

# Designing Effective Outputs

[Chapter 11]

## System Analysis and Design

-- Kendall and Kendall

Prepared by - Mijanur Rahaman,  
Asst. Prof. of CSE, BUBT

# Factors to Consider When Choosing Output Technology



Although the technology changes rapidly, certain usage factors remain fairly constant in relation to technological breakthroughs.

- Who will use the output—job requirements help dictate what output is appropriate.
- How many people need the output:
  - if many people need output, Web-based with a print option or printed copies.
  - if only one use, a screen or audio.
  - if many people, different outputs, different times for short periods and need it quickly then Web documents or screens connected to terminals.
- Where is the output needed—physical destination of the output.
- What is the purpose—what user and organizational tasks are supported.
- What is the speed with which output is needed—the higher the level of management the faster the output is desired.

# Factors to Consider When Choosing Output Technology

continued



- How frequently will the output be accessed—infrequently accesses output that is needed by only a few users is well suited to a CD-ROM archive.
- How long will the output be stored—paper deteriorates with age. Microforms or digitized is better.
- Regulations depicting output produced, stored, and distributed—the appropriate format for some output is regulated by the government.
- Initial and ongoing costs of maintenance and supplies—initial cost and ongoing cost must be considered.
- Human and environmental requirements—accessibility, absorption, controlled temperature, space for equipment, cabling, proximity to Wi-Fi transmitters or access points.



- May limit the quantity of paper reports that are printed
- May discourage employees from printing out copies of email messages by adding a green IT notification to the bottom of each corporate email message



Bias is present in everything that humans create. Analysts must avoid unnecessarily biasing output and make users aware of the possible biases in output

Bias is introduced in three main ways:

- How information is sorted—bias is introduced to output when the analyst and users make choices about how information is sorted for a report; alphabetical, chronological, cost.
- Setting of acceptable limits—the predefinition of limits for particular values being reported.
- Choice of graphics—bias can occur in the selection of the graph size, its color, the scale used, and even the type of graph.

## Avoiding Bias in the Design Output



- Be aware of the sources of bias
- Design of output that includes users
- Work with users so that they are informed of the output's biases
- Creating output that is flexible and allows users to modify limits and ranges
- Train users to rely on multiple output for conducting "reality tests" on system output



- Detailed reports
  - Print a report line for every record on the master file
- Exception reports
  - Print a line for all records that match a certain condition
- Summary reports
  - Print one line for a group of records that are used to make decisions



- Keep the display simple
- Keep the presentation consistent
- Facilitate user movement among displayed output
- Create an attractive and pleasing display



- Use professional tools—Web editors such as Macromedia Dreamweaver.
- Studying other sites—Firefox is a great browser for studying other websites.
- Use Web resources—look at websites that give hints on design. i.e. useit.com
- Examine the sites of professional website designers—often visited and praised websites.
- Use the tools you've learned—use a form to evaluate Web pages systematically.



- Consult the books—read about Web design.
- Examine poorly designed Web pages—critique poor web pages and remember to avoid those mistakes.
- Creating Web templates—if you adopt a standard-looking page for most of the pages you create, you'll get the website up and running quickly and it will consistently look good.
- Using plug-ins, audio, and video sparingly—remember that everyone does not have new plug-ins.
- Use storyboarding, wireframing, and mockups



- Plan ahead, pay attention to:
  - Structure
  - Content
  - Text
  - Graphics
  - Presentations style
  - Navigation
  - Promotion



## Storyboard:

- In developing a website or app a storyboard could be used to show the differences between screens
- It can show how a visitor to the site would navigate the website

## Wireframing allows the designer to plan:

- The overall design, showing what element appears at each position on the page
- The navigational design, showing how to move from one page to the next using buttons, tabs, links, and pull-down menus
- The interface design, showing how to interact with the website by inputting data or responding to questions



## mockup:

- The term *wireframe* has largely been replaced with mockup
- Mockups show what the output and input will look like
- The software has objects that can be dragged and dropped onto the screen
- Templates are available for any type of display including:
  - Desktops
  - Notebooks
  - Smartphones
  - Tablets
- When designing for smartphones and tablets, both screen orientations are included



- It is important to include Web 2.0 technologies that focus on enabling and facilitating user-generated content and collaboration
- Types of technologies you should think about including:
  - Blogs
  - Wikis
  - Links to social networks on which the company has a presence
  - Tagging

One of the most significant differences between Web 2.0 and the traditional World Wide Web (WWW, retroactively referred to as Web 1.0) is greater collaboration among Internet users, content providers and enterprises. Originally, data was posted on Web sites, and users simply viewed or downloaded the content. Increasingly, users have more input into the nature and scope of Web content and in some cases exert real-time control over it.



1. Set up a developer account
2. Choose a development process
3. Be an original
4. Determine how you will price the app
5. Follow the rules for output design
6. Design your icon
7. Choose an appropriate name for the app



8. Design for a variety of devices
9. Design the output for the app
10. Design the output a second time for different orientation
11. Design the logic
12. Create the user interface using gestures
13. Protect your property
14. Market your app

## Choose a Development Process



- Prototyping is most likely the best way to develop your app
- Quick releases are important
- Quality should not be sacrificed, but you can introduce an app and then add features later
- Advantages of introducing an app first:
  - It allows you to gain an advantage
  - Revise the app adding new features
  - Increases visibility because the app appears on a list of apps that have been updated



- There are six basic options for pricing:
  1. Choose a low-cost strategy
  2. Introduce an app as a “premium” app
  3. Adopt a “freemium” model
  4. Offer an app for free
  5. Promote an app by reducing its price
  6. Accept advertising



- An XML document may be transformed into different output media types
- Methods:
  - Extensible Style Language Transformations (XSLT)
  - Ajax
  - Cascading style sheets (CSS)

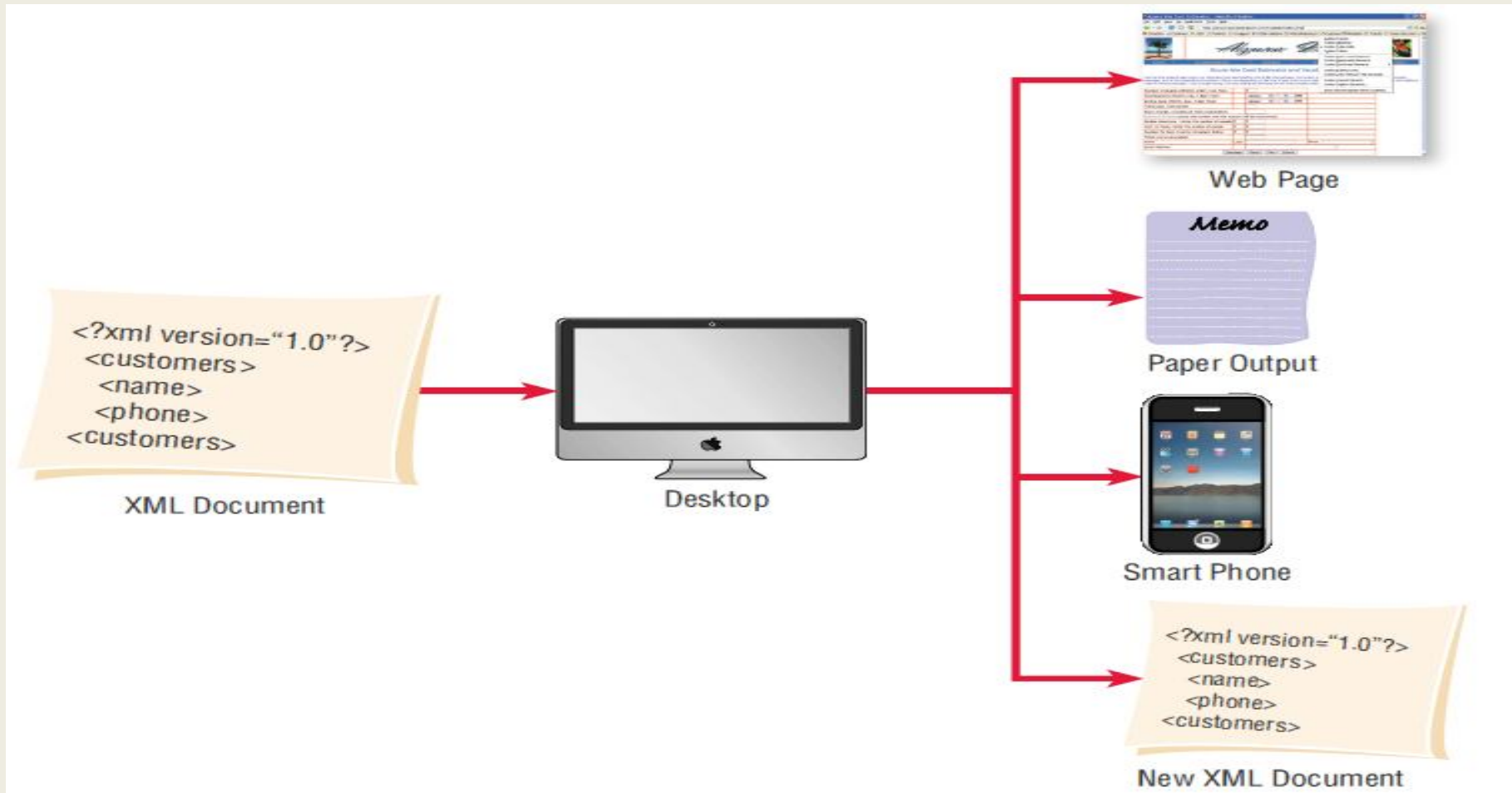
These methods reinforce the idea that data should be defined once and used many times in different formats.

# Extensible Style Language Transformation (XSLT) Can Transform XML Documents into Many Different Formats

Figure 11.20



Select XML elements—insert them into a Web page or another output medium.





- Uses both JavaScript and XML to obtain small amounts of data from a server without leaving the webpage
- The user does not have to wait for a new webpage to display after making a selection

Using Ajax means that the entire Web page does not have to be reloaded.