

Quality Attributes Workshop
Bates College Integrated Knowledge Environment

Participant Packet

PROJECT OVERVIEW:

The project seeks to design a software architecture to support an integrated knowledge environment (IKE) for Bates College. An IKE is an online experience for members of the College community that simplifies the collaboration, creation, storage, organization, publishing, and access to knowledge, beyond the classroom, and across media and devices. This does not mean that the College desires a single unified system. Instead the College desires many systems working together in an orchestrated way to provide the desired experiences.

The goals of the implemented system are as follows.

- 1) Enhance and extend the institution's educational mission and effective communication among people, including persuasive, informative, collaborative, procedural, and transactional experiences.
- 2) Engage future and current students, alumni, faculty, staff, partners, and philanthropists by providing interesting, immersive, and meaningful online experiences.
- 3) Raise awareness of people, groups, connections, ideas, and events through easy-to-use experiences.

The objectives of the implemented software architecture are as follows.

- 1) Increase the availability of Internet services (e.g., the Web site is online when a user requests a page).
- 2) Improve the "findability" of content through the use of the latest technology (e.g., faceted search, meta-data, classification, tags, geo-location, time).
- 3) Enhance the usability of user interfaces and tools, simplify the publishing of content (e.g., text, images, events, multimedia), and streamline transactions while presenting them in context (e.g., course registration in context with catalog information).
- 4) Increase the relevancy of content and experiences.
- 5) Improve the accuracy of content.
- 6) Improve the integration of features and capabilities.
- 7) Provide social experiences.
- 8) Improve the accessibility of services for both browser and non-browser client software and devices.
- 9) Provide a method of setting conversion goals and measuring conversions as well as usage statistics and other measurable interactions.
- 10) Provide personalization capabilities within Internet services.

The project will develop a documented software architecture for an integrated knowledge environment which will be designed to meet the functional needs, quality attribute requirements, and environmental constraints of the College. The documented software architecture will be an invaluable tool when making decisions about components of the architecture (software, systems, and processes). It will establish rules of engagement between systems and their environment. The architecture will define the behavior and qualities of each component represented in the architecture and will serve as a baseline for evaluating new products which are being considered for use in our environment as well as for evaluating the state of our current environment.

PROCESS OVERVIEW:

Extensive research in the form of listening sessions has been conducted to determine what the extended Bates community expects from our web presence. Now we need to begin the process of creating a software architecture that can support these expectations. The next step is a Quality Attributes Workshop (QAW) that will help us to gather input from a wide range of stakeholders at a very early stage of the software design process.

As a participant in the QAW you will be asked to help us create at least one scenario describing an aspect of the system that is important to your work or to your constituents. Each scenario will describe a stimulus, the environment in which it occurs and the expected response from the system.

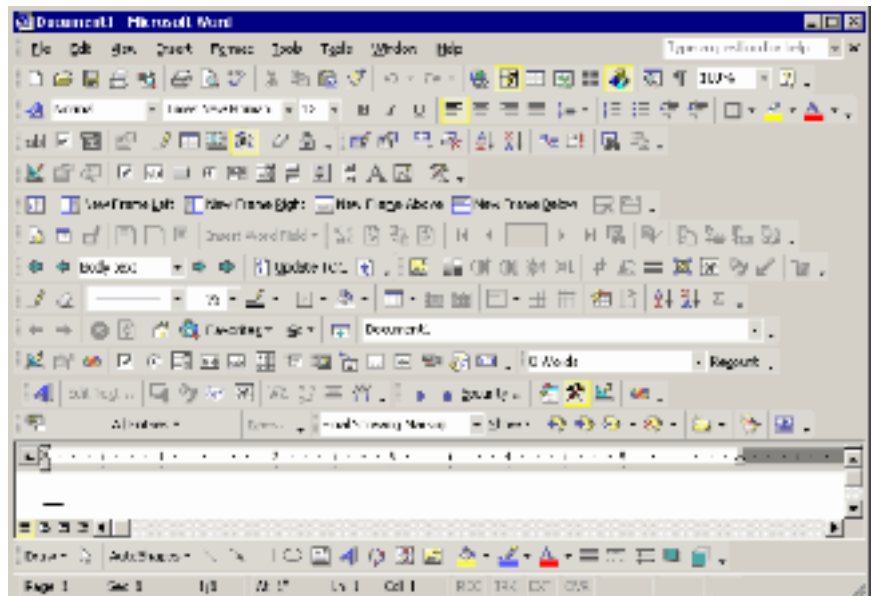
An example scenario:

stimulus: When content is published
environment: during peak usage
response: the content is available via the Web site within 2 minutes.

Once we've created an exhaustive list of these scenarios, we will review them and combine any that are similar. Next we will ask the group to prioritize the scenarios, so that we can better understand how to balance any conflicts.

A single interface can't both be extremely easy for a beginner to use, and simultaneously contain every possible feature available for the power user.

How are these conflicts balanced? Prioritizing the features that are frequently needed by the majority of users, enables the software designer to balance potentially conflicting requirements.



Finally, if there is time remaining, we will collectively work to enhance the highest priority scenarios with additional information. These scenarios will then be used by ISS to guide the design process, and to evaluate the system as it is being developed, and after it has been deployed.

SCHEDULE:

10:00 – 11:20	Welcome and Introductions Quality Attribute Workshop overview presentation Business analysis presentation
11:20 – 11:30	10 minute break
11:30 – 12:30	Software architecture plan presentation Identification of architectural drivers
12:30 – 12:40	10 minute break
12:40 – 1:50	Working Lunch (provided) Seed scenarios
1:50 – 2:00	10 minute break
2:00 – 3:00	Scenario brainstorming
3:00 – 4:00	Scenario consolidation Scenario prioritization Scenario refinement
4:00 – 4:30	Wrap-up Action items End

EXAMPLE SEED SCENARIOS:

1. When content is tagged with a user-defined tag or controlled vocabulary term, during peak usage, the system responds by making the content available via the appropriate RSS feed within 2 minutes. (use case scenario, quality attribute: performance)
2. When content is published with a user-defined tag or controlled vocabulary term that one or more user has subscribed to, during peak usage, the system will send a notification e-mail to each subscriber within 2 minutes of publishing the content. (use case scenario, quality attribute: performance)
3. When a user chooses to limit access to a document, the system will control access to the document by restricting access to the designated user(s) or users within the designated group(s). (use case scenario, quality attribute: security)
4. When a content server experiences a hardware or software malfunction that results in an inability to provide the designated service, the system will re-route service requests to an alternate server within 1 minute of the detection of the failure resulting in downtime of no more than two minutes. (exploratory scenario, quality attribute: availability)
5. In the event that a new social feature (in addition to tagging, comments, rating, and bookmarking) should come into being, developers will be able to add the new capability to the relevant components of the system in less than 40 working hours without the need for architectural modifications. (growth scenario, quality attribute: extensibility)
6. In the event that a piece of content (e.g., text, photo, audio, video) is moved to a new location, the content manager/owner will have the option of specifying a URL to the new location so that requests for the resource at the old location can be immediately redirected to the new location without causing visible "404: File not Found" errors. (exploratory scenario, quality attribute: modifiability)
7. A content editor decides the edits she has made to some content should be removed and the previous revision of the content restored. After receiving instructions to rollback, even during peak usage, the system rolls back the changes and the previous revision of the content is restored within 10 seconds. (use case scenario, quality attribute: performance)