

FUNDAMENTAL OF MULTIMEDIA DESINING

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DESIGNING

- Expected Outcomes

- In this chapter, Student will be able

- To understand the design concept
- To design the multimedia product

- References

- Jesse James Garrett's *The Elements of User Experience: User-Centered Design for the Web and Beyond (2nd Edition)*.
- Peter Morville and Louis Rosenfeld's *Information Architecture for the World Wide Web: Designing Large-Scale Web Sites*.
- Khalid Sayood. *Introduction to Data Compression, Fourth Edition (The Morgan Kaufmann Series in Multimedia Information and Systems) 4th Edition*. Elsevier. 2012 ISBN-13: 978-0124157965.
- Savage, T.M., Vogel, K.E. *An Introduction to Digital Multimedia 2nd ed.*. 2013. Jones & Bartlett Learning ASIN: B00LZM6ESY.
- Parag Havaldar, Gerard Medioni. *Multimedia Systems: Algorithms, Standards, and Industry Practices (Advanced Topics) 1st Edition*. Cengage Learning. 2011. ISBN-13: 978-1418835941



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Reference

- Molich, R., and Nielsen, J. (1990). Improving a human-computer dialogue, *Communications of the ACM* 33 , 3 (March), 338-348.
- Nielsen, J., and Molich, R. (1990). Heuristic evaluation of user interfaces, *Proc. ACM CHI'90 Conf.* (Seattle, WA, 1-5 April), 249-256.
- Nielsen, J. (1994a). Enhancing the explanatory power of usability heuristics. *Proc. ACM CHI'94 Conf.* (Boston, MA, April 24-28), 152-158.
- Nielsen, J. (1994b). Heuristic evaluation. In Nielsen, J., and Mack, R.L. (Eds.), *Usability Inspection Methods*, John Wiley & Sons, New York, NY.



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Human Senses

- Sight
- Sound
- Touch
- Movement



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Messages and Communication

- How multimedia contributes to convey messages and communication among human and between human and computer?
 - Applications
 - Tools
 - Interactive interfaces.



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BASIC GUI PRINCIPLE

- **Keep the interface simple.** The best interfaces are almost invisible to the user. They avoid unnecessary elements and are clear in the language they use on labels and in messaging.



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- **Create consistency and use common UI elements.** By using [common elements](#) in your UI, users feel more comfortable and are able to get things done more quickly. It is also important to create patterns in language, layout and design throughout the site to help facilitate efficiency. Once a user learns how to do something, they should be able to transfer that skill to other parts of the site.



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- **Be purposeful in page layout.** Consider the spatial relationships between items on the page and structure the page based on importance. Careful placement of items can help draw attention to the most important pieces of information and can aid scanning and readability.



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- **Strategically use color and texture.** You can direct attention toward or redirect attention away from items using color, light, contrast, and texture to your advantage.



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- **Use typography to create hierarchy and clarity.** Carefully consider how you use typeface. Different sizes, fonts, and arrangement of the text to help increase scanability, legibility and readability.



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- **Make sure that the system communicates what's happening.** Always inform your users of location, actions, changes in state, or errors. The use of various UI elements to communicate status and, if necessary, next steps can reduce frustration for your user.



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- **Think about the defaults.** By carefully thinking about and anticipating the goals people bring to your site, you can create defaults that reduce the burden on the user. This becomes particularly important when it comes to form design where you might have an opportunity to have some fields pre-chosen or filled out.



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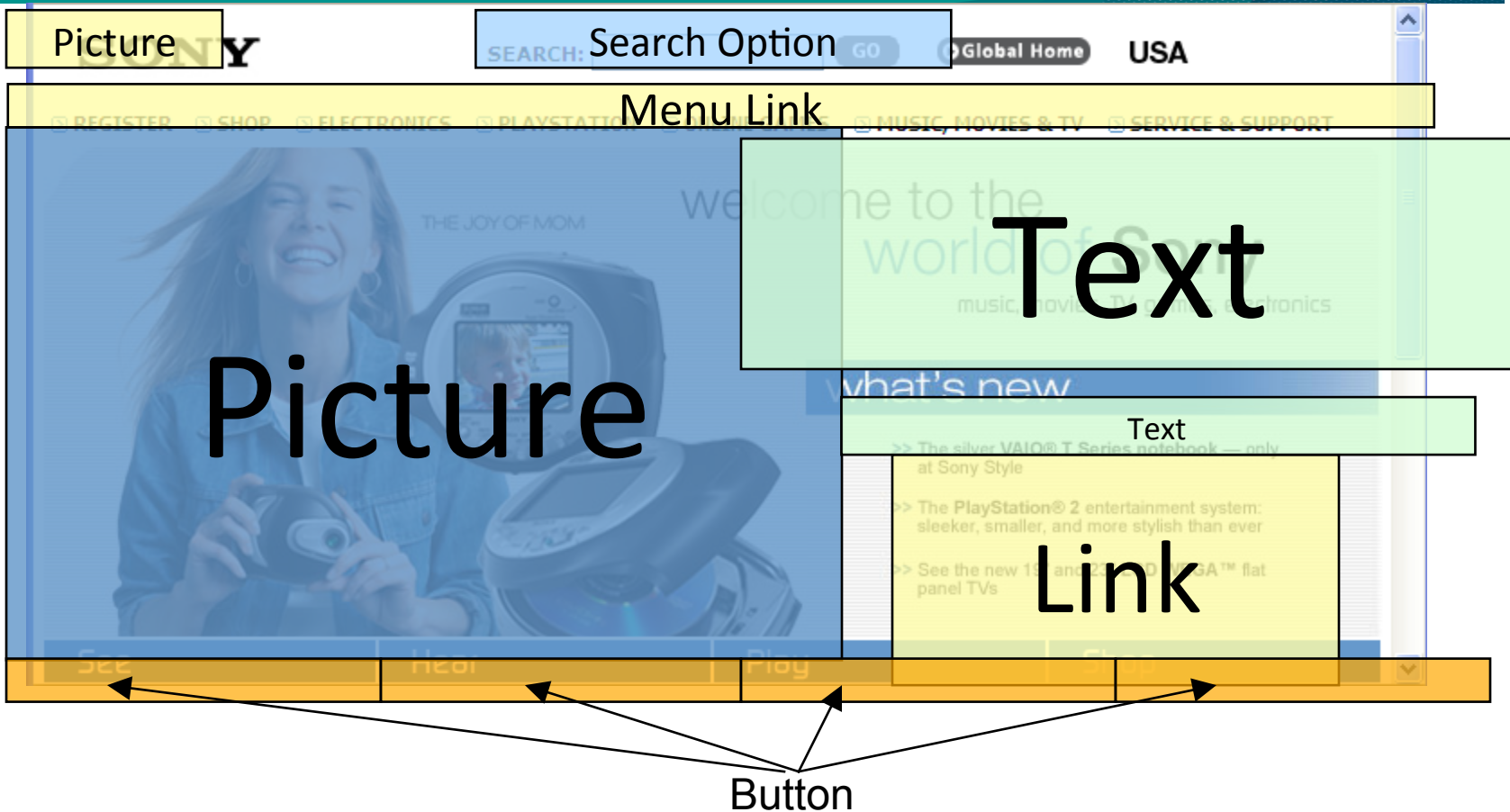
Basic Screen Design Principles

- Layout
- Font Selection
- Text Sizing
- Foreground vs Background Colours
- Placing Text on Photographic Background
- Text & Picture Arrangement
- User Friendliness or Usability
- Adopting a Common Look and Feel



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Layout (http://www.sony.com/)



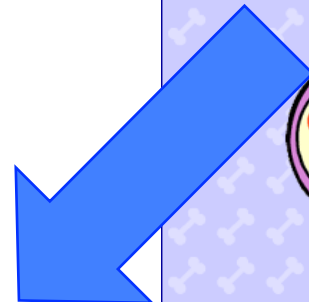
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Font Selection

Proper use of font type to suit with the themes and targeted audience of the project or presentation.



Big Ideas!



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A Comparison of Popular Online Fonts: Which is Best and When?

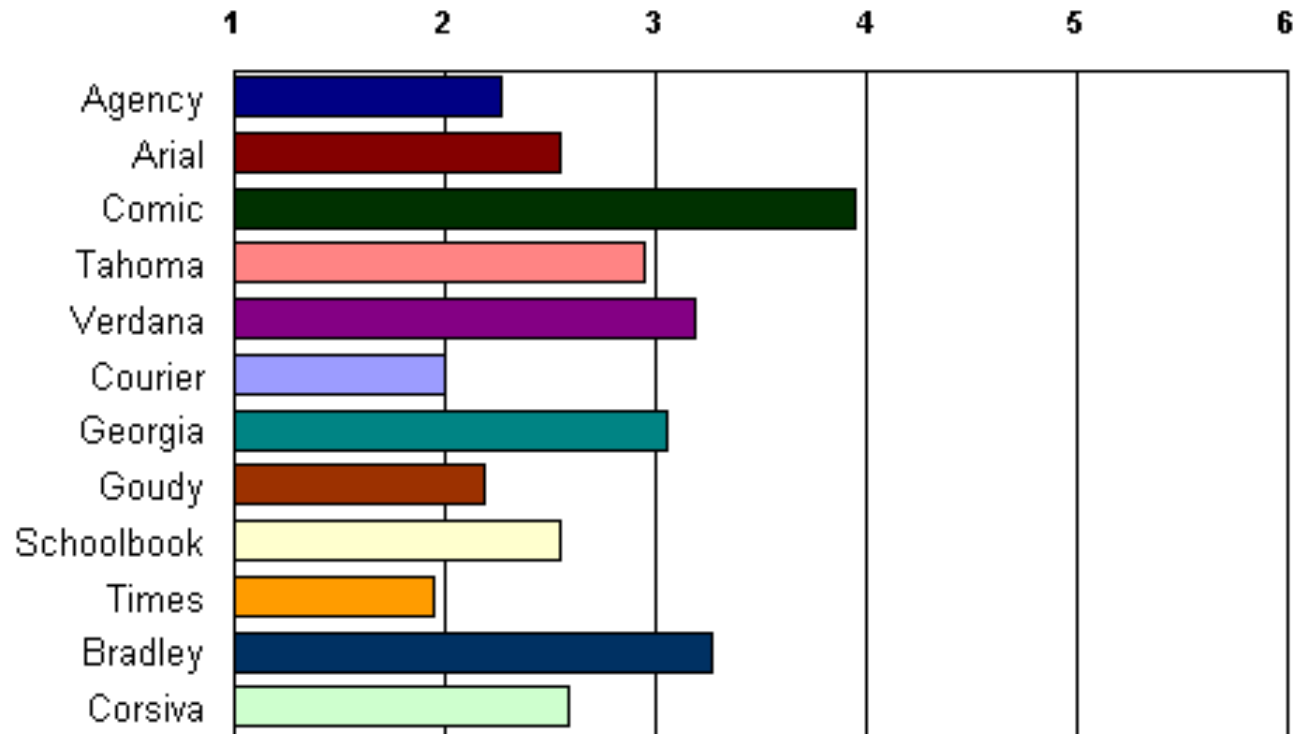


Figure 5. Perceived as being youthful & fun (1 = “Not at all” and 6 = “Completely”).



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Text Sizing

How do you feel today?

How do you feel today?

How do you feel today?

How do you feel today?

How do you feel today?

How do you feel today?



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Foreground vs Background Colours

If you want bright color, then yellow on blue is your choice.

Green, if you tone it down to a muted green, is very nice. It even contrasts well with itself.

Yellow on green also looks nice, but can cause problems with people with color vision problems.

If you are going to work with black, it helps to mute your colors a little, so they don't appear to be shouting.



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Bad matching

Never put blue and red against each other on the page unless you want to hurt the eyes of people looking at your site. They are so far apart on the spectrum, which is to say that their wavelengths are so different, that your eyes cannot focus on both colors at the same time. It is, on the other hand, hard to read in print just because it is low contrast.

Green in general is be a poor choice.

It just does not work well.

Regardless of what you try to contrast it with.



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Placing Text on Photographic Backgrounds

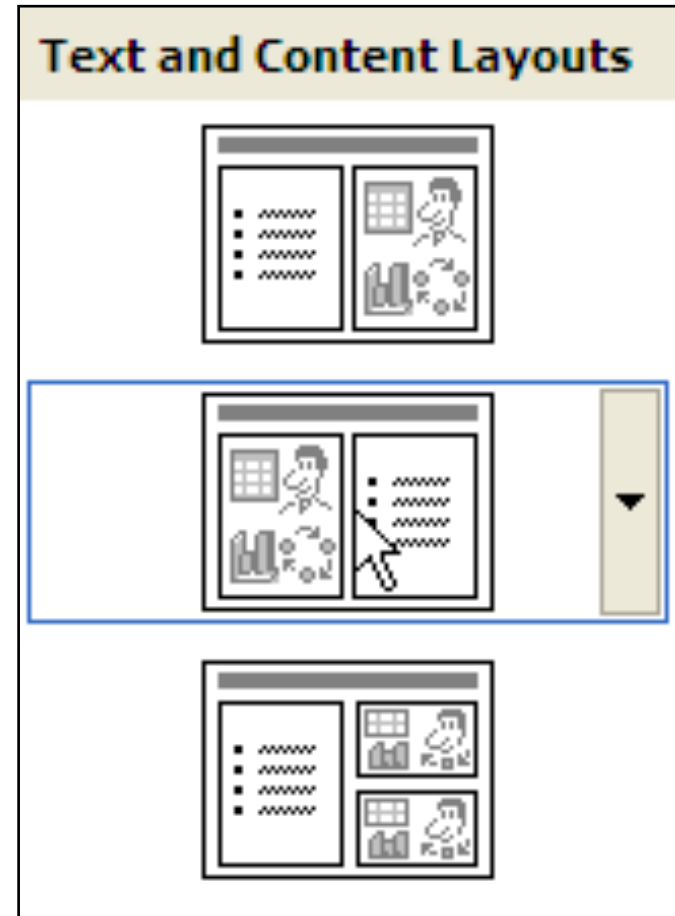
Text on Background Image



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Text & Picture Arrangements

The main objective is to ease the process of user to understand the message.



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User Friendliness

The term user friendly is often used as a synonym for *usable*, though it may also refer to accessibility. The use of terms *user friendly* and *user friendliness* should be avoided, as there are no widely accepted definitions for them, and they are thus often used as vague marketing terms.



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Usability

The document *ISO 9241-11 (1998) Guidance on Usability* issued by [International Standards Organization](#) defines usability as:

The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.



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Jakob Nielsen's framework of system acceptability

Usability consultant [Jakob Nielsen](#) has produced a framework of system acceptability, where usability is a part of *usefulness* and is composed of:

- Learnability
- [Efficiency](#) of use
- Memorability
- Few and noncatastrophic errors
- Subjective satisfaction



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Usability considerations

- Who are the users, what do they know, and what can they learn?
- What do users want or need to do?
- What is the general background of the users?
- What is the context in which the user is working?
- What has to be left to the machine? What to the user?



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Considerations and Decisions

1. Planning
2. The scope of the project
3. Nature and characteristics of product
4. Research on intended audience
5. Identify and set primary goal of the outcome and effect on the user.

Be objective!!!



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Adopting a Common Look & Feel

Look and feel refers to design aspects of a graphical user interface - in terms of both colours, shapes, layout, typefaces, etc (the "look"); and, the behaviour of dynamic elements such as buttons, boxes, and menus (the "feel"). It is used in reference to both software and websites.



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Heuristic Model

10 Usability Heuristics



Visibility of system status



Match between system and the real world



User control and freedom



Consistency and standards



Error prevention



Recognition rather than recall



Flexibility and efficiency of use



Aesthetic and minimalist design



Help users recognize, diagnose, and recover from errors



Help and documentation

Source : www.english.my -Definitions.com



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Visibility of system status

- The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.



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Match between system and the real world

- The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.



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User control and freedom

- Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.



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Consistency and standards

- Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.



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Error prevention

- Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.



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Recognition rather than recall

- Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.



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Flexibility and efficiency of use

- Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.



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Aesthetic and minimalist design

- Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.



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Help users recognize, diagnose, and recover from errors

- Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.



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Help and documentation

- Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.



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