# Creating Web Graphics

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# Creating Web Graphics

You and Andrej Ferko

Class and Individual Work

# Intro Contents (superset)

## Selected Introductory Chapters:

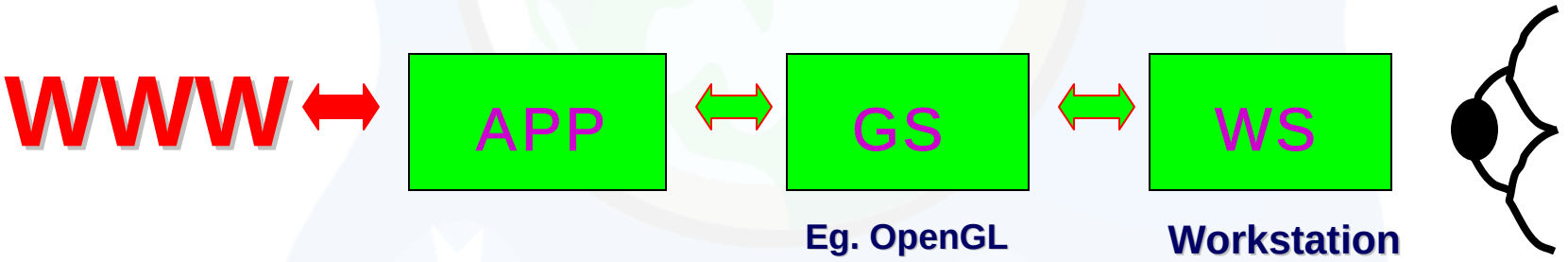
- The Age of the Third Wave
- Standard Web User
- Advanced Web User
- Web Author vs. Web User
- User Interface Design
- Motivation and Forms of Graphical Objects
- MIME Formats and Other Standards
- Creating and Discussing
- Animation and Dynamic Web

# Topics for the Creative Work

- Your White Page
  - CV, structuring the message
    - Professional Part
    - Personal Part
  - scenario, text and Netiquette
  - logo, pictures and the law violation
- Your Personality Page (What is INTERESTING?)
  - VRML, Java, software and others
  - Web Galery Object Creation
  - Your Contribution for EU, SK, BA, CU... Idea: World Cultural Heritage in Central Europe or e-learning (BSc thesis)

# Communication Interfaces

- Author - Application Programmer - GS Author - User




- What is interesting for users?

# CU Student Evaluation

- Two brief knowledge tests – midterm & final - AF
- 2D – XML and MathML – 2 pages
  www.sccg.sk/~valentova
- 3D – VRML (Blender, Collada, X3D...) – textured 3D object
- Webpage – technology festival or message

# CU Student Project?

– Your Gallery

– Compare e.g. pg.netgraphics.sk, VisibleArt.net...

– www.europrix.org - Your challenge

– CGEMS, Webby, Pirelli – global level

# Synchronisation I

- [Eric98] ERICKSON, F. J. – VONK, J. A. 1998. Netscape Communicator and the World Wide Web. 220 p. Boston: Irwin/McGraw-Hill 1998.
- Similar books or tutorials for other browsers

- ***www.mhhe.com/cit/net/learning***

# Synchronisation II

- WWW design issues by B. Mitchell, SIGGRAPH 96 Course Notes

- ***http://www.siggraph.org/education/materials/graphics_design/mitchell_S96/chapter1.htm***

# Art for Computer Graphicists

- Andrew Glassner, SIGGRAPH 1998 CN
- *http://www.siggraph.org/education/materials/siggraph_courses/S98/30/c30.pdf*

- Logo Design
- Color and Art Techniques
- What we could know more ?

# The Third Wave

- Alwin TOFFLER

- agricultural wave
- industrial civilization and thinking
- postindustrial wave, information society

# Alternative Culture

- William GIBSON: Neuromancer or Johny Mnemonic - CYBERSPACE
- Douglas ADAMS: Hitchhiker´s Guide to Galaxy
- Matrix dystopy and Murphy´s Laws

# Internet before Computers

- IDEA,
- METHODOLOGY,
- TECHNOLOGY (Hyper-G example)
- ---

- Computer in 19th Century: Ch. Babbage
- Sofware Idea: Ada Lovelace
- Internet Idea - smoke and mirror signals, bird postman

# User Interaction Model and Development

- Prompt, measure, trigger, input data record, echo, acknowledgement, processing, prompt...
- Request, sample and event mode
- 6-7 logical input devices
- GUI: 1D, 2D (WIMP), 3D (noimmersive and immersive solutions)
- menu-choice tree (acc.) or hypertext

# Creating Webpages

- Content
- Context
- Message
- Visualization and Sonification
- Hierarchical Creation of the Picture 2D
- Fun and humor
- USER mystery (population stereotypes, rules of sensing…)

# Creatology

- Idea or Problem
- The Phase of Labyrinth (generation)
- The Phase of Search (evaluation)
- Repeat until (science vs. design)
- Alternative Theory by A. Koestler
- Convergent and divergent methods
- Algortihmisation vs. intuition

# Creatology, convergent

- Heuristic method of controlled creativity
- Fustier's Invektique
- Nadler's Heuristic Search of Ideal Solution
- Gordon's Heuristic Search of Analogies
- morphological method
- return to old ideas
- describe all properties

# Creatology, divergent

- Brainstorming, more variants
- Brainwriting
- Delfth Method
- Inscenation Methods
- 6-3-5 and Phillips 66
- synetcics, ikonosynectics, stochosynectics

# ACM Comp. Science Curriculum

- Multimedia applications and content authoring
- …
- Design issues for content authoring
- Authoring tools and production systems
- Web authoring and programming

# Web Graphics: Topics I

1. **Fundamental definitions. History and future of WWW. Semantic Web and Digital Libraries. Mobile communication. Security, legal and social aspects. Webby awards.**

2. **Client-server architecture. Net services and technologies. E.g. SGML, HTML, XML, MathML, VRML, UML. Java, php, ASP.NET, etc. Lovely or suitable or wrong examples. MIME formats, RFC standards, and WWW Consortium.**

3. **Creating texts, digital typography and DTP. Intellectual property and publishing on-line.**

4. **Creating and use of pictorial data for WWW.**

5. **Sound processing for web applications.**

# Web Graphics Topics II

6. **Animation and video with Internet.**

7. **WWW Interaction. Face demo by Ken Perlin. WWW as a procedural sketchbook.**

8. **Rules and web design styles after A. Glassner.**

9. **Web3D, VRML and X3D.**

10. **Virtual galeries, gardens, thematic parks, and chat rooms.**

# Web Graphics Topics III

11. **Social a philosophic aspects of virtual environments. Virtual habitat and virtual poulations. Netiquette. Blasphemy and freedom of expression. Third wave metaphor by A. Toffler. History of ideas in virtual reality (Gibson, Krueger, Lanier, CAVE…). Cult film Matrix. Implications of dystopic messages.**

12. **Interaction, navigation, and cooperation in DVEs. Games and simulators.**

13. **Composing texts and images. Visually critiquing of web pages.**

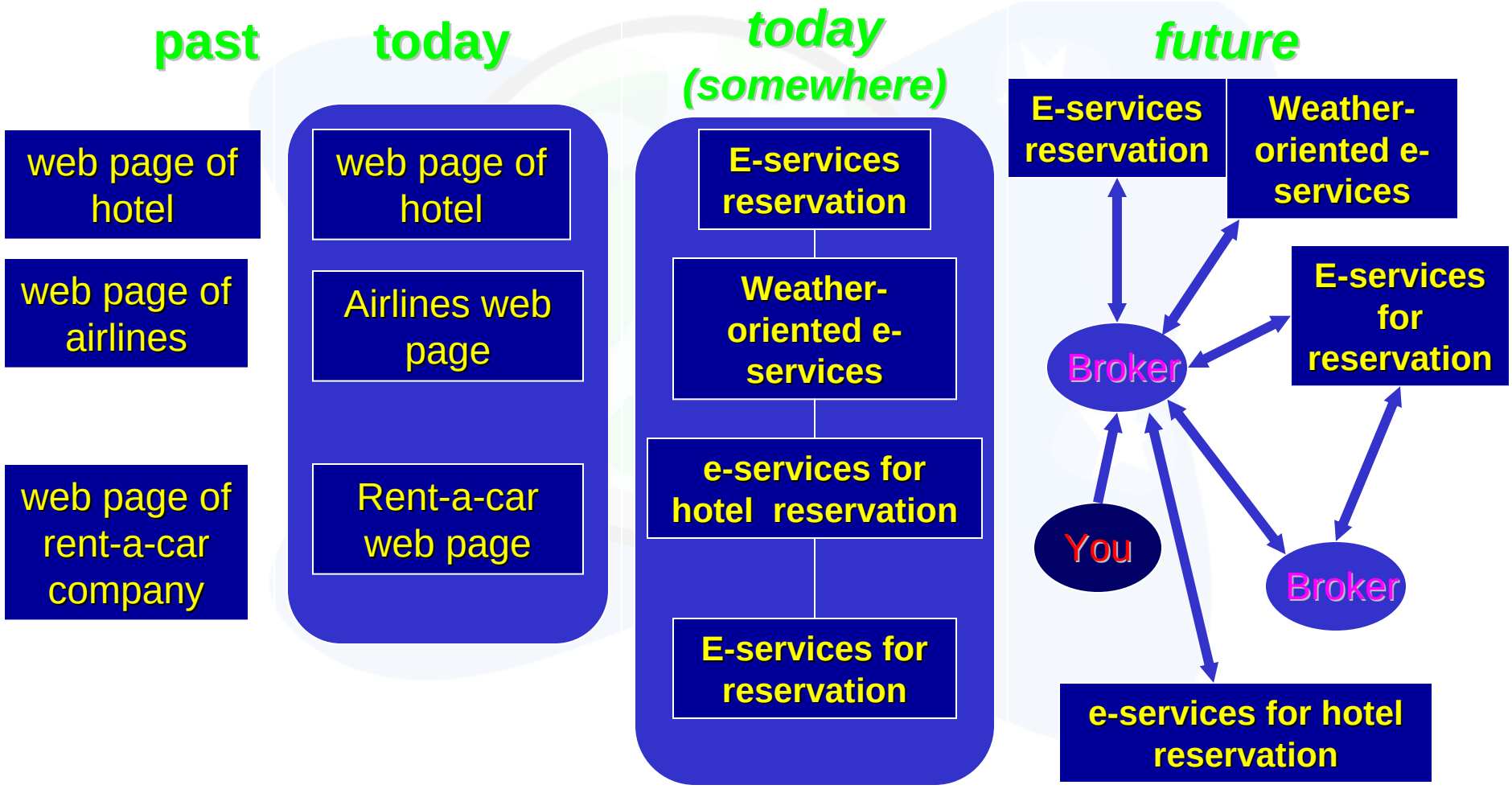
14. **Cybercities. Acquisition (MPEG-4, SEDRIS), construction, presentation, applications.**

15. **Groupware. Group communication. Avatars and on-line communities. MPEG-7 and MPEG-21 projects.**

# Web Pages Design

- Logo, title, message
- Idea, project, preproduction, production, postproduction, publishing (promotion), remake
- Page maintenance
- Page types and e-shop types:
- in-town, out-of-town, underground
- www.compuserve.co.uk/shoppingcentre

# e-speak - illustration



# Web Page Perception

- Document
- Painting
- Radio
- Theater
- Movie
- Human (audio)visual system
- VR
- Interactive & Adaptive Hypermedia
- IT product
- Legal entity
- Future avatar

# WWW & XML >> WWD

- Million User Interface
- VRML 1.0 and VRML 2.0 and X3D
- VRML ECMA Script, VRML EAI...
- Data Mining
- Collaborative Hypermedia, Virtual Sculpting, MUDVR
- MPEG-4 & MPEG-7 Goals
- Content Age, Semantic Web

# Human Visual System

- Self-defense and Survival:
  - (sound, fast brain/amygdala)
  - 1. motion !!!
  - 2. shape (the longest vertical one first)
  - 3. color, texture, „structure“
  - 4. symbols recognition
  - 5. meaning .. ambiguity .. more

# Human Visual System 2

- Selfdefense
- empty rectangular scene, no danger
- reading paradigm, ~ 500 years
- golden rectangle
- Fibonacci numbers 1, 1, 2, 3, 5, 8...
- 3D golden rule and architecture

# Human Visual System 3

- Rectangle: reading or „old“ HVS
  - empty rectangle case
  - 1. motion !!! & memory => last CP
  - 2. Golden mean point
  - 3. Anti-golden mean point
  - 4. Upper half of the screen
  - 5. Rectangle geometric center
    - Before the first bit of Your message...

# Human Visual System 4

- The time before entering the page
  - no page
  - no rectangle
  - no communication

    – ~ MOVIE OPENING

  - Optimize the download time, e. g.
- compare www.QuikCAT.com

# Communication

- Page entry point (focal point)
- Assume the time synchro is OK
  - communication starts:

    – what should see the audience?

- Where is Your page entry point?

# Communication 2

- Original <---> Recipient
- Original … Two recipients
- Incomplete original
- Two parts of original, two recipients
- No original => Model, representation
- No model => Darstellung, Ostension
- Knowledge direct or indirect
- Metacommunication, semiotics

  – Optimize the download time, e. g. www.QuikCAT.com

# Communication 3

- New page = 30 seconds and 3 clicks
- Decision to continue
- What happens the first 10 seconds?

- head tracking
- eye tracking
- vision [Marr82]
- cognitive processes

  - **Optimize the download time, e. g. like** www.QuikCAT.com

# Communication 4

- What happens the first 10 seconds?
  - (10 seconds is not absolute)
- head tracking - we ignore now
- eye tracking - entry point & trajectory
- vision & cognitive processes
- nonempty rectangle case

# Eye Tracking, etc.

- Entry point = the object with the top priority in visual hierarchy
- Two phases: search & scanning
- SEARCH
- Priority: motion,
- size, images, color, text style, position

# Eye Tracking, etc. 2

- SCANNING
- Area
- Proximity
- Reading order
- Grouping
- Recurse the search phase

# Communication 5

- What happens the second 10 seconds, after the first click?

- head tracking
- eye tracking - entry point & trajectory
- vision
- cognitive processes
- and memory, etc. etc. etc.

# Directing the Eye Trajectory

- Static technique used in painting
- Dynamic techniques used in theatre
- Web page as the fourth wall
- Goal oriented using curtain, actors, story and scenography, lighting and sound space - and interaction
- Web page is not 2D: structuring

# Directing the E. T.

- The simplest case: plain text
- The page is presented as a book
- Documents and DTP rules, TEX
- Web page is ~2D: structuring texts
- Directing of reading, index, links

# Directing the ear trajectory

- The simplest case: radio
- The page is presented as a 1D sound stream
- Listening to the read document

- Directing of listening, index, links,
- search, rewind, repeat...

# MIME Formats

- **JPEG:** ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/part1
- **MIDI:** ftp://rtfm.mit.edu/pub/usenet/news.answers/music/midi/bibliography
- **MPEG:**http://www.iso.ch/switch-engine-cate.pl?searchtype=refnumber&keywords=11172
- **PNG:** http://www.boutell.com/png
- **XML:**
- **SVG:**
- **UTF8:** http://www.iso.ch/cate/d18741.html
- **WAV:** ftp://ftp.cwi.nl/pub/audio/RIFF/format
- **... http://ds.internic.net/rfc/rfcxxxx.txt**
- instead of ISO/IEC, EUN, STN

# Advanced Technologies

- JAVA:
- FLASH:
- TCL, PHP, Perl, Tcsh, JavaScript, VisualBasicScript:
- ASP, ASP.NET:
- WAP:
- DISAPPEARING COMPUTER:
- NOMADIC COMPUTING, XML,
- ISI, IEC, ITU, W3C
- …

# Web Page Design Issues

- Mitchell SIGGRAPH98 Course Notes
- Intent and Audience
- Type 1 of Site: information-based
- Type 2 of Site: offer experiences, emotion

# General Issues

- Browsers, platforms, bandwidth
- Testing in various environments
- Copyright Issues
- Keeping Information Up to Date
- Comments

# Principles of Design and Page Layout

- Stucturing Whitespace
- Balance, visual weight: size, value, density
- Symmetrical Balance
- Lack of Balance
- Consistency Across Pages
- Designing for Paper or WWW: safe area
- Using Grids
- Focal Point and Path

# Logo Design (Glassner 98)

- Logo, title, message
- Idea, project, preproduction, production, postproduction, publishing (promotion), remake
-

# Art for Computer Graphicists

- Andrew Glassner, SIGGRAPH 1998 CN
- http://www.siggraph.org/education/materials/siggraph_courses/S98/30/c30.pdf
- Logo Design
- Color and Art Techniques
-

# Logo Five Goals

- Identify the product
- Differentiate it from other products
- Unify all products in the same line
- Explain what the product is
- Anthopomorphise the product and manufacturer

- The product = Your web page this time

# Types of Logos

- Name only (DIGITAL)
- Initials (IBM,)
- Name and Symbol (Dolby, hp) ((AF: semiotics))
- Picture Name (OpenGL, Kodak)
- Associative Image (Mercedes, Linux)
- Abstract Image (the hardest one)

# Legal Protection Six Levels

- Imaginary Names – easy to protect
- Arbitrary Names
- Suggestive Names
- Descriptive Names
- Personal Names
- Generic Names (paper, xerox, phong) – hard

- … another McDonald has less rights

# Logo Design Process

- Specify the desired trademark
- Research the client, the market, the audience
- Develop some ideas
- Choose a few to refine
- Present the best
- Refine and represent as needed, until the client approves
- Implement the final design

ou See
ou Get

# Science

- Discovery

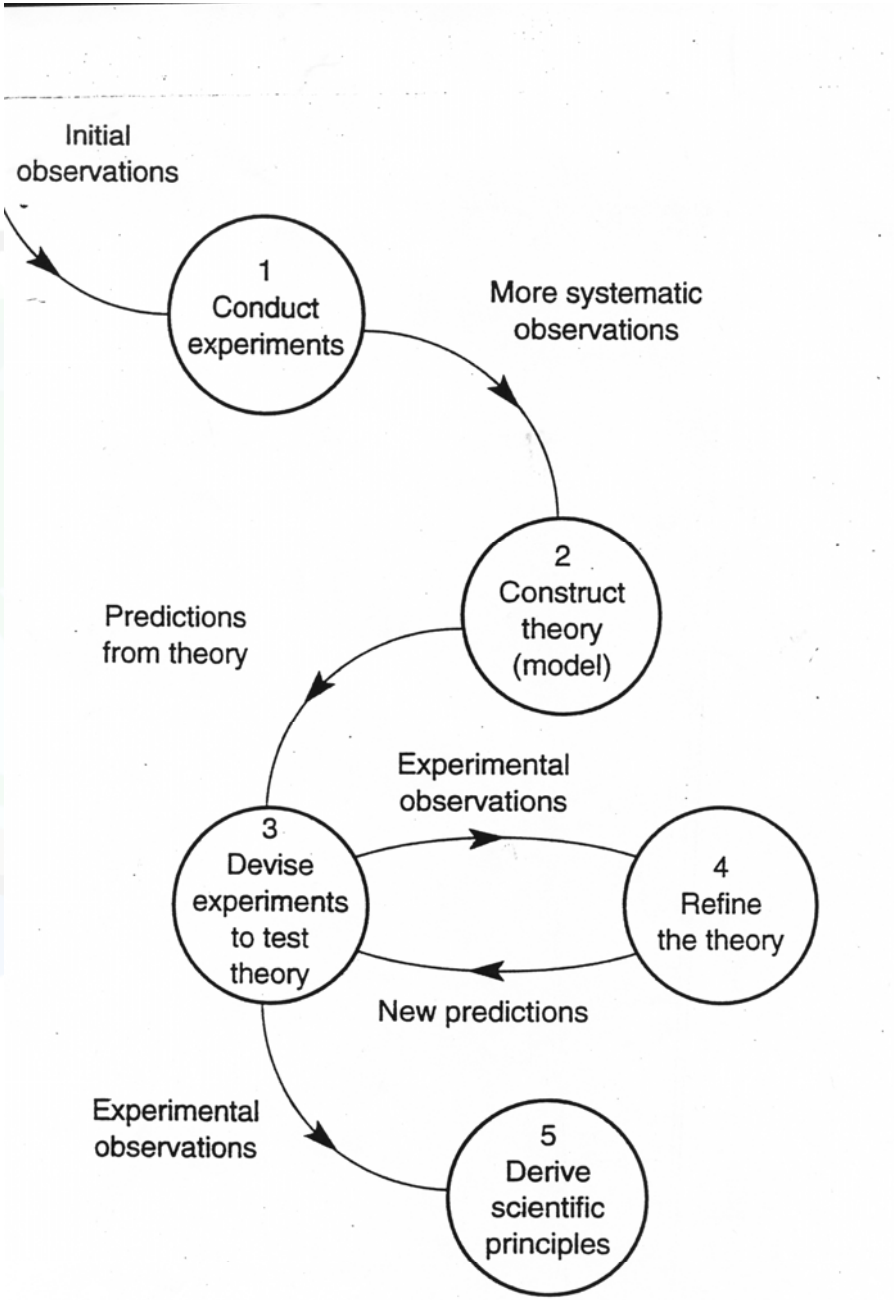



**Figure 1.1** The nature of scientific analysis.



atislava
5, 2006

# Design

- Invention

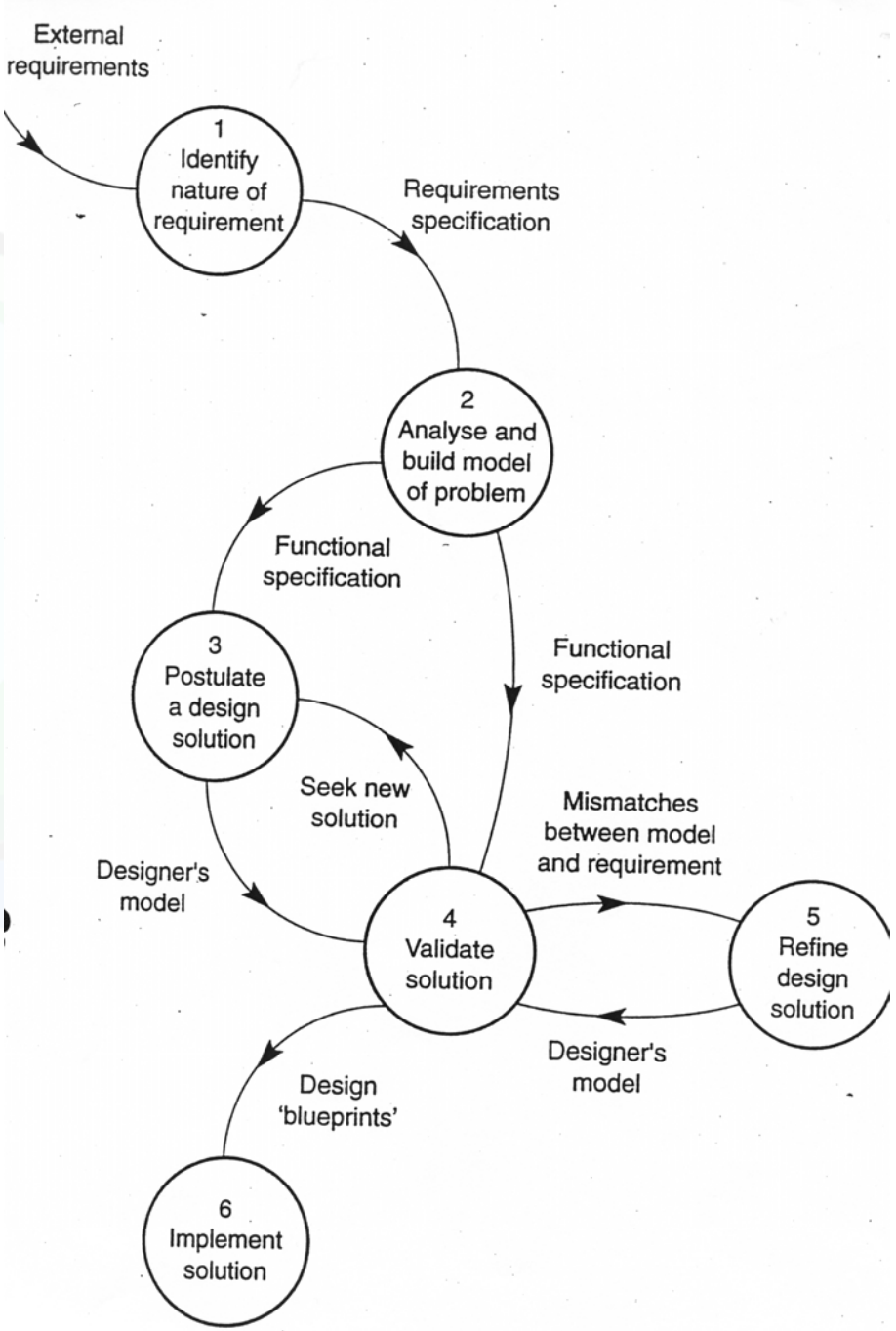



**Figure 1.2** A model of the design process.

# Logo Design Process

- Specify the desired trademark
- Research the client, the market, the audience
- Develop some ideas
- Choose a few to refine
- Present the best
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- Implement the final design

# Design Fundamentals

- Another story

# Selected Pages Survey

- www.webbyawards.com
- www.siggraph.org
- www.eg.org
- www.pricerunner.com
- www.europrix.org

# Webpage Guidelines On-line

- By [Fara99] FARADAY, P. 1999.
- Visually Critiquing Web Pages.
- In: EUROGRAPHICS Workshop on Multimedia. pp. 155-166. Wien: Springer 1999.
- [1] Ameritech Web Page User Interface and Design Guidelines. http://www.ameritech.com/corporate/testtown/web_guidelines/principles.html
- [2] BERNSTEIN, M. Judging Web Pages: Usability or Criticism? http://www.eastgate.com/HypertextNow/archives/merit.html
- [3] Web Graphics - Great tips from CNET Designers.
- http://www.builder.com/Graphics

# Webpage Guidelines On-line 2


- **[4] FLEMING, J. 1997. In Defense of Web Graphics: Graphic designers offer more than just flashy graphics.**
- http://www.webreview.com/97/07/25/feature/index4.html
- **[5] LYNCH, J. & HORTON, S. Yale Centre for Advanced Media WWW Style Manual.**
- http://www.info.med.yale.edu/caim/manual/pages/editorial_style.html
- **[6] MEADS, J. Usability is not Graphics Design.** http://devedge.netscape.com/viewsource/medads_usb.htm
- **[7] NIELSEN, J. 1997. Alertbox.**
- http://www.useit.com/alertbox
- *http://www.siggraph.org/education/materials/graphics_design/mitchell_S96/chapter1.htm*

# Conclusions

- Authoring, ACM CC
- Design instead of research
- Web page design as Theatre directing
- WWW Design Issues
- Idea, Logo, Message, Project, ... Practical Work

# Thank You

- **For**
- **Your**
- **Attention**
-

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