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# Health Level Seven Strategy

## Functional Requirements v. 2.0

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Overview

This document outlines the functional recommendations for the HL7.org site strategy. The goal for the new HL7 site is to facilitate community and to build a virtual edifice for an organization whose business is conducted almost entirely in a virtual environment. By providing a consistent, positive user experience for members and non-members alike – we hope to build a web presence that is better representative of the organization and its members, as well as a site that reflects the credibility of the organization.

Users should be able to navigate, search, and accomplish primary tasks easily and quickly providing greater efficiency across the organization. At the same time, the site will balance an intuitive user experience with the need to support and automate complex businesses processes and facilitate working group collaboration.

This balance will be attained through an overhaul of the navigational system of the site, as well as re-thinking and integrating several key applications that will provide a more seamless user experience.

Additionally, the new site information architecture will aim to support organic growth of the organization to accommodate the strategic changes that are being planned for the near future. The ability to categorize products and services, documentation, and working groups will be a key feature to support these changes.

Challenges

Through a comprehensive set of stakeholder interviews, and user research, several core issues with the current site have been identified as areas for improvement. These findings set the foundation for the functional requirements that are outlined later in this document. All research indicated that the current iteration of the HL7 site is particularly hard to navigate. Improving this experience is a foundational element in the new site strategy.

Additionally, several other key issues were identified:

- Lack of a universal search tool
- Not adequate support for allowing functionality as defined by user roles
- Poor support for financial transactions
- Difficult/manual user administration
- Provide more robust working group administration
- Provide better mechanism for new users to learn about HL7
- Create more robust calendar/event management
- Provide more marketing-focused approach for non-members
- Several of the current applications that support the organizational business are not integrated with the same authentication system
- Better reporting and metric data
Current Web Properties

- http://www.hl7.org

Goals and Objectives

- Improve the user experience by restructuring the site navigation, and integrating a universal site search
- Provide an interactive platform to support the business of the working groups
- Serve as a platform to garner new membership, and market products and services
- Provide a central location for the free and open exchange of ideas and content
- Build a cohesive infrastructure for all applications within the site
- Support multiple user roles, and different views/capabilities assigned to each role
- Build platform for easier site maintenance
- Upgrade membership and e-commerce systems to automate current manual tasks
- Site design must be extensible to anticipate and accommodate expansion in sheer amount of material and type of material

Strategic Areas of Focus

Navigation

The existing navigation of HL7.org was a recurrent theme in our initial discussions with the HL7 staff and user base. Overhauling the primary and secondary navigation to fit into intuitive categories is at the heart of the web strategy for HL7.

Additionally, there are other key mechanisms that we can provide to users to enhance their ability to navigate a complex and robust site. The inclusion of a full, comprehensive search utility will allow the entire user base the ability to quickly find documents, or better map their needs to the proper working groups within the HL7 community. A knowledge tree will anticipate the needs of new users, and help guide them to relevant information. Additionally, custom user views based on role will provide the key tools, relevant working groups and favorite documents of each user to enhance their daily/weekly experience.

Collaboration

Facilitating the collaboration of the working groups is a primary function of the site. Much of the conversation was previously being held/tracked through list serves. While this model has served the organization well, we propose moving to forums as the primary technology for collaboration. Searchability, longevity of information, user control, and moderation all led to the recommendation. Email subscription at the thread level will still provide the "push" mechanism that HL7 members are used to.

Additional means of collaboration are suggested in the information architecture such as commenting on documents, and better user role support and document categorization for working group document management.
Automation
This new strategy will reduce the amount of manual effort expended on maintaining the entire HL7 site, such as current membership database, general site content, and bookstore purchases – allowing HL7 staff to focus on more strategic areas. In providing a central location for the discussion and the dissemination of working group materials, HL7.org will support more efficient processes, leading to enhanced productivity.

Existing External Application Integration Points
- PeachTree – HQ accounting software
- Project Insight – Project management tool – integrate by providing a link to this application
- GForge – Work-product development management tool, currently used for our Tooling Registry – integrate by authentication support (NOTE: This is a change from our previous request)
- Conference Call Service Provider
- Single sign-on integration when possible when dealing with external applications
- Other external applications as deemed appropriate (we assume that determining whether coding or an off the shelf applications will be used to fulfill the functions is outside the scope of this document).

User Roles & Entitlement
The HL7.org site will be built with a single entitlement engine that will drive different views (sub sites). The following user roles will be built into the entitlement engine.

Business Rules
- Roles will be based on a user archetype model
- Roles and responsibilities can be controlled at the archetype level by the HL7 Administrator. Responsibilities (functions) will include but are not limited to:
  - Search/view public content
  - Maintain profile in the system
  - Bookmark content
  - Be flagged as “certified”
  - Opt-in/Opt-out of information
  - View records of purchases
  - Participate in WorkGroup Collaboration
  - Participate in balloting
  - Participate in elections
  - Manage working group content
- Document management
- Administrative working group users
- Assign working group content mgmt access
- Access Board member e-Balloting
- Maintain non-working group content
- Administer all users
- View reporting

- Assigning an archetype to a user is done by default at registration, but can be refined by the HL7 staff or HL7 Administrator
- Archetypes are not mutually exclusive, one user can be assigned to multiple archetypes

**Suggested User Archetypes**

This list is a broad overview of some archetypes that have been identified in the discovery process. This list is not comprehensive, as the system will accommodate flexibility to grow and change as needed.

- **Visitors** – Browsers looking to find out more about the HL7 organization, initiatives and the standards themselves. General users are potential volunteers or members.
- **Participant** – Users who are not members, but who maintain a profile within the site so that they can be listed as certified, make purchases or flag bookmarked content. These users can also be granted additional rights by administrative staff.
- **Students** – Discounted members, who are actively contributing to the HL7 organization at the working group level, but do not retain voting rights
- **Benefactors** – corporate, non-voting members, with download privileges
- **Member** – A paid member of the organization, with download privileges, balloting rights and discounts.
- **Working Group Facilitator**: Can be assigned by staff or the co-chair to administrate members and content at the working group level
- **Empowered Participant** – Participant who is assigned special rights in order to accomplish a specific goal
- **Co-Chair**: Maintains members and content at the working group level. Has unique balloting rights.
- **Board Member** – Can participate at the working group level, but also can participate in board e-ballot process, and see/manage private/board-related content
- **HL7 Staff**: This user will be able to manipulate most content, administer other users, determine featured pieces of content and messages, and access reporting tools.
- **HL7 Administrator**: This user will have full access rights to the system.
### Phase I Functional Modules

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<th>Module</th>
<th>Description</th>
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<tr>
<td>Infrastructure</td>
<td>HL7 Entitlement</td>
<td>Drives the user views and the ability to contribute content. This ties into most other modules.</td>
</tr>
<tr>
<td>Application</td>
<td>Content Management</td>
<td>Provides the structure for not only uploading content and assigning it to appropriate user groups, but tracking usage patterns, and ability to be viewed by different roles.</td>
</tr>
<tr>
<td>Application</td>
<td>Document Management</td>
<td>Provides the structure for not only uploading documents and assigning it to appropriate user groups, but supporting full workflow, versioning, usage patterns, comments, and ability to be viewed by different roles.</td>
</tr>
<tr>
<td>Application</td>
<td>News</td>
<td>This module is an extension of the content management platform and allows the creation of news, and the ability to repurpose that news as needed by flagging it appropriately</td>
</tr>
<tr>
<td>Application</td>
<td>Discussion Forum</td>
<td>A threaded discussion forum that allows logged-in users to discuss relevant issues. The categorical structure will be determined by the administrators. Email notification is a key attribute.</td>
</tr>
<tr>
<td>Application</td>
<td>Wiki</td>
<td>This is a content collaboration tool that will allow people to participate in crafting documentation in a group effort, through a web-browser. This structure will provide a mechanism for working groups to collaborate more efficiently.</td>
</tr>
<tr>
<td>Application</td>
<td>Search</td>
<td>Provides both a simple and advanced search that entry of text searches against a pre-defined set of attributes and content types.</td>
</tr>
<tr>
<td>Application</td>
<td>Custom User Views</td>
<td>Drives the views of each logged-in user, determined by user specific preferences (Favorites, for example), document access by role, and application access by role and working group views.</td>
</tr>
<tr>
<td>Application</td>
<td>Calendar/Events Management</td>
<td>Allows users to see and learn more about upcoming events, as well as allowing users to register for an event.</td>
</tr>
<tr>
<td>Category</td>
<td>Module</td>
<td>Description</td>
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<tr>
<td>Application</td>
<td>International Affiliate Management</td>
<td>Allows international affiliate chairs to maintain own page within the HL7.org site, and provides gateway to affiliate site.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Administrative Functions</td>
<td>Allows for management of the entire HL7.org system, including all of the other modules</td>
</tr>
<tr>
<td>Application/E-Commerce</td>
<td>Membership Engine</td>
<td>Automates signup, billing and dues collection, and letting members update their own information. Secure admin accounts let you manage your organization, access your critical data and generate membership reports.</td>
</tr>
<tr>
<td>E-Commerce</td>
<td>Products/Services Store</td>
<td>Allows any role to make purchases (if no profile in existing system, user will be asked to create profile)</td>
</tr>
<tr>
<td>Application</td>
<td>Balloting</td>
<td>Ballot processing, voting, and reconciliation. It was determined that for the most part, the existing system supports the HL7 needs. Additional desired functionality: searchable ballot status.</td>
</tr>
<tr>
<td>Application</td>
<td>Conference Calls</td>
<td>Reserving, scheduling, joining and searching for conference calls</td>
</tr>
<tr>
<td>Application</td>
<td>e-Balloting for Board of Directors</td>
<td>Balloting mechanism specific to board of directors</td>
</tr>
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<td>Application</td>
<td>Certification Search</td>
<td>Allow for users to search for HL7 users who are flagged with certification</td>
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<tr>
<td>Application</td>
<td>Elections</td>
<td>Application that allows for nomination and subsequent voting on these nominations for specific posts within the working groups</td>
</tr>
<tr>
<td>Application</td>
<td>Job Board</td>
<td>This widget allows members and non-members to purchase and post jobs to the HL7 job board. Organizational members can post jobs for free.</td>
</tr>
<tr>
<td>Category</td>
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<td>Description</td>
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<tr>
<td>Application</td>
<td>Email Blast Integration</td>
<td>Various mechanisms throughout the site will trigger events in an email marketing system. The requirements from this will be determined after a vendor selection exercise and through the technical requirements.</td>
</tr>
<tr>
<td>Application</td>
<td>Evaluations</td>
<td>Application that allows for the submission of online evaluations.</td>
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<tr>
<td>Application</td>
<td>Polling</td>
<td>Application that allows for real-time, online polling.</td>
</tr>
<tr>
<td>Application</td>
<td>Standards Proposals Databases</td>
<td>Support for submitting and managing proposals to changes to the various standards.</td>
</tr>
<tr>
<td>Application</td>
<td>Project Insight</td>
<td>This is an existing Project Management application hosted elsewhere.</td>
</tr>
<tr>
<td>Application</td>
<td>GForge</td>
<td>This is an existing work-product development management tool which currently houses our Tooling Registry among other things.</td>
</tr>
<tr>
<td>Application</td>
<td>OID Registry</td>
<td>See registry on current HL7 site.</td>
</tr>
<tr>
<td>Application</td>
<td>Profile tool</td>
<td>See tool on existing HL7 site.</td>
</tr>
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Entitlement (HL7 User Database)
This piece of functionality provides the mechanism to deal with registration, profiles, unique user views, and other assorted pieces of user management.

System Integration
- Should integrate with all other components in the system to assign user roles within those applications

Additional Scoping
- Wireframes
- Technical Requirements

Requirements
1. Must be able to register online
   1.1. Required before participation or collaboration
   1.2. Required for creating custom user views
   1.3. Required for making purchases
   1.4. Required for opting-in to communications
2. Change/Edit User info
   2.1. Name
   2.2. Address/alternate address
   2.3. Title
   2.4. Associated Organization
      2.4.1. Changes to this will be flagged for approval, and any member privileges will be limited until changes are approved by administrator/organization
   2.5. Primary Email
      2.5.1. alternate email address
   2.6. Phone/alternate phone/cell/fax, etc
   2.7. Membership History (previous membership status, positions held)
   2.8. Content contribution tracked on the backend
   2.9. Preferred communications options
   2.10. User role
   2.11. User preferences (e.g., Meal Type—there may be other preferences to track)
   2.12. Purchase History
      2.12.1. Events
   2.13. Working groups
3. Password
   3.1. Changing and existing password in the system
   3.2. Requesting a forgotten password from the system
4. User Administration
   4.1. Roles will be based on a user archetype model
4.2. Roles and responsibilities can be controlled at the archetype level by the HL7 Administrator
4.3. Assigning an archetype to a user is done by default at registration, but can be refined by the HL7 staff or HL7 Administrator
4.4. Archetypes are not mutually exclusive, one user can be assigned to multiple archetypes

Content Management
The content and document management system serve as the central web publishing tool and will drive the majority of the site content.

System Integration
- Entitlement
- Membership Engine
- Calendar/Events
- News
- Document Management

Additional Scoping
- Content Requirements
- Wireframes
- Technical Requirements

Requirements
1. Working Group Content
   1.1. Browser-based editing for document titles/description
   1.2. Fully searchable, including metadata and document content
   1.3. Ability to assign a expiry date to content
   1.4. Upon expiry, content owner will receive email asking them to evaluate content
   1.5. Be able to flag content access by working group
   1.6. Be able to flag content access by role
   1.7. Entitlement integration
   1.8. Users can tag content as a “Favorite” for easy navigation
   1.9. Meta data and taxonomy support
   1.10. Auto generated site map

Document Management
Provides the structure for not only uploading documents and assigning it to appropriate user groups, but supporting full workflow, versioning, usage patterns, comments, and ability to be viewed by different roles.
Refer to the Document Management Module in Phase I Functional Modules earlier in the document. The last line of the description includes the following: “ability to be viewed by different roles.” That is not contained in this section and needs to be added.

**System Integration**
- Entitlement
- Membership Engine
- Calendar/Events
- News
- Content Management

**Additional Scoping**
- Content Requirements
- Wireframes
- Technical Requirements

**Requirements**

1. **Working Group Content**
   1.1. Document upload for assigned users
   1.2. Browser-based editing for document titles/description
   1.3. Document association/grouping (by working group)
   1.4. Fully searchable, including metadata and document content
   1.5. Ability to assign a expiry date to content
   1.6. Upon expiry, content owner will receive email asking them to evaluate content
      1.6.1. Expired documents can be flagged as searchable or non-searchable
   1.7. Be able to provide audit trails for revised and deleted documents
   1.8. Be able to delete documents (role and rights driven)
   1.9. Be able to re-categorize documents
   1.10. Locking files so they cannot be overwritten
   1.11. Reporting data about the document and use that criteria for search
   1.12. Be able to flag document access by working group
   1.13. Be able to flag document access by role (member, non-member, facilitator, board, etc)
   1.14. Users can have flat commenting structure on content
   1.15. Users can tag content as a “Favorite” for easy navigation
   1.16. Should support multiple file types
      1.16.1. DB
      1.16.2. Visio
      1.16.3. Word
      1.16.4. XML
   1.17. Ability to Check-In/Check-Out files (to roles with appropriate rights)
   1.18. Ability to version files (including recovery of earlier versions)
   1.19. Ability to branch files (ability to branch a version and collapse branch)
   1.20. Ability to create file associated tasks (can be included in Metadata)
1.21. Document should be able to be repurposed in multiple sections of the HL7 site

**News**

This module is an extension of the content management platform and allows the creation of news, and the ability to repurpose that news as needed by flagging it appropriately

**System Integration**
- Entitlement

**Additional Scoping**
- Content Requirements
- Wireframes
- Technical Requirements

**Requirements**
1. **Working Group Content**
   1.1. Browser-based editing for document titles/subheads/content
   1.2. Ability to associate an image with a news item
   1.3. Ability to assign a expiry date to content
   1.4. Ability to flag news content to appear in different areas of site
   1.5. HL7 Administrators have privileges (what does “privileges” mean here? (i.e., how are they different from the other items listed in this section?)
   1.6. Manual delete of news stories
   1.7. Provide a chronologically organized archive of news stories
   1.8. RSS

**Wiki**

This is a content collaboration/publication tool that will allow people to participate in crafting documentation in a group effort, through a web-browser. This structure will provide a mechanism for working groups to collaborate more efficiently.

**System Integration**
- Entitlement

**Additional Scoping**
- Wireframes
- Technical Requirements

**Requirements**
1. Add a wiki component to any working group(s)(i.e., wiki content may span committees)
2. Add a wiki component to the site as a whole (i.e., not associated with any specific committee)
3. Add content to a section of the wiki
4. Edit content to a section of the wiki
5. Track changes of edits within the site
6. Lock content of a section of wiki upon completion
7. Archive a section of the wiki, so it is no longer available, but the data remains on file
8. Add links to content from within the wiki
9. Sends e-mail when wiki content changes (when a user has configured that they want this option)
10. Search content available on the wiki

**Discussion Forum**

This is a threaded discussion forum that will allow users to discuss various categories of information. Those categories are to be determined by the portal administrators.

**System Integration**

- Entitlement

**Additional Scoping**

- Wireframes
- Technical Requirements

**Requirements**

1. Multi-threaded discussion lists
2. Allows for both web and e-mail posting
3. Handles documents as references (links) or as embedded content
4. Integration with entitlement system for single sign on
5. Topic subscription and notification services
   5.1. Email notification
   5.2. RSS
6. Administrative controls & moderation
7. Optional user moderation privileges (can assign moderation to someone other than staff if desired)
8. Multiple access rights and security
9. Attach documents
10. Relate posts to other topics
11. Basic reporting functionality
12. Role-based permissions
13. Cross platform editor for rich text formatting
14. Multi-lingual support and interface
15. Keyword search
16. Threaded message display
17. Censor list for select keywords
18. End user profile management tools
19. Private topics
20. Open API for integration with outside systems

**Search**

This will provide both a simple and advanced search that entry of text that searches against a pre-defined set of attributes and content types.

**System Integration**

- Content Management
- Entitlement
- Membership

**Additional Scoping**

- Technical Requirements
- Wireframes

**Requirements**

1. Simple search
   1.1. text string search
   1.2. searches against predefined attributes
      1.2.1. date
      1.2.2. author
      1.2.3. metadata
      1.2.4. External applications (.e.g, GForge, Project Insight, etc)
   1.3. searches against predefined content type (working group documentation, news, wikis, etc)
2. Advanced Search
   2.1. Establish multiple search criteria
      2.1.1. “Sunset” documents
   2.2. Allows alternate sorting of search results
3. Other recommended content
   3.1. Offers alternate content based on keyword identification
4. Allow documents returned from searches to be downloaded with or without payment based on the status of the document and the membership status of the user
Custom User Views
This will drive the views of each logged-in user, determined by both user specific preferences and document access by role.

System Integration
- Entitlement
- Membership Engine
- Content Management

Additional Scoping
- Technical Requirements
- Wireframes

Requirements
1. Home page provides the following custom information, based on profile
   1.1. Shows relevant working groups
   1.2. Shows “favorite” documents
   1.3. Shows only documents appropriate to that user role
2. MyHL7 navigation
   2.1. Shows relevant working groups
   2.2. Shows “favorite” documents
   2.3. Shows only documents appropriate to that user role

Calendar/Event Management
This is a web-based calendar that provides the ability for users to see and learn more about upcoming events

System Integration
- Event Registration Engine
- Conference Call Application
- User Database
- Membership Engine
- Content/Document Management
- International Affiliate Content Module

Additional Scoping
- Technical Requirements
- Wireframes

Requirements
1. General/Usual calendar functionality
1.1. Able to view by day, week, month and working group
1.2. Event View with pertinent info
2. Events should be categorized by type:
   2.1. Working Group Meeting
   2.2. Education Summits
   2.3. Out of Cycle Meetings
   2.4. Affiliate Events
   2.5. Co-Sponsored Events
   2.6. Harmonization
   2.7. Conference Calls
   2.8. Additional event categories will be administered by HL7 staff
3. Assign a range of dates to an event
   3.1. assign fees associated with registration deadlines
4. Conference calls for a specific date view should be available (toggle, or link)
5. Associate events with working groups, and flag content to populate specific working group home
6. Creating a registration for a particular event
   6.1. Editing registration for an event, with consideration for early bird and post early bird registration prices, adding an additional day, tutorial, etc to a registration, etc.
   6.2. Cancelling registration for an event
       6.2.1. Receiving refund for cancelled event
   6.3. Downloading a receipt for an event
6.4. User cannot register event without creating profile in system
   6.4.1. User can enter/edit meal preference in profile
   6.4.2. User role dictates cost associated with event
6.5. Provide automatic reminders to user home pages/working group homes, to promote events (opening registration, early bird, last change, closing registration)
6.6. Event Management
   6.6.1. Provide co-chairs a means to interact with event information per-working group
       6.6.1.1. Upload facilities for agendas
       6.6.1.2. Entering meeting needs (AV, room space, etc.)
       6.6.1.3. Ability to associate documents with an event
           6.6.1.3.1. Permission can be assigned by staff
       6.6.2. Event access driven by role (board only events, as an example)
7. All events should have the ability to add to one’s Microsoft Outlook calendar via iCal integration

**International Affiliate Content Module**
This allows administrators to manage content and users across the system, as well as view reporting.
System Integration
- Content Management
- Entitlement Engine
- News
- Calendar/Events

Additional Scoping
- Technical Requirements
- Wireframes

Requirements
1. Affiliate Chairs have privileges
   1.1. Post general content
   1.2. Provide link to affiliate site
   1.3. Affiliate can contribute news stories to the affiliate page
       1.3.1. System will provide a discreet RSS feed for affiliate news
       1.3.2. Affiliate news can be flagged by staff to appear with general news
   1.4. Contribute events
       1.4.1. System will provide a discreet RSS feed for affiliate events
       1.4.2. Affiliate news can be flagged by staff to appear with general news
2. Supports a wiki for the International Affiliate site as a whole

Administrative Functions
This allows administrators to manage content and users across the system, as well as view reporting.

System Integration
- All

Additional Scoping
- Technical Requirements
- Wireframes

Requirements
1. Content Administration – Add/Edit/Delete
   1.1. News
   1.2. Events
       1.2.1. Events can be assigned master categories
   1.3. Upload/Administer Products and Services
       1.3.1. Products and Services master categories
1.4. General/Evergreen site content
2. Ability to create working groups
3. User Administration - Add/Edit/Delete
   3.1. Assign users to working groups
   3.2. Change User Status
4. View Pre-Defined Reports

**Membership Engine**
This piece of functionality ties into the Entitlement part of the website by creating an online application process that automates the credit card transaction necessary to create, renew or re-instate membership at both the individual and the organizational level.

**System Integration**
- Entitlement Engine
- E-commerce component
- Peach Tree Accounting system
- Calendar/Events Module

**Additional Scoping**
- Wireframes
- Technical Requirements

**Requirements**
1. Two types of Membership:
   1.1. Individual
      1.1.1. Downloadable copy of the standards (one)
      1.1.2. Voting privileges on standards being balloted by the general membership
      1.1.3. Discounts on working group meeting registration and tutorial fees
      1.1.4. Discounts in Products/Services Store
      1.1.5. Reduced Rates for online job posting
   1.2. Organization
      1.2.1. Downloadable copy of the standards (multiple)
      1.2.2. Voting privileges to each member underneath an organizational umbrella on standards being balloted by the general membership
      1.2.3. Discounts on working group meeting registration and tutorial fees
      1.2.4. Discounts in Products/Services Store
      1.2.5. Reduced Rates for online job posting
2. Individual Member Profile Management
   2.1. Ties into HL7 User Database
   2.2. Membership History will be tracked, stored and queried for administrative reporting
3. Organizational Member Profile and Management
   3.1.1. Organizational Description in Profile
3.1.2. Membership History will be tracked, stored and queried for administrative reporting

3.1.3. Organizational member roster that allows the following functionality:
   − Add a user
   − Associate an existing user
   − Remove a user from your organization
   − Assign user voting privileges
   − Create “benefactor” login

4. Memberships will have numerous states
   4.1. Pending – when registering online, all members-to-be will have a profile and reduced MyHL7 functionality until membership is approved by HL7 staff
   4.2. Current
   4.3. Expired
   4.4. Archived

5. Membership Renewal
   5.1. Auto-generated renewal email blasts to warn of membership ending
   5.2. Members can renew status at any time via simple e-commerce driven tool

6. Membership Declaration
   6.1. Choose working groups in which to participate (or renew participation)

**Products/Services Store**

The Products/Service store allows for any end user to purchase the standards and/or other documentation from HL7.org via a secure, real-time credit card transaction.

**System Integration**

- Membership Engine
- HL7 User Database
- Administrative Tools

**Additional Scoping**

- Wireframes
- Technical Requirements

**Requirements**

1. Products/Services List
   1.1. Name
   1.2. Description
   1.3. Member Price

2. Shopping cart functionality
   2.1. Users should be able to browse, then add multiple items in their “shopping cart” before choosing to complete their transaction
2.2. In the shopping cart view they should have the option to delete items or continue to checkout

3. Checkout
   3.1. If user does not have profile, they will be prompted to create one
   3.2. The users’ profile will pre-populate the checkout page
   3.3. Secure Transaction
      3.4. Encrypted (SSL) transaction
      3.5. Payment Gateway handles credit card information via an Internet Merchant Account
      3.6. The Internet Merchant Account processes the transfer of funds
      3.7. The transaction happens in “real time” providing a seamless user experience
      3.8. No credit card information can be directly accessed or modified by an end-user
      3.9. All credit card information is stored in a separate database from all other applications
      3.10. Credit Card information is never stored in the database, except for the last four digits

4. Thank you page appears, detailing purchase.
   4.1. If applicable, document is available for downloading

5. If card transaction fails, status message is provided to user which refers them to a customer service contact or prompts them to try again

NOTE: HL7 will develop functional requirements for the balloting site.

**Conference Calls**

The conference call center allows for scheduling and viewing upcoming conference calls. It was determined that for the most part, the existing system supports the HL7 needs.

**System Integration**
- Entitlement
- Membership
- Calendar/Event

**Additional Scoping**
- Wireframes
- Creative Development
- Technical Requirements

**Requirements**
1. Anyone can view all scheduled conference calls, but entitlement determines what details are available
2. Ability to schedule calls is contingent upon entitlement rights
   2.1. The call center allows you to schedule a single (one time occurrence) or repeating (every week)
2.2. Users will have the ability to name calls
2.3. Users can add an agenda to the call
2.4. Users can mark a call as “secure” so no agenda or descriptive information is available to the public
2.5. Reminders for calls will automatically go out to the assigned list four (4) days prior to the actual call date. Do not pre-define. Administrator should be able to change the number of days
2.6. You can change basic information for an individual call, even if it occurs as part of a series of calls.
2.7. Individual calls can be cancelled and an automatic reminder will go to the working group to which that call has been assigned.

3. Calls are scheduled as requests and are not available publicly until they have been approved by Headquarters.
3.1. Headquarters must have an interface to approve pending call requests
3.2. Upon approval, the system assigns the call to a number and pin information
3.3. Call requester should receive email notification with pertinent information a once call is approved

4. Conference calls can only be scheduled out to the last day of the NEXT working group meeting.
5. A reminder for that call (or the next one in a sequence of weekly calls) will automatically be sent to the working group associated with this call four (4) days prior This appears to be a repeat of 2.5 above.
6. Can Link to an agenda that may be stored on a wiki or on the working group’s page
7. All events should have the ability to add to one’s Microsoft Outlook calendar via iCal integration

**e-Balloting for Board of Directors**

This piece of functionality provides a mechanism for the board to conduct board-specific balloting in a private arena.

**System Integration**
- Entitlement
- Content/Document Management

**Additional Scoping**
- Wireframes
- Technical Requirements
- Should be determined if this can be handled as a subset of the regular balloting process or if this needs to be a separate app. Should discuss with M. Craig.

**Requirements**
1. Needs to support the process currently conducted over email
1.1. Board member makes motion
1.2. Other member seconds it
1.3. Discussions occur regarding issue
1.4. Vote occurs
1.5. History of all actions and participants is recorded for future reference/query

**HL7 Certified Search**

This piece of functionality provides a mechanism for all site visitors to query the HL7 user database to find a list of certified users, and view their existing profiles.

**System Integration**
- Entitlement
- Membership

**Additional Scoping**
- Wireframes
- Technical Requirements

**Requirements**
1. Simple search
   1.1. by keyword
   1.2. by name
   1.3. by organization
2. Returns list of certified professionals
   2.1. Includes basic profile information
3. Administrators need to be able to flag users as certified
   3.1. Needs to support different levels of certification for future
   3.2. Levels of certification should be administered by HL7 staff
   3.3. Certification should flagged by date
4. User profiles allow ability to tag contact information as private, to not appear in list

**Elections**

Application that allows for nomination and subsequent voting on these nominations for specific posts within the working groups.

**System Integration**
- Entitlement
- Membership
- Calendar/Events

**Additional Scoping**
- Wireframes
• Technical Requirements

Requirements
1. Within a given working group, members are able to nominate other members within the working group to facilitator or co-chair
2. Elections only occur (and thus appear) within a pre-defined time frame
3. Once the election period is over, the voting period begins
   3.1. Each member can vote once
   3.2. Each member can only vote with their own working group
4. At the end of the voting period, the winner is announced
5. At the start of the new cycle, user permissions are set accordingly
   5.1. User permissions based on elections will be driven by date stamps
6. All data tracked and stored for back-end reporting

Job Board
This widget allows members and non-members to purchase and post jobs to the HL7 job board. Organizational members can post jobs for free.

System Integration
• E-commerce
• Entitlement
• Membership
• Content Management

Additional Scoping
• Wireframes
• Technical Requirements

Requirements
1. Fee Structure – System will track and administer need for e-commerce integration based on user profile
   1.1. Allow staff to edit price for Organizational Members, Individual members and non-members
   1.2. Allow staff to assign exemptions
   1.3. HL7 Staff will have the ability to waive cost in the organizational profile (how does this item differ from 1.2?)
2. Job Posting Form
   2.1. For reporting purposes, associate postings with submitter
   2.2. Fields for Job form
      o Contact Name:
      o Contact Title:
      o Firm:
      o Address:
o Email:
o Phone:
o Fax:
o Job Title:
o Job Description:
o Skills/Experience required:
o Education required:
o Salary Range:

2.3. Job postings expire after 1 month (we want the ability to set and change the expiry date)
   2.3.1. submitter can choose start date
2.4. Job postings available to the public on the site

**Email Blast Integration**
Various mechanisms throughout the site will trigger events in an email marketing system. The requirements from this will be determined after a vendor selection exercise and through the technical requirements.

**System Integration**
- Entitlement
- Content Management
- Membership
- E-commerce

**Additional Scoping**
- Wireframes
- Technical Requirements
- Further clarification by the HL7 staff

**Evaluations**
Application that allows for the submission of online evaluations of staff, as well as other HL7 working group participants.

**System Integration**
- Entitlement
- Content Management

**Additional Scoping**
- Wireframes
- Technical Requirements
- Further clarification by the HL7 staff
Requirements
1. Evaluations are categorized based on the type of evaluation
2. All evaluations will have the following common traits:
   2.1. All evaluations can have a title, description and instructions
   2.2. Each evaluation can be flagged to forward responses to one or more email addresses
   2.3. Each evaluation can be flagged as staff tallied or other tallied
   2.4. Unlimited number of questions
   2.5. Each question can be composed of a question and an instruction
   2.6. Each question can be gauged by:
      2.6.1. an unlimited scale of numbers from 0 to x
      2.6.2. a text response
   2.7. Each response value can have text associated with it
   2.8. Each question should allow for a single comment
3. Evaluations run for a defined period of time (date through date)
4. Detail and Summary reports can be generated at any time during and after the evaluation period
   4.1. Access to reports is both role and user defined
   4.2. Non-staff tallies can still be reported on but only by those assigned to tally the evaluations, not staff

Polling
Application that allows for real-time, online polling

System Integration
- Entitlement
- Custom User Views
- Content Management

Additional Scoping
- Wireframes
- Technical Requirements

Requirements
1. The creation of polls is limited to:
   1.1. Working Group Facilitator
   1.2. Co-Chair
   1.3. Board Member
   1.4. HL7 Administrator
2. Polls should run for a limited period (date through date)
3. Polls can be created for site-wide use or to be specific to one working group
4. Polls created for site-wide use should appear on the home page and on the My HL7 page
5. Polls created for a working group should appear on the working groups page and on any user defined views that request to see polling information
6. Polls should limit responses to Yes, No, Abstain
7. Polls should allow for a document to be uploaded and available to the pollster should more detail than a simple question might often be needed.
8. Polls can limit user responses by user functions (eg. a Board defined poll may only allow board members to respond)
9. Polls should store data about the user from the users profile for metrics
10. Immediate poll reporting (upon poll response submission) should be limited to the question, the number of respondents and the percentage responses for each of the possible response values

Standards Proposal Databases
Support for submitting and managing proposals to changes to the various standards.

System Integration
- Entitlement
- Custom User Views
- Content Management

Additional Scoping
- Wireframes
- Technical Requirements

Requirements
1. Each standard should have its own proposal tool
2. logged-in user should be able to see the full list of submissions
3. logged-in user should be able to see an individual submission page with the following fields
   3.1. ID
   3.2. Submitter Name
   3.3. Submitter email
   3.4. Submitter company
   3.5. Submitter phone
   3.6. date submitted
   3.7. specified version of standard
   3.8. specified section of standard
   3.9. A document attachment (.doc)
   3.10. Justification
   3.11. Description
   3.12. Status
3.13. Disposition
3.14. Memo

4. Administrators should be able to edit each proposal including status
5. Administrators should be able to delete each proposal
6. Users should be able to search for a particular proposal by
   6.1. status
   6.2. version
   6.3. chapter
7. User should be able to submit a proposal
   7.1. specified version of standard
   7.2. specified section of standard
   7.3. A document attachment (.doc)
   7.4. Justification
   7.5. Description
   7.6. Memo
   7.7. System should display to user cut-off date for submissions
Web Analytics
Web measurement solution that provides insight on visitor behavior, marketing campaigns, eCommerce and overall site and business success metrics.

Current Analytics Software
Health Level Seven is currently using an older version of WebTrends and doing server log file analysis.

Current Challenges
Health Level Seven is not currently getting the insight needed from its web site and online marketing campaigns. Current challenges include:

- **Technology:** HL7 has not had an enterprise-class web analytics tool. The current solution is an older log file analysis tool which provided unreliable and inaccurate data.
- **Key Performance Indicators:** There are no defined and agreed upon KPIs for the site which align to the business objectives.
- **No baseline measurements:** There are no baseline measurements for key metrics on the site such as conversion rate. Without baseline measurements, it will be hard to gauge the effectiveness of initial redesign and optimization efforts.
- **Can’t easily share metrics:** HL7 currently does not have a system of sharing metrics across the organization. New people and technology are being put in place to make this happen.

Data Collection Recommendations

- **Software Upgrade:** It is recommended to upgrade to the most current version of WebTrends (WebTrends 8 Analytics, Commerce Package). This will provide significant flexibility in configuring the necessary reports and getting the insight needed from commerce, campaigns, content and navigation.
- **Hosted Analytics:** It is strongly considered to use the WebTrends On Demand hosted analytics service. This will be a monthly fee, but WebTrends will host the server and provide all analysis, requiring no technical or IT support from HL7. This will be one less system that HL7 needs to administer and will leave more time to help manage the other new infrastructure that will be part of your new website.
- **Client-side data collection:** WebTrends supports both client side java script tracking and server log file analysis. It is critical that HL7 use the java script tracking and Smart Source data collector. This will provide more accurate data and allow for easier integration with the content management system.
- **First-party cookie:** HL7 should ensure that the WebTrends cookie is served up from the corporate domain (www.hl7.org) to ensure the greatest accuracy. Third party cookies are accepted at a much lower rate.
Content Management System Integration

HL7 needs to integrate the WebTrends tracking directly with the new content management system. Properly tagging and measuring pages should be a byproduct of the content publishing process. Specific areas to directly integrate with the CMS include:

- **Content Groups and Sub Groups**: WebTrends has two levels of content groups and sub groups. These can be added to the meta data section in the CMS so the proper content and sub groups are set on each page by content publishers. The exact content group strategy will be developed following the completion of the HL7 Information Architecture.

- **Product SKU**: Each product in the shopping cart should be assigned a unique SKU. This SKU can be added to the meta data description in the CMS. A product catalog translation table can be managed outside of WebTrends and the CMS to provide rich detail. By managing a single SKU per product, it will eliminate the need to tag each page with additional categories. While the store is relatively small, accurately tying sales to other onsite behavior will be key.

- **Page Title**: Adding a friendly WebTrends page title in the content management system will allow HL7 to have meaningful page titles in the reports. Often for SEO purposes, the page titles are filled with keywords and are hard to understand in the reports.

Website Measurement Recommendations

There are numerous considerations for measuring the behavior of the HL7 site.

- **Audience Segmentation**: With the many different audiences HL7 caters to, it will be critical to be able to measure how each of these audiences uses the site. Ideally, there will be some kind of behavior on the site that will allow us to easily segment visitors into different audience groups and measure how each of them use the site.

- **Membership Group Segmentation**: A big value of the analytics will be to create segmented reports for each membership group to see how traffic is trending, how the group is being used and how many people are interacting with key features such as the bulletin board. It would be advantageous to provide group leaders the ability to log in and see the results from their group so they can better manage their content and users. For example, it will be easy to see how many people are actually accessing meeting notes, or responding to key e-mails or bulletin board posts.

- **Search Engine**: Measuring the effectiveness of HL7’s internal site search engine is a key part of the site analytics. To do this, the search engine must be configured so that the search term is output as a parameter on the results page or in the page code on the results page. It would also be helpful to have a parameter that listed the number of results displayed. This will be important to do reporting on “0 results” queries.

- **Scenario and Conversion Analysis**: Key scenarios and conversion activities will need to be defined throughout the site to take advantage of WebTrends scenario analysis. These include signing up for e-mail communications, ordering from the store or logging back into the membership section. Once the information architecture is developed, we will recommend how these scenarios should be set up.
Key Performance Indicators
The following Key Performance Indicators are recommended as a starting point for what HL7 should be monitoring on the site.

**Top line Metrics**
Top line metrics are key numbers fundamental to the success of the web site. While not necessarily actionable like a KPI ratio, these are essential numbers to be trended and reported on as part of the ongoing analysis.

<table>
<thead>
<tr>
<th>KPI</th>
<th>Description</th>
<th>Business Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Visitors</td>
<td>Measure total unique visitors to the website for any given time period.</td>
<td>Indicates the reach of the site to unique people.</td>
</tr>
<tr>
<td>Visits</td>
<td>The total marketing traffic as a percentage of overall web site traffic. Both as an overall number and by category</td>
<td>Indicates the reach of the site across all visits from unique visitors.</td>
</tr>
<tr>
<td>Page Views</td>
<td>Measure marketing campaign conversions</td>
<td>Indicates visitors engaging in content.</td>
</tr>
<tr>
<td>Sales</td>
<td>The number of orders and total order $ for the online store.</td>
<td>Indicates orders and revenue success.</td>
</tr>
<tr>
<td>Leads</td>
<td>The number of new inquiries from interested potential members, sponsors or other individuals.</td>
<td>Indicates success of site in reaching new visitors.</td>
</tr>
</tbody>
</table>

**Acquisition Key Performance Indicators**

<table>
<thead>
<tr>
<th>KPI</th>
<th>Description</th>
<th>Business Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Marketing Campaign Traffic</td>
<td>Measure overall marketing campaign traffic to the site. Both overall and by category.</td>
<td>Measures amount of marketing traffic and success of individual campaigns in driving traffic to web site.</td>
</tr>
<tr>
<td>Marketing Campaign Share</td>
<td>The total marketing traffic as a percentage of overall web site traffic. Both as an overall number and by category</td>
<td>Measure how marketing campaigns factor into the overall marketing and acquisition mix.</td>
</tr>
<tr>
<td>Marketing Campaign Conversions</td>
<td>Measure marketing campaign conversions</td>
<td>Measures effectiveness of marketing campaigns in driving online leads and conversions. (Specific to success criteria of individual campaigns)</td>
</tr>
<tr>
<td>Campaign Conversion Rate</td>
<td>Measures marketing campaign conversion rates.</td>
<td>Measures the success of the campaigns at converting visitors relative to the number of visitors. (Specific to success</td>
</tr>
</tbody>
</table>
### Direct Traffic
- **Description**: The number of visitors that directly type in a URL or come back via a bookmark.
- **Business Value**: Demonstrates brand and URL recognition and benefits of offline advertising or brand building efforts.

### Direct Traffic Share
- **Description**: The percentage of traffic to a site that directly types in a URL or comes back via a bookmark.
- **Business Value**: Measures the value of direct traffic relative to other sources and total traffic.

### Referral Traffic
- **Description**: The number of visitors that are referred from another site through referring sites through linking. (Excludes search engines)
- **Business Value**: Demonstrates strong link partners and link development.

### Referral Traffic Share
- **Description**: The percentage of traffic to a site that comes from referrals.
- **Business Value**: Measures the value of link partners and third party sites relative to other sources and total traffic.

### Organic Search Traffic
- **Description**: The percentage of traffic to the site that comes from organic search results.
- **Business Value**: Measures the visibility and traffic across major search engines.

### Organic Search Traffic Share
- **Description**: The percentage of traffic to the site that comes from organic search.
- **Business Value**: Measures the value of search relative to other acquisition strategies.

### Engagement Key Performance Indicators

<table>
<thead>
<tr>
<th>KPI</th>
<th>Description</th>
<th>Business Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Visit Depth</td>
<td>The average pages viewed per visit.</td>
<td>Indicates engagement of content and quality of visitors.</td>
</tr>
<tr>
<td>Avg. Time per Visit</td>
<td>The average time spent per visit.</td>
<td>Indicates engagement of content and quality of visitors.</td>
</tr>
<tr>
<td>Homepage Bounce Rate</td>
<td>The percentage of people that exit the homepage after entering (only viewing one page)</td>
<td>Lowering the bounce rate of the homepage increases the number of people engaging in the site.</td>
</tr>
<tr>
<td>Search Results Exit Rate</td>
<td>The percentage of people that exist on the search results page.</td>
<td>Lowering the exit rate indicates more visitors are finding what they are looking for.</td>
</tr>
<tr>
<td>Visits per Visitor</td>
<td>The average number of visits per unique visitor.</td>
<td>Indicates value of the site in driving repeat visits.</td>
</tr>
<tr>
<td>Return Visit Share</td>
<td>The percentage of return visitors to overall visitors.</td>
<td>Measures the success of the site at attracting repeat visitors.</td>
</tr>
</tbody>
</table>
## Conversion Key Performance Indicators

<table>
<thead>
<tr>
<th>KPI</th>
<th>Description</th>
<th>Business Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaged Visitor Success Rate</td>
<td>The percentage of visitors that view more than 5 pages on the site.</td>
<td>A successful visit can be measured by someone who is engaged in the content.</td>
</tr>
<tr>
<td>Membership Login Rate</td>
<td>The percentage of returning visitors that log into the site to access members only data.</td>
<td>Indicates the value of content and use of the members only tools by visitors.</td>
</tr>
<tr>
<td>Order Conversion Rate</td>
<td>The Percentage of visitors that order online</td>
<td>Indicates success in selling products online and driving revenue.</td>
</tr>
<tr>
<td>Lead Generation Rate</td>
<td>The percentage of visitors that complete an inquiry form to learn more about HL7 or become a member. (To be defined in the IA)</td>
<td>Indicates success in reaching new potential members, sponsors or interested visitors.</td>
</tr>
<tr>
<td>Community Interaction Rate</td>
<td>The percentage of visitors that interact in the member communities (post in the bulletin board, or post a document)</td>
<td>Indicates success in cultivating a community and having people interact online.</td>
</tr>
</tbody>
</table>

## ERROR Handling

Site wide error handler to trap errors
- User should receive an error notification message ("We’re sorry...")
- Email webmaster with error details