Building User Experiences: Synchronizing User Experience Design and the Supporting Metadata and Taxonomy Infrastructure
by Carol A. Hert, Gary Carlson and Bram Wessel

EDITOR’S SUMMARY
For best results in website architecture and operation, the process of user experience design and taxonomy and metadata development should be synchronized, not developed in isolation. Bringing the two work streams together enables full consideration of how users, represented as personas, would interact with the site, pursuing likely needs and preferences. The persona review informs the technical infrastructure and functionality as well as the terminology and content types. Analysis of the site design and comparison with similar sites can lead to better appreciation of the user experience and expanded vocabulary links to improve access to content. The Key Paths methodology used by the design firm Factor captures likely user journeys to define design elements, allowing for multiple routes to appropriate content. Metadata must be available to support design, and functional design and content tagging must take advantage of metadata. The dynamic interaction and mutual support of the site’s content team and design team are keys to an effective product.

KEYWORDS
user experience, user models, metadata, information architecture, taxonomies

Despite their best intentions, user experience designers and taxonomy and metadata developers have often found that their work is not well connected, even though both are highly interrelated. For example, a design might be proposed that needs segmentation of content by user role, but there may not be metadata associated with content that captures the role, resulting in the need for detailed review of content and hand coding to create the experience. Taxonomists might build a taxonomy for roles without knowing which roles the design uses, leading to over- or under-specification of the taxonomy. In our recent projects, Gary Carlson Consulting and Factor have been tightly integrating these two different work streams, assuring that the experience design and metadata and taxonomy infrastructure and their governance and maintenance are synchronized and integrated (Figure 1).

Why bring these two different work streams into conjunction?
Gary Carlson Consulting (GCC) is often asked to provide a metadata and taxonomy infrastructure in a practice we call technical content strategy development. Essentially, the job is to specify the information model (metadata components, taxonomies and business rules associated with those components) and its governance to support

FIGURE 1. Integration of design and information.
business goals, including enhanced user experiences for search, online shopping and other tasks. Meeting these business goals often requires a coherent enterprise-scale content strategy that depends heavily on this information model. Many user experience projects are also driven by these exact same goals. Factor’s human-centered experience design practice drives towards building experiences that, along with being driven by user goals, are implementable and maintainable without heroic efforts; that is, they rely on metadata and taxonomic structures to guide navigation as well as assure appropriate content provision. For example, we might recommend that a website provide a “Company in the News” component that is populated automatically via usage of metadata about content (in this case, date of creation and a content type of news release).

GCC’s work is dependent on knowledge of the design – what is the organization attempting to accomplish via what experiences? What navigational structures and key pathways are proposed? What stakeholders need to engage with and maintain the model? Factor’s design work must present content in relevant and context-sensitive user experiences. To develop the most effective design Factor relies on a shared understanding of information modeling considerations such as how content can be tagged, what content types are in use and what structured data can be incorporated into the experience.

Both teams have found that working in isolation from each other means that relevant information does not get shared at the right time, the technical content strategy can be divorced from the end design and the end design either doesn’t fully exploit available metadata or is reliant on information about content and users that is not easily inferred. The result of not integrating these two practices is often that a project may meet the defined goals in the short term, but that the long-term success is placed in jeopardy due to a lack of coordination of the user design and the information model. How does our approach work in practice? We’ll look at several examples of typical work products used by both teams to indicate the connections.

Example 1: Informing Technical Infrastructure through Persona Review

Personas represent the “human” in human-centered design. They are the means through which user goals, mental models and information needs are captured in believable narratives and expressed in effective experience designs. The technical content strategy team can also use personas to inform types of taxonomies to build and to identify metadata elements. Figure 2 shows a persona for a commercial site selling nutritional and health products without taxonomy.

The technical content strategy team’s review extracts potential taxonomies, content types and functionality that would support this persona’s experience. In Figure 3 above, we highlight insights from the persona that directly inform the information model.
Example 2: Design Informs Taxonomy Development

As part of a recent web project, a taxonomy of audience types was needed for an educational institution that had a large and diverse undergraduate population. The technical content strategy team initiated the work stream by reviewing the existing website along with sites of comparable institutions and by conducting research interviews with the client project team. As the design team began developing personas, defining the design and modeling the user experience, the aforementioned research and analysis suggested that the undergraduate population was quite diverse and needed multiple entry points and paths through the content. This, in turn, led to further specification in the taxonomy to assure tagged content could support the experience as shown in Table 1.

Example 3: Extracting Metadata Requirements from Key Paths

A methodology used by Factor’s design team is to model user journeys through content in order to articulate design components. The resulting key paths are critical to the technical content strategy team to confirm that the information model includes the right content types, taxonomies and related functionality to segment content for automatic provision. Below is a snippet of a key path modeling the journey of a medical patient who has some symptoms of a condition and wants to understand treatment options. The path indicates several possible entry points and types of content/experiences to be provided. From the technical content strategy team’s perspective, the flow provides further insight into needed content types: articles on conditions, discussion groups and potentially a directory of doctors or an online form to input conditions, symptoms or treatments to find doctors. Additionally, the path indicates that taxonomies for conditions, symptoms and likely treatments will be needed and that they need to be related to each other and to doctors that specialize in those areas.

These examples capture the synergistic relationship of the design and technical content strategy teams throughout the integrated process. The technical content strategy team determines the answers to questions such as:

- Can the information model support the information delivery specified by the design?
  - Do all the taxonomies exist and are they up-to-date?
  - Do the taxonomies support the design experience?
  - When taxonomies are exposed in the design (for example, in navigational aids) is terminology appropriate for the users?

<table>
<thead>
<tr>
<th>TABLE 1. Revisions to the taxonomy of audience types</th>
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<tr>
<td><strong>Initial Draft Based on Comparative Website Reviews and Stakeholder Discussions</strong></td>
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<tr>
<td>Administrators</td>
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<tr>
<td>Alumni</td>
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<tr>
<td>Community Neighbors</td>
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<td>Faculty and Staff</td>
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<td>Parents</td>
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<td>Prospective Students</td>
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Note that student types have expanded representing different paths for students in the site; content can be tagged with multiple student terms reducing the problems associated with non-mutually exclusive terms in this area.
Can the desired relationships between taxonomies and content be modeled?
- Are the relationships well enough defined to be applied to the concepts?
- Do we have the business rules needed to drive content to for the experience?

The design term is better able to answer questions such as
- Can the design be executed effectively and efficiently via available metadata?
- Is the content tagged and managed such that it can be implemented in the design?
  - Are all the required taxonomies in place and up-to-date?
  - Do the tags support the design goals?
- Are our templates for content creation synched to the content types?
- Do we have access to the correct metadata to support search, navigation and other design aspects?
  - Does the correct information model exist?
  - Does the technical infrastructure allow search and navigation functionality to access the information model in a viable and scalable manner?

- Are the systems using the information model synchronized appropriately?

These examples provide a very brief sense of some of our points of integration. We also work jointly on ongoing maintenance, including strategy and implementation of editorial and information model governance. Again, these two need to be synchronized to support our customer’s needs for appropriate and sustainable designs.

We have found that by tightly integrating our efforts both teams and clients benefit. The experience design team builds designs that are sustainable and manageable using available metadata, and the technical content strategy team has full access to the design considerations that drive its work. The customer gets a design that is resonant with the organization’s goals and implementable over both the short and long term of the project.

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