uncertainty by specifying boundaries and informing people of the 'facts' of the situation makes cooperative behaviour more likely. Existing solutions to these type of problems o"en involve passing laws to enforce behaviours or influencing the amount behaviours cost individuals as this is the only proven way to reduce uncertainty about how others in a large group are likely to behave.

The second highly influential factor is group size. In larger groups people o"en feel less responsible for the common good and believe that their contribution does not matter. Consequently with problems at a global scale individuals feel only a limited obligation to cooperate. A crucial challenge here is to persuade people that their behaviour can have an e!ect. Reducing the scale by dividing a large scale dilemma into smaller more manageable parts might be an e!ective tool in raising cooperation. Emphasising local impacts rather than global ones would be one way to achieve this. Information designers could be involved with finding ways to show the relevance of individuals' behaviour, such as reducing energy use and other sustainable behaviours, to large scale problems.

Conclusions

This paper has examined three popular theories of behaviour from psychology and highlighted areas where information design could have a positive contribution to make to behaviour change for sustainability. It is important that information designers wishing to contribute to this area have some awareness of the theories of behaviour change that have developed within psychology in order to give their contributions the most value. People do not behave how one would expect in response to information, and psychology has experience and theory to explain why this might be, and allow designers to anticipate responses. There are many more relevant theories than can be discussed in a short paper. However I have highlighted the specific need for including illustrations that are relevant, ensuring new information looks simple rather than overwhelming, taking account of the audience's receptiveness and need for information, and breaking down global problems so that they seem relevant locally.

31) Five W

learnt from: common sense

keep asking:
where and
when should
what happen
why does
who benefit
how easy

read more: everywhere

5w

32) evidence of real life

learnt from: Stefan Hampl

design does not take place on your computer,
research not on paper, nor in statistics
exploring a topic needs real life feedback,
people involved and affected and their stories
common basic devices give wonderful evidence
of the variety are essential for documentation

read more: uups

33) contextual interviews

learnt from: Julia Landsiedl

contextual interviews are conducted in the environment, or context, in which the user or process of interest occur. This ethographic technique allows interviewers (2! one is talking and the other one observing) to both observe and probe the behaviour they are interested in.

read more: Mark Stckdorn: This is service design thinking

34) Reserach Super Low Tech

learnt from: Julia Landsiedl

but with a systematics, even for small numbers of investigation cases standaridation helps to gather comparable and consistent data.

read more: Mark Stickdorn: This is service design thinking

35) mobile ethnography

learnt from: Julia Landsiedl and Mark Stickdorn

mobile ethnography is research that due to technical equipment takes place indepenently of geography, this means that the researcher is not present in person. For instance: the view of a working place, or used tools. The materials produced are in effect digital sticky notes.

read more: Mark Stickdorn: This is service design thinking

pictogram: daxx/thenounproject

36) a day in the life

learnt from: Mark Stickdorn

a day ina life contextualises a users´s interactions,
allowing a great deal of background information.
uncovering people´s everyday problems and solutions
provides a holistic view on drivers and motivations

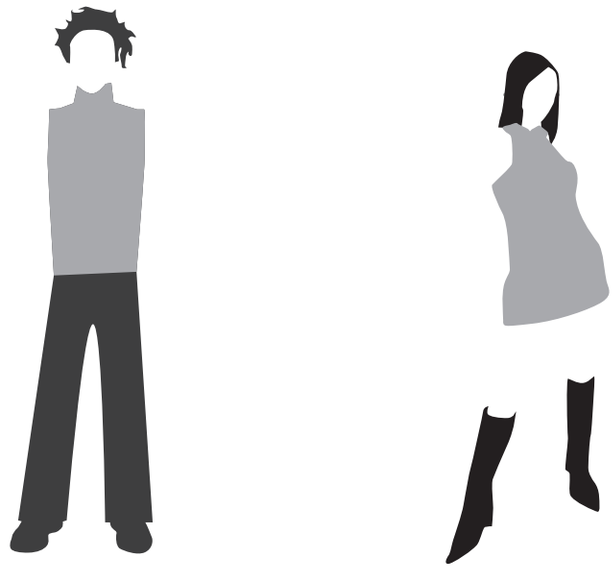
read more: Mark Stickdorn: This is service design thinking

clocks: poppi

37) gaps in communication´s context

learnt from: Konrad Lorenz

What is thought - is not always said;
what is said - is not always heard;
what is heard - is not always understood;
what is understood - is not always agreed;
what is agreed - is not always concerned;
what is concerned - is not always done;
what is done - is not always done again and
what is done is often sometimes far from being accepted.



38) statistics context

learnt from: Veronika Egger

Statistics is the study of the collection, organization, analysis, interpretation, and presentation of data.

For information designers it is far more:
any single figure represents an individual life story.

39-41) Sustainability what?

learnt from: Michael B. Hardt

We should stop calling styling design.

read more: www.iiidspace.net/greenid.net

We are living in a time of well sounding empty word bubbles. In their attempt to make the normal look special, the advertisement industry exaggerates in inventing new or misusing meaningful terms and o"en crosses the line between truth and lie. The on- o! switch on a co!ee machine mutates into the manual power supply device, a shop becomes a mega store and a stylish product is declared as design innovation. This bad habit of violating the language spreads like a disease and the term sustainability became one of the latest victims.

What for heaven's sake is sustainable design?
What is sustainability, what is design?

Are we talking about designed sustainability or design being sustainable? I want to try to find an answer. Let us start with the term sustainability:
Every organism on this planet is egoistic. In front it digs a hole and on its back it leaves a heap without giving a thought about eco- friendly sustainable behaviour. This would be a disaster, if every single organism would not be an integrated woven nod within a sustainable network, simplified expressed as link of a food chain. We call this network nature. The space between the nods describes the limits of each organism. The human race was the first and so far only species which successfully managed to expand the limited space by designing an artificial network called culture.

Culture is the artificially designed supply circle in addition to nature. It is a survival strategy within nature. The permanent fight of survival happened in respect with nature, never against nature. The powerful means of technology mankind happened to invent especially in the last 300 years gave the false idea that the human race dominates nature. This had the devastating side e!ect that the cultural circle increasingly detached from the natural circle. But culture is a suicidal strategy without nature.
Now we are le" with two options:

1.
The human species returns to sustainable behaviour and reconnects the artificial with the natural circle.

2.
As the artificial circle cannot survive without the natural circle, it will collapse and the human race will die out like the dinosaurs.
In a conflict between nature and culture, nature will always win. Nature can live without culture, culture cannot live without nature.
Ancient societies were fully aware of the connection between the natural and the cultural circle. „Ars imitatur Naturam", a quote designated to Aristotle, never meant that a painter should copy nature. Art in the ancient understanding did not mean fine art but artificially produced. Imitate did not mean copy, but to take as example. In other words: Culture has to respect and take nature as archetype.
And the lord GOD took the man and placed him into the Garden of Eden, to cultivate and sustain it.

There is no old religion without a warning that it is a sin to disrespect nature. Today it would make sense to read the story of Adam and Eve in Paradise the other way round: Not the first but the last human beings live in paradise. We plugged the forbidden fruit and now we are about to be kicked out.
We like to blame politicians for a lack of visionary activity, but in case of sustainability we are simply not fair. The United Nations have been dealing with it since dec- ades and there are several resolutions about those matters such as Resolution 42/187 from 1986 where sustainability is defined:
Sustainable development is development that meets the needs of the present without compromising the abilities of future generations to meet their own needs.

The Brundtland Report
also clearly defines the requirements for planning processes:

- Integrating environmental, social and economic requirements in every planning process.
- Accepting global responsibility for environmental e!ects outside areas of jurisdiction.
- Decoupling economic growth from environmental degradation.
- Intergenerational equity$ providing future generations with the same environmental potential as presently exists.
- Preventing irreversible longterm damage to ecosystems and human health.
- Ensuring environmental adaptability and resilience$ maintaining and enhancing the adaptive capacity of the environmental system.
- Ensuring distribution equity$ avoiding unfair or high environmental costs on vulnerable populations.

We have to admit that even 25 years later only in very rare and exceptional cases not even one of those requirements is fulfilled in the average design process. This in fact permits the question, if design, the way we practice it today, is design at all.

So what is design?
The Nobel laureate Herbert Simon defined in 1969 correspondingly:
Design devises courses of action aimed at changing existing situations into preferred ones.
Following this definition were the first courses of action to create the cultural circle actions of design. Today the entirely marketing oriented design process pockets the design and steals from the designer the ability to think and act visionary along an ethically funded system of values.

Design degenerated to become pure styling to serve the madness of the new and superficial vanity.

Marketing per se is ethical blind.
How can those who claim to be able to see accept the points of view of the blind? Design is to plan the inner function of the outer form, or, like John Hesket defines: Design is to design the design of a design.
Most of what is called design today is nothing but styling of the outer form. The clearest indicator for this misunderstanding of design is the fact that aesthetics are totally overruling ethics.

So what is sustainable design?

There is no such thing as sustainable design.
If design is a course of action to transfer existing situations into preferred ones and an unsustainable situation can never be a preferred situation , design is sustainable per se. The term sustainable design implements the existence of unsustainable design.

There is no such thing as unsustainable design.
If it is not sustainable, it is notdesign. it is in best case styling.
So sustainable design is a nonsense term.

We should stop talking about sustainable design but make sure that we act sustainably in order to make sure that we really design and don't just style ordecorate. We should stop calling styling design.

If we can design our way into di"culty, we can design our way out.
JOHN THACKARA, in the Bubble, 2005

42) media and content: C + C

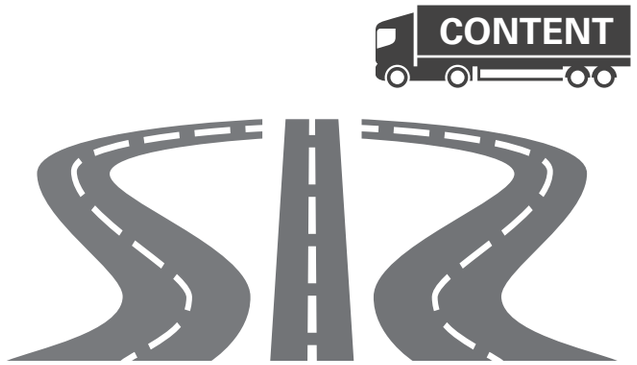
learnt from: Can Karaüz

before working on content and its shaping, it is necessary to recheck the availability of various channels to the intented recipient,
the best informations design fails if there are no capacities/channels to access and reach the user

second the content has to fit to the given capacities

read more: uups

pictograms: sergey krivoy, nicolas hue and simon child/ thenounproject



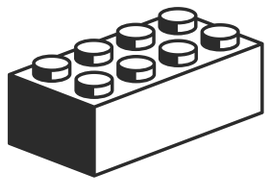
43) media and content: like lego

learnt from: Soichiro Fukutake

use what exists to create what is to be
its easier to rely on existing channels than install
additional new media

read more: uups

pictograms: sergey krivoy, nicolas hue and simon child / thenounproject



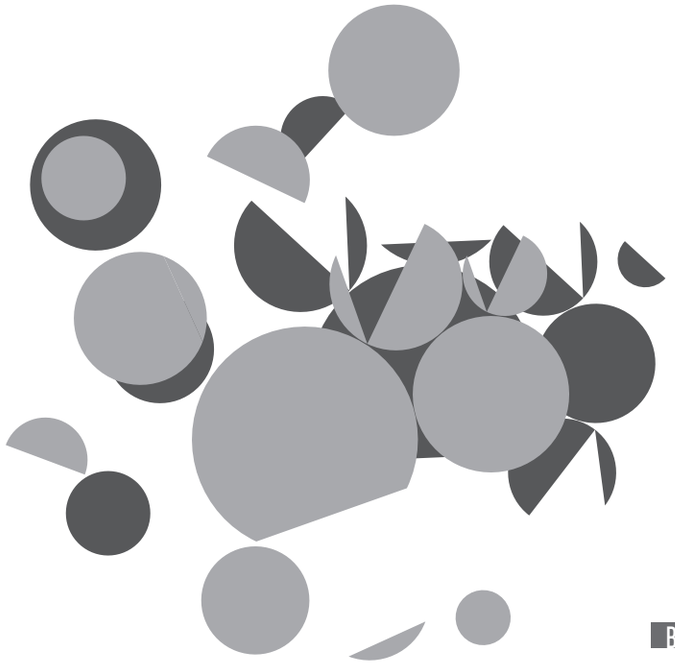
44) media and content: avoid clutter

learnt from: Marty Neumeier

too may competing channels
too many media messages
too many elements per message
no need to add anotherone

read more: Marty Neumeier / the brand gap / zag

pictograms: jan trillana / thenounproject



45) media and content: 0,2 seconds

learnt from: Masayoshi Kodaira

it is said, that we look only 0,2 seconds on any displayed information.

read more: school of design

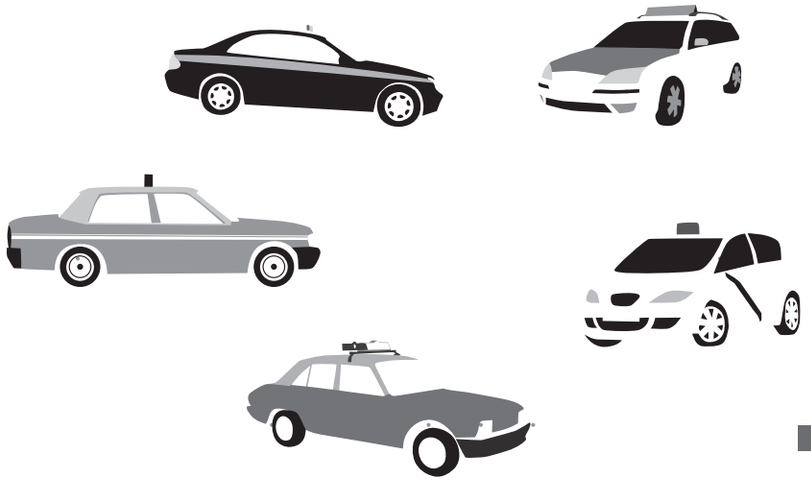
0,2

46) organizing data: LATCH

learnt from: Richard Saul Wurman

Taxis worlwide (information) could be organized by:
Location (city: geographical or spatial references),
Alphabet (car brand: alphabetical sequence),
Time (when built chronological sequence),
Category (compact, seda, van: similarity relatedness) and
Hierachy (fuel consumption: magnitude; highest to lowest, best to worse).

read more: in his book „Information Anxiety“



47) quality of content: gigo

learnt from: Charles Babbage / George Fuechsel

garbage in – garbage out
a rule of thumb stating that when faulty data are fed into a computer, the information that emerges will also be faulty.
also true for information design and a reminder to only use excellent, re-checked data

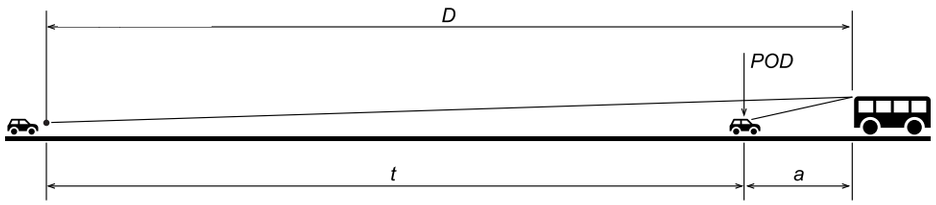
read more: William Lidwell: Universal Principles of Design

48) quality of content: research

learnt from: Stefan Egger / Peter Simlinger

information design is based on research and methods,
combined with a mandatory re-check,
whether it is useful and beneficial for the intended recipient

read more: www.iiid.net > library: Road Traffic Typeface „Tern“ Test report

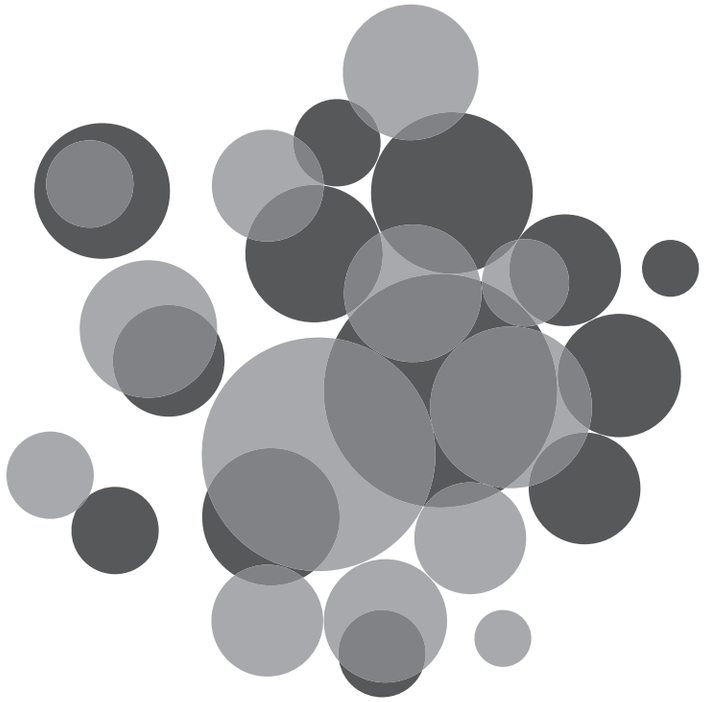


49) simplicity: remove

learnt from: John Maeda

The simplest way to achieve simplicity is through thoughtful reduction.
When in doubt, just remove. But be careful of what you remove.
When it is possible to reduce a system's functionality
without significant penalty, true simplification is realized.

read more: in his book „Simplicity"

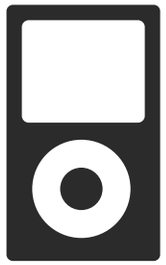


50) simplicity: SHE: S: shrink

learnt from: John Maeda

Any design that incorporates lightness and thinness conveys the impression of being smaller, lesser, and humbler.
Pity gives way to respect when much more value is delivered than originally expected.

read more: in his book „Simplicity“



51) simplicity: SHE: H: hide

learnt from: John Maeda

But there might be no better example of the hide method than today's computer interfaces. The menu bar at the top hides the functionality of the application. And the other three sides of the screen contain other click-to-reveal menus and palettes that seem to multiply as the computer increases in power. The computer has an infinite amount of capacity to hide in order to create the illusion of simplicity

read more: in his book „Simplicity"

pictograms: alejandro valdiva / thenounproject

52) simplicity: SHE: E: embody

learnt from: John Maeda

Lessen what you can and conceal everything else without losing the sense of inherent value. embody-ing a greater sense of quality through enhanced materials and the quality of presentation is an important subtle counterbalance to shrink-ing and hideing the directly understood aspects of a message.

read more: in his book „Simplicity“

pictograms: alex sheyn and pavel nikandrov / thenounproject

53) SIMPLICITY: the one

learnt from: John Maeda

Simplicity is about subtracting the obvious,
and adding the meaningful.

read more: in his book „Simplicity“

54) make people understand the context

learnt from: Angela Morelli

information design is not about delivering a solution, but providing tools, making people learn to understand and know the context

read more: countless publications

55) content in slide presentation

learnt from: Per Mollerup

1. Avoid too much text.
2. Avoid too small text.
3. Don’t read aloud from the screen.
4. Avoid too short reading time.
5. Avoid uncoordinated text and talk.
6. Avoid flying circus.
7. Avoid knickknacks.

read more: countless publications

pictograms: hakan yalcin / thenounproject

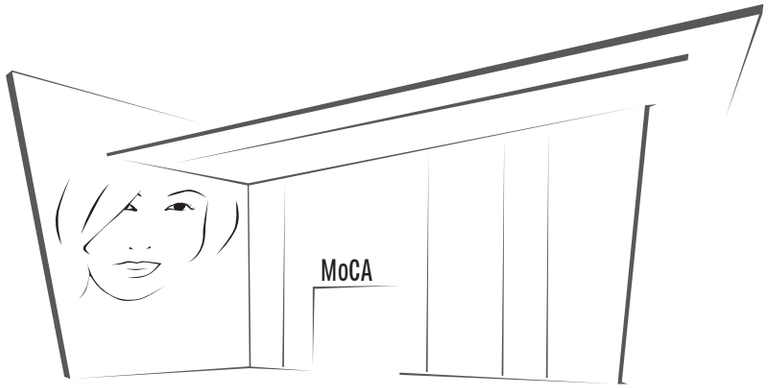
56) metaphorical environments

learnt from: Graziella Tonfoni

presenting information on occasions as conferences, open-houses, exhibitions or others can face various conditions.
having in mind metaphorical environments linked to specific recipients behaviour like train stations, shopping malls or art exhibitions, communication and content presentation might be appropriate designed

read more: Graziella Tonfoni: information design

pictograms: hakan yalcin / thenounproject



57) aesthetics

learnt from: Marty Neumeier, Victor Papanek

aisthetikos meaning „esthetic, sensitive, sentient“
aisthanomai meaning „I perceive, feel, sense“

M.N.: Aesthetics gives us a toolbox for beautiful execution.
V.P.: Aesthetics is one of the most important toolsin our repertory as designer.

read more: M.N.: The designful company; V.P.: Design for the real world

αἰσθητικός

αἰσθάνομαι

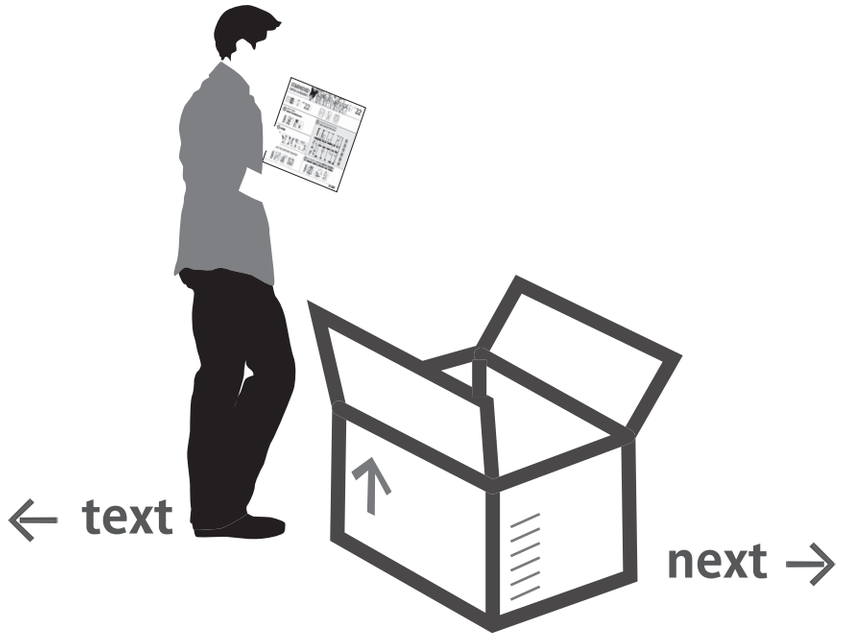
58) information design and branding

learnt from: Yasuo Yokota

A brand is a person´s gut feeling about a product, a service or an organisation (Marty Neumeier). The main touchpoints are not advertising and promotion but signage, behaviour, forms, packaging, manuals, tags, performance of service and many other issues, contributing to the user´s experience. Contacts in daliy life and use.

read more: Japan Sign Design Association

pictogram: thenounproject



59) information design and architecture

learnt from: Matthew Frederick

architecture is a a very close friend of information design,
many issues of information design could already be solved by excellent architecture and many learnings of architecture are relevant. for instance: summer people are 22 inches wide. winter people are 24 inches wide.

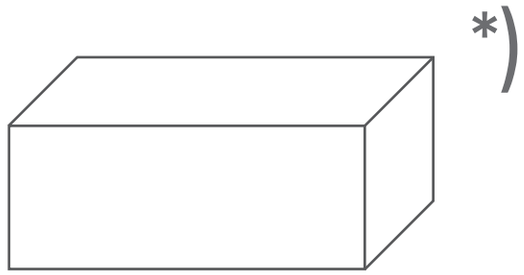
read more: 101 things I learned in architecture school

60) The visual Gestalt principles

learnt from: Kurt Koffka, Max Wertheimer and Wolfgang Köhler

Law of Proximity
Law of Similarity
Law of Closure
Law of Symmetry
Law of Common Fate
Law of Continuity
Law of Good Gestalt
Law of Past Experience *) we know: this is a box

read more: D. Brett King, Michael Wertheimer: Max Wertheimer and Gestalt Theory



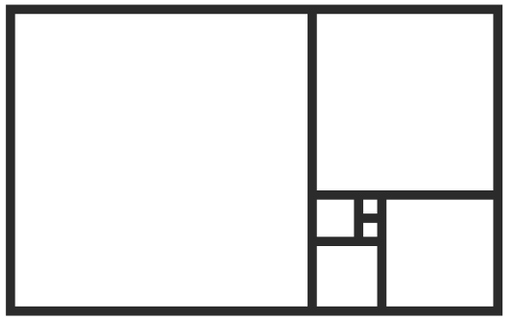
61) Fibonacci and Golden ratio

learnt from: school

The Fibonacci sequence is named after Leonardo of Pisa, who was known as Fibonacci, together with the golden ratio, 1.61803399, it may be helpful developing appealing compositions

read more: Fibonacci's 1202 book Liber Abaci,
William Lidwell: Universal Principles of Design

pictogram: conor cesa / thenounproject



0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...

62) Freeze-Flight-Fight-Forfeit

learnt from: US Airways flight 1549, on January-15, 2009

Human responses to any acute stress,
not only at airplane incidents are:

Freeze: a state of hyperawareness
Flight: a state of fear and panic in order to escape
Fight: a state of desperation and agreesion
Freeze: a state of „playing dead“

Especially in life-critical situations information design must provide tools
appropriately to anticipated diminished performance capabilities

read more: William Lidwell / The universal principles of design

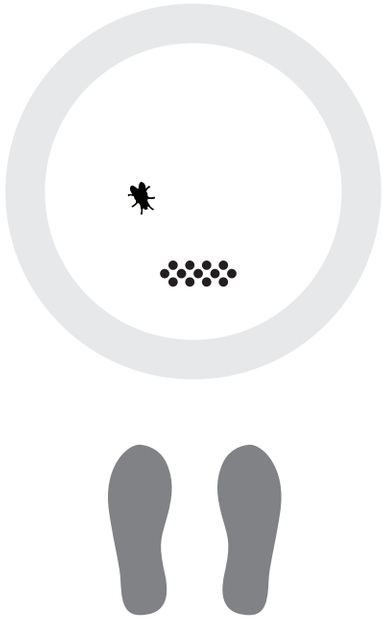
63) nudge

learnt from: men´s restrooms

(to reduce the cleaning burden)

Modify behaviour without restricting options
or significantly changing incentives.

read more: William Lidwell / The universal principles of design



64) priming

learnt from: William Lidwell, Kritina Holden, Jill Butler

The activation of specific concepts in memory
for the purpose of influencing subsequent behaviours.

For instance:
starring eyes to contribute money
nice words to behave plitely
positive imagery for better feedback

read more: William Lidwell / The universal principles of design

65) wabi sabi

learnt from: nature

Todd Dimeny:
A reminder that nothing in life, or design, is perfect. The very essence of life, work, art and nature is free of right angles, and chaos reigns supreme. Beauty is in the cracks, the worn spots, and the imperfect lines.

read more: Wabi-Sabi for Artists, Designers, Poets & Philosophers
Leonard Koren

pictogram: rachel fisher / thenounproject

66) word jumbling

learnt from: a myth

Aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae.The rset can be a toatl mses and you can sitll raed it wouthit porbelm.Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but lokos at the wrod as a wlohe.

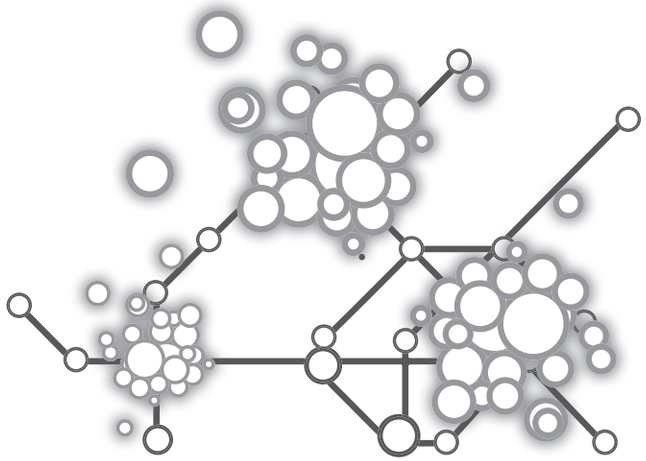
read more: can´t help,
but informations designers should know the phenomenon

67) maps

learnt from: geography and architecture

maps, roadmaps, 2D compositions and any kind of spatial visualisation are helpful tools for analyses, discovering interdependicies, exploring opportunities, developing strategies or just giving a simple overview

read more: Stickdorn/Schneider: This is service design thinking



68) legible city concept

learnt from: Tim Fendley / AIG

A concept to enhance people's understanding and experience of the city.
Distance is time.
In a local context, a north-up map does not help.

read more: http://www.tfl.gov.uk/assets/downloads/businessandpartners/yellow-book.pdf

69) The hidden logic

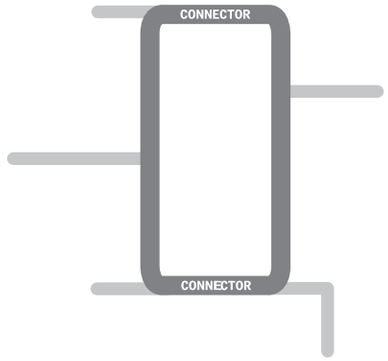
learnt from: David Gibson

One or more of these strategies can provide the underlying logic of the wayfinding system. These four illustrations show how to analyze the circulation and massing of a large and complex urban place and diagram its wayfinding.

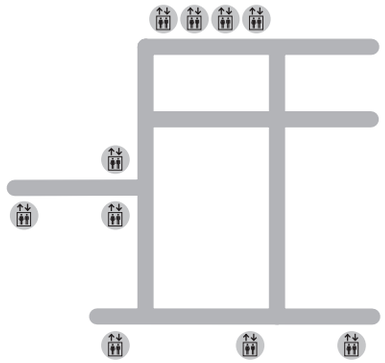
Applied example of an hospital:
- The Connector is a central loop that links all of the hospital buildings.
- The color coded Districts are the buildings or clusters of destinations.
- The elevators are wayfinding Landmarks for vertical circulation.
- The principal corridors function like Streets, knitting together the locality.

read more: David Gibson / The Wayfinding Handbook

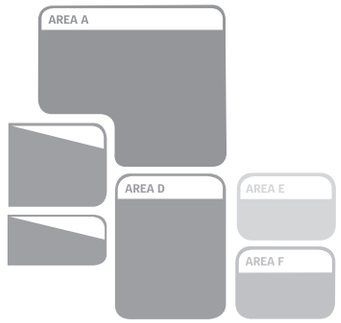
pictogram: david gibson / twotwelve



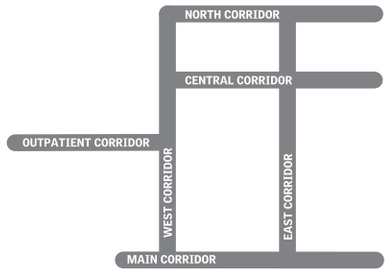
Connector



Landmarks



Districts



Streets

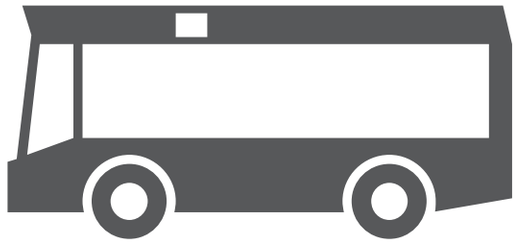
70) Public transports

learnt from: Giuseppe Attoma

x

read more: David Gibson / The Wayfinding Handbook

pictogram: david gibson / twotwelve

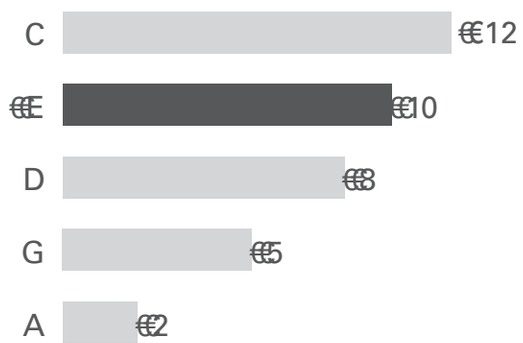


71) Charts (1)

learnt from: Dona M. Wong

x

read more: Dona M. Wong
The Wall Street Journal Guide to Information Graphics



72) Charts (2)

learnt from: Dona M. Wong

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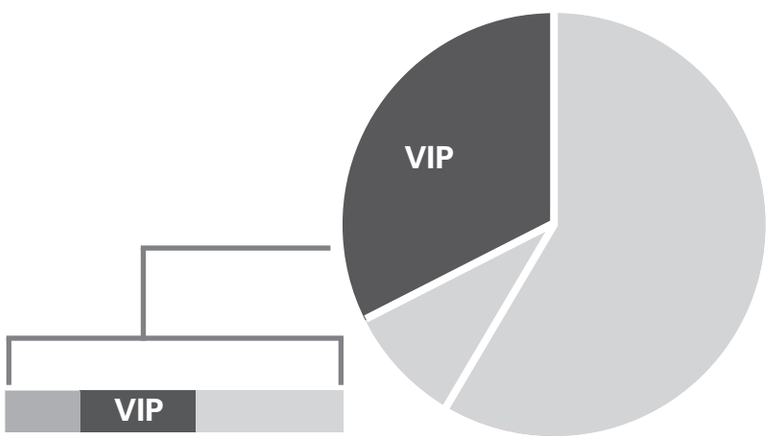
read more: Dona M. Wong
The Wall Street Journal Guide to Information Graphics

pictogram: david gibson / twotwelve



73) useful tools: DIAGRAMS

learnt from: Travis Kochel

FF Chartwell is a tool for easily creating graphs, disguised as a font. It utilizes OpenType to interpret and visualize the data. The data also remains editable, allowing for painless updates.

read more: http://tktype.com

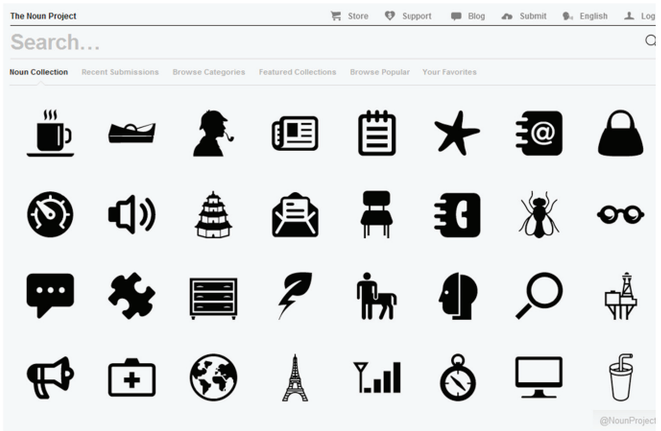
74) useful tools: ICONS for EVERYTHING

learnt from: THENOUNPROJECT

The Noun Project is a platform empowering the community to build a global visual language that everyone can understand.

Visual communication is incredibly powerful. Symbols have the ability to transcend cultural and language barriers and deliver concise information effortlessly and instantaneously. For the first time, this image-based system of communication is being combined with technology to create a social language that unites the world.

read more: thenounproject.com



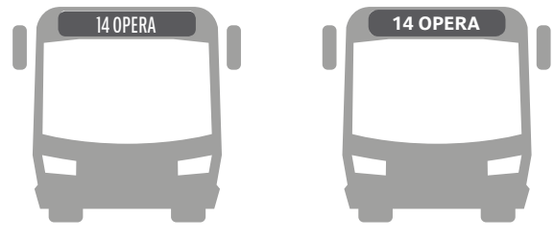
75) Prototyping

learnt from: bad experience

The use of simplified and incomplete models or mockups of a design provides designers with key insight into real-world design requirements and gives a method to visualize, evaluate, learn and improve design.
Finally it simply avoids the designer from very bad surprises.
A: nice on the screen, but not readable in practice, B: works

read more: William Lidwell / The universal principles of design

pictogram: david waschbüsch, alejandro valdiva / thenounproject



A) 14 OPERA

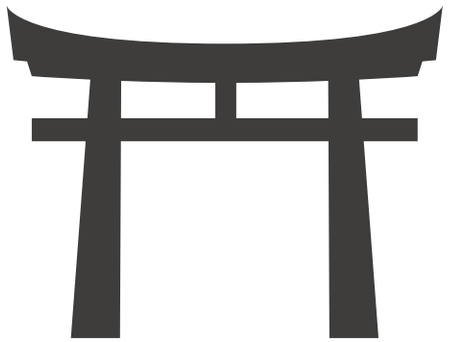
B) 14 OPERA

76) Do and re-do in collaboration

learnt from: our customers

Shinto shrines in Japan are rebuild ervery 20 years.
No design is meant for eternity.
It´s the concept which is relevant,
the final execution is always flexibel and adoptable.
Best in collaboration with user and patron.

read more: William Lidwell / The universal principles of design



白

WHITE learnt from: Hara Kenya

"White" symbolizing simplicity and subtlety, which prompted Hara Kenya to associate the color white with emptiness and – in visual communication – the ability to listen. read more: Hara Kenya / White

MOST IMPORTANT

learnt from: AXIS magazine

design is
not a product
not a service
not a process

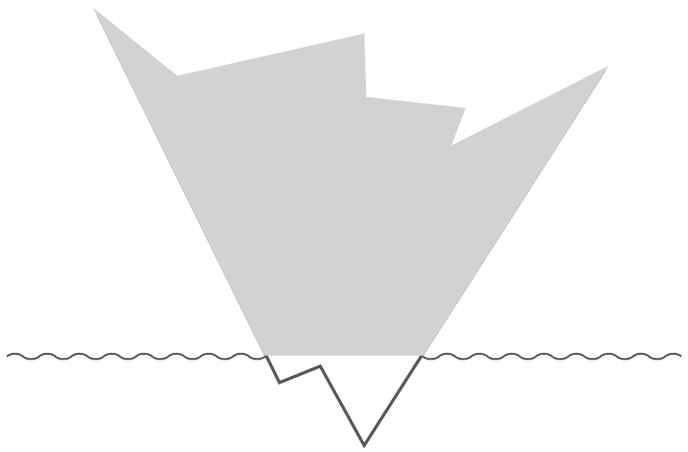
but a medium, a platform
to bring people together

and - according to Herbert Simon, in Sciences of the Artificial -
„transformation of existing conditions into preferred ones

read more: AXIS magazine, advanced design research

REMEMBER the Iceberg

upside-down it shows a fascinating field
for smart and appealing engagements



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