Preface

Every book is superior to a CD-ROM or Web site.

For example, the pleasure of holding a large, illustrated volume in your hands, paging through it, feeling the exquisite paper, perceiving the quality of the photos and the printing, losing yourself in browsing through, reading and paging—these are the qualities of sensual and intellectual perception that only a well-made book can offer.

Books are extremely flexible; you can read them everywhere—on the train, in bed, in the bathtub. You don't need any electrical outlet or other contrivance. Books are more or less inexpensive and form the basis of our culture. Who could imagine that there would ever come a time when there were no more books?

Every CD-ROM or Web site is superior to a book.

Web sites can be very up-to-date. An author types in text at his PC, sends this text per FTP to a server, and the text can be read worldwide immediately.

A multimedia encyclopedia provides pieces of information that are always only a mouse click away from each other. It can present complex structures clearly and enable the user to display details as needed. Simulations, virtual worlds, complex databases, and the combination not only of time-independent media (text, pictures), but also of time-dependent media (sound, video) offer new possibilities that previously could not be implemented in books. Nothing is as flexible as multimedia systems—do we need books in the future?

This comparison makes it clear that there is no »either…or« where old and new media are concerned; rather, we must consider »both…as well as.« Printed media have their strengths and weaknesses—digital media have theirs also. It is worthwhile to use the strengths and reduce the weaknesses in order to combine new and old media sensibly and appropriately.

This book concerns itself with showing how you can use the strengths of digital media. In so doing, the type of presentation and organization of information that is transported with the help of multimedia CD-ROMs and Web sites plays an essential role. This book would like to help creators of multimedia systems to design digital media appropriately and in a manner oriented to the intended target group. It presents backgrounds and contexts, clarifies them with the help of authentic examples, and en-

courages the further development of the language of digital media.

This book is based on the findings of the psychology of perception and learning, ergonomics, communications theory, imagery research, semiotics, and aesthetics. Examples help to illustrate these findings. Nevertheless, this book cannot be, and does not intend to be, a »cookbook.« It does not intend consciously to postulate any fixed rules, for inflexible rules are the end of all creativity. Of course, the book does indicate guidelines within which a screen designer should move in order to design his products to be user-friendly and of high quality. Nevertheless, we should have the courage to experiment, to try unusual things, and to go against the rules deliberately, provided that we know those rules already.

We find ourselves just at the beginning of the age of digital information and we are just beginning to learn how to deal with the technologies that have entered our lives in recent years. There will still be many experiments, standards will crystallize, and »gurus« will step onto the stage and then disappear again. The speed with which all this happens before our eyes is breathtaking and fascinating. Where will the journey lead?

This book, now being published in its third German edition, is appearing simultaneously in English language for the first time. Over the years it has grown, has become more extensive, and now, in addition to numerous updates, it contains new chapters on the topic of »Barrier-Free Web Pages« and »Intercultural Screen Design.« The chapter that formerly was called »Motivation« was renamed very consciously to »Emotion« and refers to metacommunicational factors that will continue to gain importance.

I hope that the readers of this book will be inspired to advance the language of digital and interactive media.

I would be very happy to receive letters from readers, including opinions and suggestions.

Frank Thissen
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1 Basics

This chapter explains the term Screen Design and describes its elements. The chapter distinguishes the specific features of multimedia products from those of printed media.

1.1 Tasks of Screen Design 18
1.2 Elements of Screen Design 20
1.3 More Space Than Book 22
1.4 History of Hypertext 26
1.5 User Oriented Design 32
1.6 Personas 34
1.7 Which Product? 42
1.8 Basics Checklist 46

1.1 Tasks of Screen Design

»The design is the domain in which the interaction between user and product is structured in order to make effective actions possible.« Gui Bonsiepe

The **term design** is frequently used exclusively in the sense that it is associated with the beautification of products. According to this view, the task of screen design would be merely to lend an aesthetically pleasing appearance to multimedia products.

This book uses an expanded concept of design that interprets screen design primarily as **interface design**. The interface is the connecting link between a tool and the person who is using this tool to do something. The interface helps to operate the tool. An example should clarify this concept: at the left, you see an illustration of a tea bag. In this example, the actual interface of the tea bag is the small green tag. It accomplishes two tasks: on the one hand, it indicates the type of tea; on the other hand—and this is much more important—it facilitates the use of the bag considerably. Have you ever tried to fish a tagless tea bag out of hot water? Then you know how important the tag is. The tag has no effect on the quality of the tea, but it helps considerably in using the tea bag.

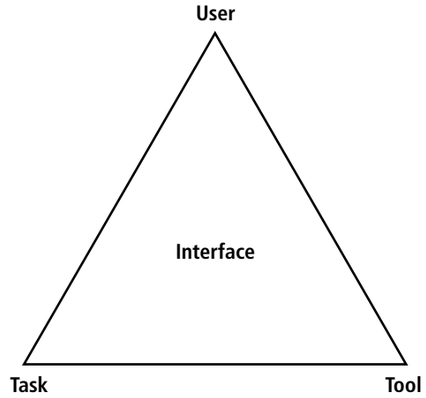
The design theoretician Gui Bonsiepe uses his **ontological design diagram** to describe the modern concept of design, which comprehends the interface as the central category of design. This diagram is made up of the following three elements:

- The user
- The task to be handled
- The tool that is required to handle the task

These three areas are connected to each other by the interface. The »interface is the central area to which the designer directs his attention. The design of the interface arranges the procedural space of the person who is using the products. The interface reveals the tool-like characteristics of objects and the informational content of data. The interface turns objects into products. The interface turns data into understandable information.« (Bonsiepe 1996, 20)

The data of a multimedia information system in and of themselves initially have no practical purpose. Only when specific prerequisites have been fulfilled can data become information for the user, be linked to the pervious knowledge of the user, and expand his knowledge:

- The user must be able to recognize and evaluate the relevance of the data for himself.
- The user must be able to relate the data to his previous knowledge.
- The data must be edited in such a way that the user can perceive them, assimilate them, and process them.
- The data must be structured in some sort of form. The user must be able to trace this structure, that is, understand it intuitively.
- The system that provides the data (for example, a digital information system) must react in an appropriate manner to the actions of the user—that is, according to his expectations.

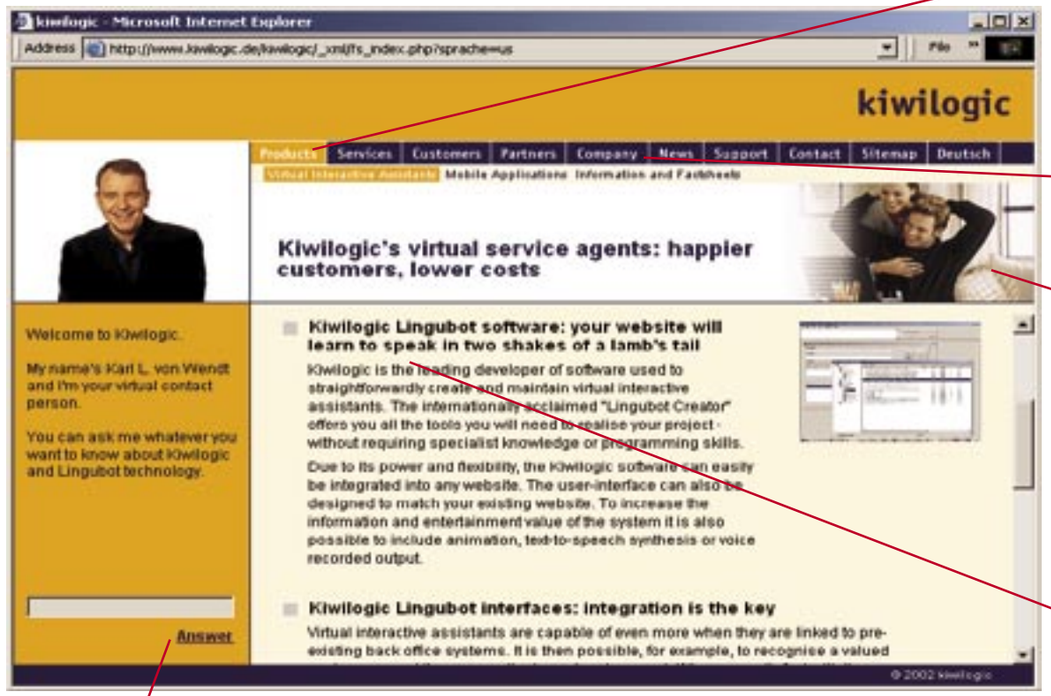


According to this scheme, **screen design** takes on an essential, a central significance. Only when the data can be used effectively do they obtain a value for the user. This is true both for information systems and for tutorials or advertising products. A solid screen design without relevant, useful data is superfluous game playing. Data without an effective screen design have no value for the user because he cannot access them appropriately and therefore it is much harder to use the data.

Both elements—data and interface—must complement each other; they achieve a value for the user only in their combination.

1.2 Elements of Screen Design

Effective screen design is distinguished by the functional and aesthetic-harmonic interplay of various elements. The elements introduced here are not always present in their pure function. There are also elements that serve more than one function, as is frequently the case with those elements that are used for both orientation and navigation.



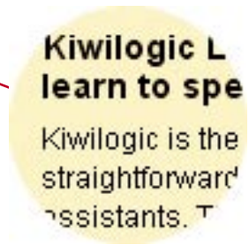
Interaction elements
cause the computer to react to the activities of the user. In this case, a virtual advisor answers the entries of the user.

Screen layout elements
organize the structure of a screen page, relate the contents to each other, and are responsible for a harmonious overall picture. In this example, it is not only the division of the screen contents into various areas, but also the color design.

Orientation elements
allow the user to find his way in hypertext. Using these elements, the user can detect where he is.

Navigation elements
help the user to move around in a multimedia space and to »jump« selectively to specific areas. In the example, the main areas of the site are listed.

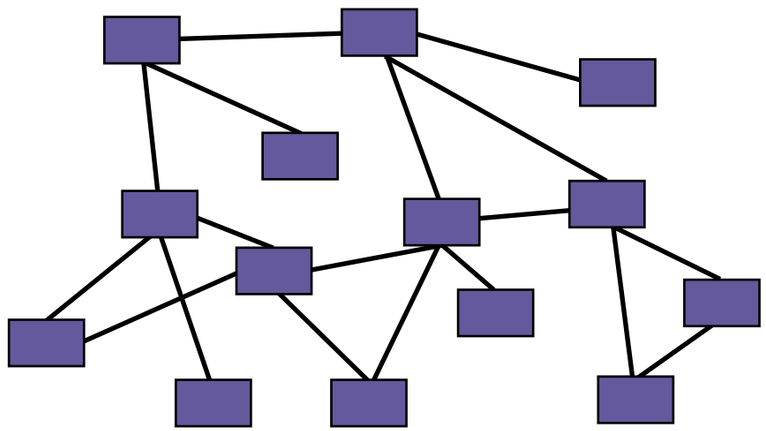
Emotion elements
appeal to the feelings of the user; they make him curious and invite him to continue to work with the system.



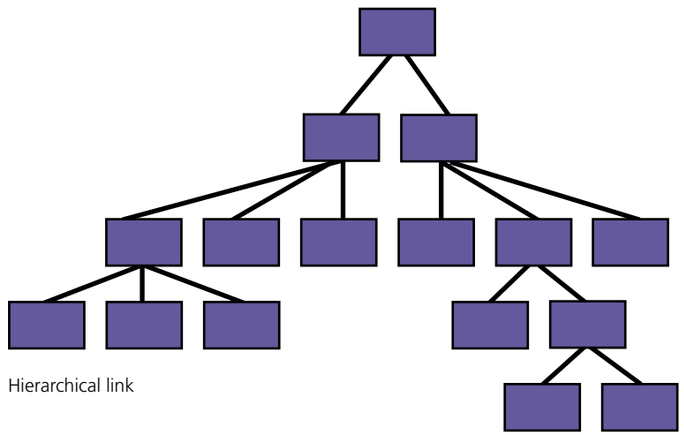
Content elements
are the edited data, that is, the information, in the form of text, pictures, sounds, videos, or animation.

1.3 More Space Than Book

»… entering a space without any linear limitations or restrictions«
Michael Joyce



Network-type link



Hierarchical link

Multimedia is more than just the combination of various media such as text, sound, pictures, video, and animation. Multimedia is a new form of presentation and representation of information with the help of a computer. In this form, the information is indeed coded in various media; what is actually new is the fact that a multimedia system presents its information in small units that are linked to each other in a variety of ways. Documents and links form what is called hypertext.

The basic elements of **hypertext** are nodes, edges, and anchors.

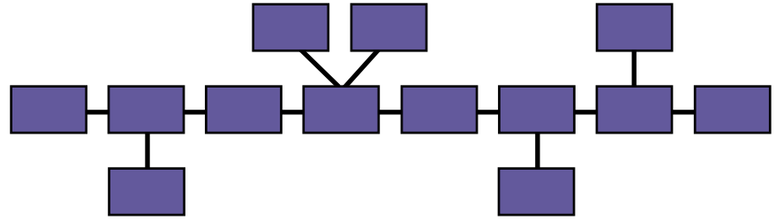
- A **node** is an autonomous, isolated unit that presents specific information with the help of various media.
- An **edge** (hyperlink) connects two units of information (the nodes) to each other. Nodes can have more than one edge.
- **Anchors** are the highlighted points of a node that mark the connection to another node and from which an edge originates.

Complex hypertext systems have a large number of nodes, edges and, anchors. The type of networking of the information unit can be more or less complex and varied.

Along this network, a user can open up a topic associatively, following his interests, by clicking on the anchors that interest him and in so doing trigger new anchors. Of course, this situation assumes that the author has generated the hypertext in such a manner that it includes the interests and associations of the target audience.

The occasional assertion that, in contrast to hypertext, a printed information medium, such as a book, presents information linearly certainly is not entirely justified. We seldom read even books linearly, from the first page to the last—except for fictional literature; instead, we skip around, follow references and footnotes, or select specific individual chapters. An encyclopedia provides an extreme example. Nevertheless, a book has a certain sequence determined by the author in which it presents information. This sequence has been chosen consciously and reflects the decisions of the author as to the sequence of perception of information that he considers logical. This book that you are reading initially explains the elements of screen design in an overview before presenting them in individual detail in later chapters.

Linear link



Linear link with branches

In hypertext, there is not a prescribed **sequence**; rather, there are different possibilities for the user to discover the information. Hypertext is made up of networks whose use is determined to a great extent by the particular user and, because of this, these networks can be quite varied. The combination of information units (nodes) that the user makes based on previous knowledge, interests, or curiosity creates quite varied meanings and associations in the user's perception.

»*The **basic idea of hypertext** is that informal units, in which text, graphics, or audio visual aids represent objects and procedures of the relevant section of the world, can be manipulated flexibly by means of links. Manipulation here means primarily that the user can easily place the hypertext units into new contexts that create themselves in that they pursue possible links that appear suitable to them. In this process, the units themselves generally remain unchanged. In the future, this idea of manipulation will (have to) be expanded greatly through dialogic principle. Based on this principle, the system can, in and of itself, intervene actively in the dialog with suggestions in order to reduce the complexity that confronts users in working with large volumes of hypertext. If too much is offered and the consequences of choice become too complicated, creativity can easily turn into chaos. Here, hypertext must provide techniques to support mechanically the human information-processing capability, which is limited in a certain respect. Manipulation and cooperative dialog are therefore essential principles of hypertext.*« (Kuhlen 1991, 13)

Not only the node documents, but also the edges are significant. They make it possible to represent logical or argumentative associations by means of linking units of information.

These characteristics can be aptly described by the term **hyperspace**. A hypertext system represents a space of meaning that the user can open up in various ways.

For the author of multimedia products, this means that he is not the author of a book; rather, he is an **information architect**. His task is to provide various paths through the hyperspace information system and to prepare the individual areas (units of information) and the information that belongs to them. This preparation must enable different users, who have different previous knowledge, expectations, and ways of doing things, to orient themselves and quickly find what they want. For this reason, the information architect should offer orientation aids and indicate navigation paths that put the individual areas into the proper light and make it possible to open up a particular depth of information. In addition, the architect should design the space in an appealing manner and should invite the visitor to visit, awaken his interest, support and motivate him.

1.4 History of Hypertext

The idea of putting information into modules and relating these modules to each other is not new. It goes back to the late 18th century, when the natural sciences were becoming more and more dominant and the age of the enlightenment appeared with the demand that the old shackles of immaturity be removed and that knowledge be made available to all people. What for a long time could only be implemented in a very limited way has become possible today through the World Wide Web. However, standards and quality control are still lacking and the Net presently looks more like a wild shrub as opposed to a structured weave.

In 1751, the French *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers* (**Encyclopedia**, or Systematic Dictionary of the Sciences, the Arts, and Commerce) appeared, published by Denis Diderot and Jean Le Rond d'Alembert in collaboration with Charles de Secondat Montesquieu, Voltaire, and Jean-Jacques Rousseau. The work appeared with the claim of presenting the current knowledge of the time and clarifying the relationship of the sciences to each other by means of a complex reference system. The authors noted textual relationships to other articles by means of symbolic markings in front of the terms that are explained in more detail in another article.

Up until the year 1772, 28 volumes appeared with a total of 60,000 articles.


ENCYCLOPÉDIE,
OU
DICTIONNAIRE RAISONNÉ
DES SCIENCES,
DES ARTS ET DES MÉTIERS,
PAR UNE SOCIÉTÉ DE GENS DE LETTRES.
TOME PREMIER.
A PARIS,
M. DCC. LI

1751

In an article entitled *As We My Think*, **Vannevar Bush**, advisor to President Roosevelt and co-inventor of the analog computer, proposed a machine by the name of MEMEX that was intended to make it possible to store huge amounts of information in the form of notes and to access this information associatively. The users were supposed to have the capability of marking a few connections between passages of text that appeared to them to be contextually related.

»Consider a future device for individual use, which is a sort of mechanized private file and library. It needs a name, and, to coin one at random, memex will do. A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.« Vannevar Bush

»Wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified. The lawyer has at his touch the associated opinions and decisions of his whole experience, and of the experience of friends and authorities. The patent attorney has on call the millions of issued patents, with familiar trails to every point of his client's interest. The physician, puzzled by a patient's reactions, strikes the trail established in studying an earlier similar case, and runs rapidly through analogous case histories, with side references to the classics for the pertinent anatomy and histology. The chemist, struggling with the synthesis of an organic compound, has all the chemical literature before him in his laboratory, with trails following the analogies of compounds, and side trails to their physical and chemical behavior. The historian, with a vast chronological account of a people, parallels it with a skip trail which stops only on the salient items, and can follow at any time contemporary trails which lead him all over civilization at a particular epoch. There is a new profession of trail blazers, those who find delight in the task of establishing useful trails through the enormous mass of the common record. The inheritance from the master becomes, not only his additions to the world's record, but for his disciples the entire scaffolding by which they were erected.« Vannevar Bush, As We May Think

1945

In 1962, **Douglas Engelbart** started his project Augment at the Stanford Research Institute. As part of this project, the **NLS (oN-Line System)** was developed, an initial hypertext that consisted of documents, reports, notes, and letters that were linked to each other and were stored in a commonly accessible »diary.« At a conference in 1968, the system was presented with over 100,000 entries.

Ted Nelson designed his hypertext system **Xanadu®** and used the words »hypertext« and »hypermedia« for the first time. Xanadu® was intended to be a universal archive for all sorts of information, a worldwide network of text, graphics, and pictures. The system was never implemented in the form in which it was originally intended. However, parts of the system have been marketed by the Xanadu Operating Company since 1990. Presently, Nelson is working on the New Xanadu® Structure for the Web xanadu.com/nxu and his Cosmicbook xanadu.com/cosmicbook.

1962 1965

The **Architecture Machine Group** of MIT presented their **Aspen Movie Map**, the first hypermedia videodisc. It contains photographs of all the streets in the city of Aspen, Colorado, USA. These pictures were taken from trucks with four cameras aimed at a 90^0 angle in four different directions. New pictures were taken every three meters. The relevant pictures are linked to each other on the disc. The user can »click his way through« the streets of the city and have the feeling that he is driving through the city.

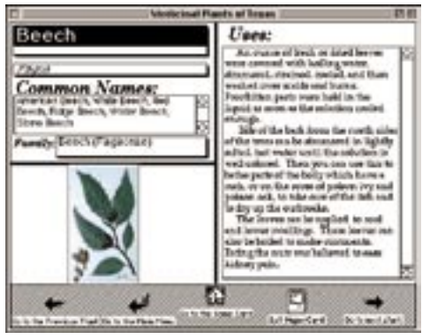
Available since 1983 is the commercial **Knowledge Management System (KMS)**, a system that manages a large variety of hypertext nodes under UNIX on local area networks. It is a further development of the ZOG research system that was developed at the Carnegie-Mellon University starting in 1972.

The structure of KMS is hierarchical, and you can expand it any way you want with the help of a scripting language. The speed with which the called nodes are displayed is impressive.

Hyperties is a hypertext system developed by **Ben Shneiderman** in 1983 at the University of Maryland. Since 1987, the system has been marketed and developed further by Cognetics Corporation. The system gives a very Spartan impression in that it has been purposely designed to be simple and is geared toward easy operation. Users are advised to set up only a few links, and there are only unidirectional links.

1978 1983

The **HyperCard** program by **Bill Atkinson** was very popular and widely disseminated; between 1987 and 1992, it was included with every Macintosh computer free of charge. It replaced the program Guide that appeared in 1986. HyperCard is based on the index card metaphor, that is, virtual cards are filled out and placed in a stack. They contain text, pictures, video, sound, and links to other cards. Although a beginner could operate it intuitively, it offered the expert many capabilities by means of its programming language HyperTalk.



In 1987, the **Association for Computing Machinery (ACM)** held an **initial conference** on the topic of Hypertext at the University of North Carolina. The interest was so great that not all registrants could be accepted and the conference was overcrowded.

1987

The British information scientist **Tim Berners-Lee** published his *Proposal* at the European Center for Nuclear Research CERN in Switzerland and in so doing founded the **World Wide Web**. Originally, his intention was to promote the communication of the CERN scientists and to overcome limitations that were caused by different computer and operating systems as well as different data formats. Through the document text markup language HTML and the development of powerful browsers, the WWW has experienced a rapid dissemination since the beginning of the 1990s. Thousands of Web pages are added daily and expand the weave of (valuable and useless) information. The Web is hypertext—but hypertext that proliferates chaotically and is presently still relatively confusing, unstructured, and hardly user-friendly.

1989

1.5 User Oriented Design

»If you don't know who you're talking to, how the heck do you know what to say?«
Nick Usborne

The **basis of every screen design** is the question as to what the user of the product wants to do with the product and how he will do it. Clarification of this question makes the difference between success and failure.

Even the best content and assertions, the most innovative game, and the most effective tutorial will be well received only if they speak the language of the user; that is, if they appeal to him emotionally, they consider his previous knowledge and experience, and they offer him something useful or interesting. The »language« that the user understands depends on many factors: life experiences, cultural surroundings, gender, age, and occupation. A game that a fifteen-year-old school child finds fascinating seems silly to a fifty-year-old engineer. A reference work on anatomy on CD can be extremely helpful to a medical student and still be just about useless to a lawyer. A Web site of the British comedy group Monty Python meets with enthusiasm from those who like British humor; for people who do not like this type of humor, the site is incomprehensible and objectionable. It is impossible for you to appeal to everyone at the same time; instead, you must decide specifically for whom your product is to be used, whose language you want to speak, and with whom you will be communicating. Only then can you decide what the goal of your multimedia product should be, what it should contain, and how you will structure and design it. The more precisely and concretely you view your **target group** and can put yourself in their place, the more successful you will be in reaching them. For this reason it is also advisable to include members of this target group very early in your planning and to test the first prototypes with them.

It is worthwhile to pay close attention to the target group and to expend time and energy to focus on the audience precisely.

The following material presents an extremely effective method for developing a user-oriented screen design.

What's the point of designing for a specific target group? Why make the effort to define specific target groups? After all, our Web material is supposed to address all interested parties. So we have to construct material for everyone and not be too specific, otherwise we exclude users.

These objections are justified because Web pages can be called up worldwide without limitation. The only problem is, that when you offer »something for everyone,« ultimately you don't reach anyone or address anyone appropriately.

The American ergonomics specialist and expert in interaction design, Alan Cooper, uses an automobile as an example to demonstrate very clearly the problem with trying to offer a product that is suitable for everyone.

Different people need different cars because they want to achieve very different goals with their cars. While safety and comfort are especially important to Marge as a mother, Jim needs lots of room, and Alesandro would like to impress his girlfriend. One car for everyone wouldn't please any one of these people and they definitely wouldn't buy it.

1.6 Personas

»***The Elastic User***
Although satifying the user is our goal, the term 'user' causes trouble. Its imprecision makes it unusable, like trying to remove someone's appendix with a chainsaw. We need a more precise design tool.

Whenever I hear the phrase 'the user', it sounds to me like 'the elastic user'. The elastic user must bend and stretch and adapt to the needs of the moment. However, our goal is to design software that will bend and stretch and adapt to the user's needs. […] In our design process, we never refer to the 'user'. Instead, we refer to a very special individual: a persona.«
Alan Cooper

In order to solve the problem of non-specific target groups, I would like to introduce a method here that Alan Cooper developed for defining and designing user interfaces: the so-called **personas concept**. This methodology is very effective and can be applied extremely well to material that appears on the Web.

The point of departure here is a precise description of the users and their goals. Cooper calls this **goal-directed design**.

To achieve this, you define so-called personas. A persona is not a real person, but the archetype of a user; the persona is a cliché, the generalization of a specific user group.

Personas are defined by the things that they want to achieve (their goals). In the definition, they become very lifelike and graphic; they are a great help to the developer in putting himself in the position of the potential user and in communicating about the user in the development team. In this respect, we are no longer talking about the target group of the »new male customers between 35 and 50,« but about the persona Michael Miller and his goals, expectations, and traits.

To ensure that the persona appears vividly to all the participants in the project, it is important to give the persona a name and a »face.« Describe the concrete goals of the persona and typical scenarios in which the persona will use what you have to offer.

In this manner, you can design material very effectively that meets very accurately the requirements of this persona—and in so doing, those of the real user.

Overview: the Procedure for Defining Personas

1. In a brainstorming session with the development team (without any evaluation), collect all relevant personas initially.
   Alan Cooper warns against using real people as personas. Also, personas should not be used more than once. Each project should develop its own personas.
2. The next step is to select from the total of all defined personas the so-called primary personas. These are the personas that will help us to design our Web material. It is better to concentrate on a few personas (no more than four) than to try to accommodate too many. You will find that among the personas whom you have defined, there will be those who have similar goals or who are very similar to other personas. Sometimes personas that are very similar to each other can be combined into a new persona.
3. For each of the personas that you select, create a »dossier« or profile, in which »personal data« are outlined. Give each persona a »face« (picture) and a name.
4. In addition, write in the dossier the most important goals that the persona has in relation to the use of your product.
5. Put yourself in the place of each of these personas; put on their »glasses« and try approaching your product (for example, the Web site) with this view of things. As the persona, ask questions about the product.
6. Structure the questions and define the answers to them.
7. Determine how you want to address the persona, that is, which form of address is appropriate. In so doing, keep in mind the emotional components, too.
8. Only now should you begin to think about the informational material to be used in your presentation to the persona and about the structure of your site and the general layout.

»Personas are not real people, but they represent them throughout the design process. They are hypothetical archetypes of actual users.« Alan Cooper

A Real-Life Example

As an example of the procedure to develop a Web site with the help of personas, I would like to use the Web material of the Information Design course of study at our College of Media (in Stuttgart, Germany). This course of study—which so far is the only one of its kind in Germany—deals with the contextual and formal preparation of information for the most varied media.

In an initial brainstorming session, a group of students in this course of study defined all possible personas for the Web material. Included were the following personas:

- A schoolgirl who is looking for a course of study that is interesting and full of promise for the future
- The personnel manager of a company who is looking for trainees for the Corporate Communications department
- An employee of an advertising agency who is looking for work-study trainees
- A student in the Information Design course of study who is looking for information on the current semester
- A communications designer who would like to further his education in the area of information design
- A professor in a similar course of study who is looking for a professional exchange with colleagues
- A candidate who would like to apply for a newly posted position as professor in the course of study at the college and now is looking for information for the application
- A journalist who is doing research on the field of information design in order to write an article on the subject of information design.

On the basis of this list, the various personas were compared to each other and divided into groups. Then, in long discussions, the group decided to limit itself to four personas for the Web material:

- The personnel manager who had a lot in common with the employee from the advertising agency
- The communications designer who would like to further his education in the area of information design
- The student in the course of study
- The interested schoolgirl.

In order to further clarify the procedure, I will limit myself in the following discussion to the *schoolgirl* persona. Of course, this procedure must be followed for all relevant personas.

On the opposite page you see the dossier of the persona Maria Schneider.

Maria represents the users who at the end of their high school studies are looking for a suitable college or university. In order to allow her to become especially concrete and »lifelike,« her dossier contains a few personal data that clarify her living situation.

Maria's most important goals are listed below. Here it is important not to confuse the goals of the personas with the tasks of the personas. By carrying out tasks, we want to achieve certain goals. For example, no one wants to take a language course; instead, people want to learn a foreign language. Attending a language course is the task which helps to achieve the goal of language competency.

Maria's goals are to be able to have an interesting profession that is associated with social prestige and an adequate salary. When she visits our Web site, she will want to know if she can indeed achieve these goals with the course of study offered. More is involved here than just a few facts. The point is to decide whether and how she can achieve her personal goals.

Maria Schneider

- Age: 18
- Has a sister who is three years younger
- Is a senior at an academic high school in Chicago
- Special subjects: English and art
- Still lives at home
- Has a boyfriend
- Likes to surf the WWW
- Has a positive attitude toward computers, but does not see herself as an expert or computer freak
- Uses her cell phone intensively
- Likes to go out with her girlfriends
- Has many interests
- Considers herself to be creative
- Is interested in fashion
- Takes photographs in her spare time

Maria's goals:

- Find the profession of her dreams: one that is interesting, creative, and varied
- Get a degree in an interesting field of study that is varied and practically oriented
- Do something creative

»The more specific we make our personas, the more effective they are as design tools. […] Giving the persona a name is one of the most important parts of successfully defining one. A persona without a name is simply not useful. Without a name, a persona will never be a concrete individual in anyone´s mind.« Alan Cooper

»Personas are defined by their goals. Goals, of course, are defined by their personas. […] Goals are the reason why we perform tasks. […] Goals are not the same things as tasks. A goal is an end condition, whereas a task is an intermediate process needed to achieve the goal. It is very important not to confuse tasks with goals, but it is easy to mix them up. […] Designing for tasks instead of goals is one of the main causes of frustrating and ineffective interaction. Asking, 'What are the user's goals?' lets us see through the confusion and create more appropriate and satisfactory design.« Alan Cooper

On the basis of the persona description of Maria Schneider and the definition of her goals, it is now possible to generate questions with which she will approach the Web material. Here the effectiveness of the method will become clear once again. Initially, it is not material from the viewpoint of the provider (that is, the college) that is made available; instead, a question is first defined that will find its answer afterwards only in the information provided by the college.

What might interest Maria? Naturally, the things that the course of study has to offer and the reputation of the college. However, at the same time, she also has completely different, much more personal questions that relate to her own situation. Maria also wants to know whether the course of study will suit her, whether she will like it, whether she can handle it at all, what awaits her when she begins her course of study, whether she will feel at home at the college, etc.

In addition, she wants to know in practical terms how such a course of study goes, how much work it involves, whether finding an apartment in the city could be a problem, and what there is to do there in her free time.

Putting oneself into the persona, seeing things through her eyes, and posing her questions regarding the Web site helps us, her—and the target group that she represents—to do a better job of meeting expectations.

Maria's questions are listed on the opposite page.

Maria has questions about the **Information Design course of study** and its contents:

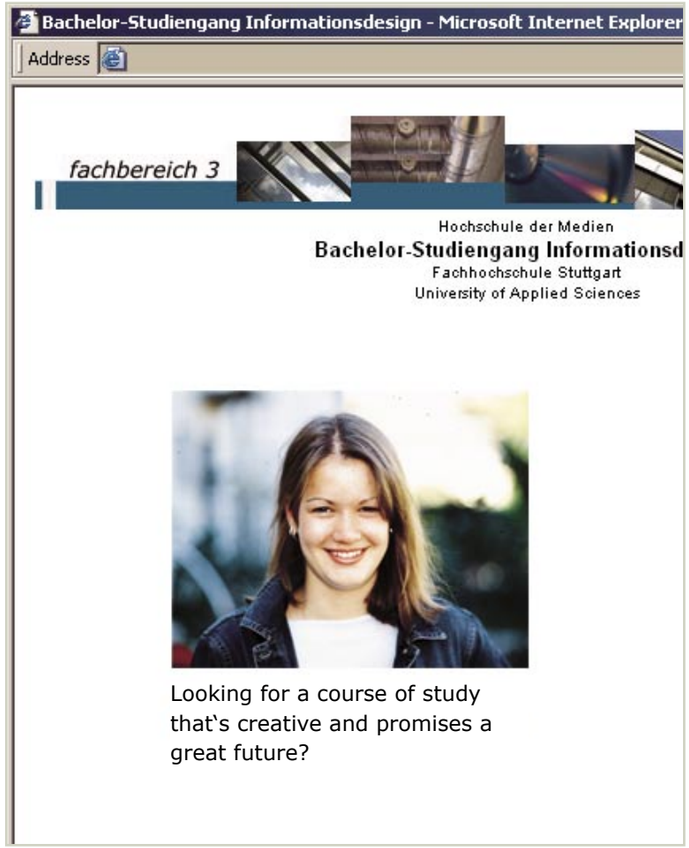
- What is information design?
- What courses are there?
- Will the courses interest me?
- What does an actual course look like?
- Will this be fun?
- How much is theory and how much is practice?
- How much time will I have to devote to my studies?
- How many students are there in a seminar?
- Are there virtual classes? What are they like?
- What tests will I have to take?
- How long does the course of study take?
- What do others say about this course of study?
- Can I take a quick look at things?
- What abilities and skills will I have at the end of the course of study?
- What qualifications will I have at the end of the course of study?
- What can I do with my degree as a profession?
- How much money will I earn as an information designer?

In addition, she would like to find out some things about the **college** at which she will be spending the next few years:

- What is the quality of the college?
- What image does the college have?
- How qualified are the instructors at the college?
- How personable are the instructors at the college?
- How current is the instruction?
- What is the technical equipment of the college like?
- How do things look at the college?
- Will I feel at home there?
- Where exactly is the college located?
- What other college activities are there?
- Is there a student cafeteria?

And of course she has a few questions concerning her **application**:

- What are the prerequisites for applying?
- Must I present a portfolio?
- Is there a cap on admissions?
- How many people will be accepted?
- When is the deadline for applications?
- Do I have to pay tuition?
- Who will advise me and help me if I have questions?
- Where do I find the necessary forms?



Based on Maria's goals and her questions, the task now is to design Web material that answers quickly and satisfactorily her contextual questions and her emotional questions (for example, »Will studying be fun?«). These questions will be answered not only by means of the information that is offered, but also through the manner in which this information is offered (compare here the chapter *Emotion*).

Maria must feel that she is being addressed in many respects. She must find her questions again and receive the appropriate answers quickly. The personas method helps here to design the corresponding pages.

Because there are also other personas besides Maria, it is important to address specifically the various target groups already on the start page of the Web material and in the appropriate area of the material that is offered.

The examples show start pages which make clear that there are various specific areas for different target groups.

Here it is very important to speak the »language« of the particular target group. This means using both the text as well as images and the type of design to set an anchor that will be understood intuitively. The start page represents the entrance to the material that is being offered and is intended to invite the user to continue clicking.

The American designer David Siegel compares this to a restaurant where an inviting menu at the entrance ensures that the visitors' mouths start watering and that they will want to go into the restaurant. According to Siegel, the »fish food« should be scattered on the start page and an air of anticipation should be built up which this lure can then truly fulfill.

The material offered by the ALLIANZ INSURANCE COMPANY distinguishes on its *home page* between private customers and business customers and offers these two groups different material. The municipal utilities of the city of Karlsruhe, Germany, also guide different groups of people to various specially oriented offerings. And the AOL PUBLISHING COMPANY offers its material in a very specific manner (information for teachers, for parents and for students).

1.7 Which Product?

In addition to determining *for whom* you are creating your product, there is the question as to *what type* of a multimedia product is involved. This decision also influences the conception and implementation of your product substantially.

Multimedia information systems provide informational material on one or more specific topic areas. With your help, users want to get an overview of a topic or have pinpointed access to specific information. A typical example of this is an encyclopedia, such as MICROSOFT's *Encarta*.

A new form of communication is provided by e-mail, chat rooms, and news groups. The use of e-mail has become established in universities and industry and is being used in people's homes more and more. The example shows a *message board*.

Advertising
For a few years now, companies have been using the World Wide Web intensively to advertise their products, with increasing success. Two aspects of this way of advertising are extremely attractive: especially the possibility to use interactive features cleverly (such as with customer surveys), and the relationship of cost and degree of effectiveness. The example shows the Audi portal.

Selling products over the Web has only just outgrown its baby shoes. Experts predict three-figure growth rates.

Virtual Communities are an attempt to combine the many communication capabilities of the Web with a social, personal level. This idea comes from Howard Rheingold and was first mentioned in his book of the same name in 1993.

A virtual community consists of members who are united by a specific interest. They provide information on this interest to other members. In some way, they feel responsible for the community and consciously contribute to the further development of the community.

The example shows the entrance to *Cybertown*.

Multimedia learning, at any time, in any place, and according to previous knowledge and individual need, becomes self-evident in the age of lifelong learning. The expectations placed on multimedia learning systems are high; however, they are fulfilled only if they are distinguished by a didactic concept that points toward the future. What is required here primarily are the motivation and strong activation of the learners. Training books on CD or on the Internet are not what is effective; rather, simulations and training systems that promote intensive communication of the learners. The example shows an international seminar on intercultural communication.

Experiencing
One of the most innovative areas is virtual reality, which by now enables simulations to have a very realistic effect. Thus, in this example, the imperial palace Ingelheim that was built by Charlemagne around 774 is made accessible again by means of computer animation. This animation was based on material tests, ground plans, drawings, and photographs of the ruins, as well as plans and designs of other pre-Roman buildings. The model is rendered to exact detail and reproduces the atmosphere of the imperial palace impressively.

Games
A large portion includes the group of games that appeal primarily to a young target group. The bandwidth is large and extends from reaction games to the complex adventure game. The example shows a screen shot from the game *Riven*.

1.8 Basics Checklist

- ☐ What goals do you want to achieve with your product?
- ☐ What target group(s) do you want to address?
- ☐ What kind of product are you dealing with (information system, tutorial, advertisement, etc.)?

- ☐ Have you defined personas? Are there dossiers for the personas?
- ☐ What are the goals of your personas?
- ☐ In what scenarios will the personas use your product?
- ☐ What »language« do your personas speak?
- ☐ What expectations do the personas have of what you have to offer?
- ☐ How can you »lure« your personas already on the start page and motivate them to continue clicking? What is the »bait?«

- ☐ Have you sketched the hypertext structure of your product on paper?
- ☐ Have you divided information and other material into manageable modules?
- ☐ Do you have an overall plan for your product?
- ☐ How does it fit in with other materials (such as printed brochures, manual)?