Hypermedia Application Characteristics

What makes for a good HyperApp?

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Constrains

- We will be constrained by the characteristics of our authoring and run-time systems
- For example, the Web provides very restrictive linking:
  - No support for typed links, multiple destination links, or overlapping link anchors.

Navigability

- The most obvious functional characteristic
- How much navigation? Are there typed-links?
- Can we add/remove links on demand?
Information Maps and Overviews

- Assist the user in understanding the navigational space of the app
  - Site map

Information trails

- Help the users remember where they are (within the space of the application)
- Allow the user to return to previously visited places
  - Bookmarks
  - History lists

Searching and Indexing

- If the app is intended to provide access to information, indexing and searching are critical
- Recall and precision
  - Search engine (internal or external)
  - We should index only relevant information

Document Management

- How are we going to handle the content of the application?
  - This feature is dependent of both: authoring and run-time systems
**Information Security**

- Atomic entities might need to be protected
- We need to guarantee that the views that include them are protected too
  - Reader authentication
  - Encryption (SSL)
  - Protection of the information (both stored and transmitted)

**Presentation**

- A suitable presentation metaphor is critical to our ability to identify and use appropriate information
- There can be multiple presentations depending on the reader capabilities (Wireless access, visually impaired, slow connection, etc) and/or interests

**Customisability**

- Different users have different requirements
- This should be a function not only of presentation but also other aspects of the application

**Effective Use of Resources**

- As with any engineering discipline, we need to maximize the use of resources
  - CPU
  - Bandwith
  - Development and maintenance budget
Handling of Temporal Media

- Temporal media: media that has timing constraints
  - Synchronization
  - Interaction
  - Linking

Non functional characteristics

- Link Validity
  - Correctness
  - Relevance
  - Completeness
  - Integrity

Content Validity

- Correctness
- Relevance
- Completeness
- Integrity

Concept Organization

- How are composites created (how is the information structured)
- How are composited mapped to 'regions' in hyperpages
Consistency and Seamlessness

- We want the site to look uniform in structure and functionality
- It helps the reader navigate, understand and comprehend the site

Other characteristics

Maintenability and evolvability

- Web applications are expected to have a long life
- The need to evolve with:
  - Technology changes
  - Content updates
  - Fixing bugs

Reusability

- We need to reuse as much as we can:
  - Content
  - Scripts
  - Presentation
  - Links

Reliability and Robustness

- From the point of view of the reader:
  - How often does the application crash?
  - How many users can it simultaneously serve?
Testability, Validation and Verification

- How can we verify the quality of our application?
- Can we design it in a way that it is testable?
- The more complex the application, the more difficult it is to test

Interoperability, Flexibility, Portability, Genericity

- How easy our application can work in different environments
- How easy is it to port to a new platform?
- Can we provide our information to other applications (external or internal)

Legal, Political and Social Aspects

- Political correctness
- Social issues
- Ethical issues
- Legal Issues