

Totara Social: Product design brief

Document control

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	development meets the needs of end-users.		
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1. Purpose of document

This document is intended to:

- 1. Provide a high-level conceptual overview of a competitive enterprise social platform and its primary components based on research into enterprise social software, in both the marketplace and best practice
- 2. Propose a design approach leveraging Mahara as the base platform for Totara Social, and offering three general configuration capabilities, allowing Totara Social to serve the enterprise market as:
 - a. A fully standalone enterprise social platform
 - b. An enterprise "social learning" platform integrated with Totara LMS
 - c. An integrated enterprise social platform, able to receive and display activity stream data from other enterprise applications via a widely-accepted Activity Stream specification
- 3. Present draft wireframes of key pages of the platform
- 4. Explain plans to leverage existing open source technologies to realize proposed functionality which is technically challenging (specifically: Chat, Recommendation engine, Screenshare)
- 5. Suggest a roadmap for future enhancements to the platform (including gadgets for wider enterprise application interaction), and reasons for their consideration
- 6. Gather feedback, further requirements and insight from the Totara Partners to help validate the thinking, concepts, design approach, and requirements

2. Conceptual overview

In this section, we provide a high-level conceptual overview of a competitive enterprise social platform and its primary components based on research into enterprise social software, in both the marketplace and best practice.

2.1 High-level definition

A competitive enterprise social platform is as software system designed to transform the information workplace with:

- 1. Social capabilities including profiles, activity streams, status updates (i.e., micro-blogging), groups (i.e., communities), blogs, wikis, RSS feeds, discussion forums, chat, and messaging
- 2. Functionality facilitating the social contribution, distribution, consumption, and validation of knowledge and ideas (i.e., knowledge, idea, and insight sourcing)
- 3. Search and recommendation technology to connect individuals to the content most relevant (and most important) to getting their job done, and to the individuals that most important
- 4. Integration with enterprise applications via a single activity stream including activities spanning all enterprise applications, allowing individuals to comment and interact with those activities
- 5. Mobile access to allow key interactions with the platform at anytime, from anywhere



2.2 Conceptual diagram

The diagram below shows the principle concepts and relationships in a typical enterprise social platform.





2.3 Principle concepts

The table below presents the principle concepts of a typical standalone enterprise social platform, as well as a typical integrated social enterprise platform (implemented via the Activity Stream specification only – integration with other enterprise applications via other methods are not included).

ID	Concept	Comments
C-01	Activity	An activity is the core information component of an activity stream. It tells the story of a person or a system (i.e., the actor) performing an action on or with something. The general structure of an activity consists of an actor, a verb, an object, and a target, though the target is often optional.
		Example activities in a standalone enterprise social platform include: "Geraldine posted a photo," "John shared Mary's video," "Amy updated her bio," "Sue contributed an idea," "Bill asked a question," "Edward answered a question" "David posted a blog entry" etc.
		Example activities in an integrated enterprise social platform include: "Geraldine updated an opportunity in the CRM," "John opened a ticket assigned to you in the Support Portal," "Amy completed a program in the Learning Platform," "Bill earned a new badge in the Learning Platform," "Edward created a new course in the Learning Platform," "David uploaded a file to the File Repository" etc.
		Activities appear in an activity stream, where individuals can interact with the activities by "liking", sharing, and replying to (i.e., commenting on) the activity or to other replies to the activity. These interactions appear visually connected to the original activity in the activity stream, and generate new activities in the activity streams of users who are outside of the original first degree network. Examples include: "John liked Geraldine's photo" "Amy shared Geraldine's photo", "Sue replied to Geraldine's photo," "Geraldine replied to John's post," "David replied to Amy's program completion," etc.
		An activity has many properties including icon (from a media source), title, content (including HTML), url, generator, provider, published date/time, updated date/time and attachments (each attachment with properties including author, published date/time, etc). These properties follow the definition of an activity object in the JSON Activity Stream 1.0 Specification, an open standard for activity streams which has been widely adopted in the enterprise social market.

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C-02	Activity stream	An activity stream is a reverse-chronological feed of activities allowing users to keep up-to-date with new information provided by people and systems, and to engage with other users about the information. In an enterprise social platform, there are usually four types of	
		activity streams. These are listed below, along with a	
		1. Individual Stream: Activities an individual has	
		generated or participated in	
		Examples: individual's status updates, ideas	
		comments, "likes", new connections made, profile	
		changes made, and forum posts.	
		2. Home Stream: Activities generated or participated-in	
		by an individual's connections/colleagues Examples are conceptually the same as the individual's	
		activity stream except they are centralized on activities	
		generated by an individual's first degree network	
		3. Group Stream: Activities generated by group administrators and group members within a group's	
		forums or pages	
		Examples: New forums added, new forum discussions	
		created, replies to forum discussions, pages added,	
		content	
		4. Company Stream: Activities accessible by all logged in	
		users and published by only by administrators. A	
(added to	
		Examples: Status updates, new pages added,	
		The activity stream shown an individual's homepage centralizes	
		activities based on the individual's connections and all the	
C-03	Analytics	groups of which the individual is a member.	
0.05	Analytics	users, connections, updates, questions, answers, ideas,	
		contributors, views, replies, raters, ratings, groups, forum	
		discussions (posts and replies), blog posts (and replies), topics,	
C-04	Answer	An answer is a response to a guestion in the form of free-text.	
		uploaded media (image, audio, or video), external url, or	
		screenshare recording.	
		Answers, and their corresponding questions, are an essential	



		way for knowledge to be informally shared within an enterprise social platform and are not confined to groups (i.e., are
		designed to be site-wide). Answers can be tagged with topics,
		as well as delivered in activity streams, search results, and
		recommendations.
		Individuals can find questions to answer in their homepage
		activity stream, the activity streams of other users, the
		Questions are (including the "Unanswered questions" listing),
		and the Question recommendation block. Questions can also be
		link. An individual can provide an answer to a questions in any
		of these areas.
		In their profile, individuals can see the number of answers they
		have provided, and link to a list of those answers (and their
0.05		corresponding questions).
C-05	Blog	A blog (or journal) contains long-form series entries of useful commentary, event descriptions, or other types of information
		Blog entries may content multimedia including embedded
		images, audio, and video, as well as links to external references.
		Entries are commonly displayed in reverse-chronological order,
		and can be tagged with topics (i.e. tags). Blog entries can be
		navigated via topic clouds (i.e., tag clouds).
		Depending on permissions set by the individual who maintains
		the blog, blogs can allow other users to view the blog entries
		and leave comments. Other options for users include giving
		ratings. Blog entries can also be included in search results, and
(added to "lists" maintained by users.
C-06	Chat	Chat (i.e., instant messaging) is a form of synchronous
		communication between two users logged into the enterprise
		Individuals can chat with their connections via chat block, which
		is available on every page. The block displays a searchable list of
		the individual's connections, and indicates which connections
		are online. A chat dialog takes place in a hovering chat window.
		An individual can have more than one chat at a time.
		Chat content is private (i.e., chat dialogs are not published),
		however chat content can be used by the recommendation
		engine for suggesting relevant content (questions, answers,
		ideas) or connections.
C-07	Company	A company is a group which all users in the platform are



		automatically added to. Administrators can manages pages in
		the company group and manage forums—updates from which
		appear in the company activity stream.
C-08	Connection	A connection (i.e., contact, colleague, or friend) is a person who
		is willing to share profile access, activity updates, and online
		status for engaging in chat sessions. Connections are made by a
		connection request, which can either be accepted or rejected.
		Once a connection accepts a request from an individual,
		information can be shared (e.g., access to the contact's own
		activity stream) based on permissions.
C-09	Forum	A forum (i.e., discussion board or message board) allows
		individuals to engage in conversations in the form of
		discussions (i.e., forums) containing posted messages and
		replies, which are typically displayed as message threads. When
		authoring a forum post, individuals can usually upload images,
		audio, video, and documents, and include external urls for
		others to learn from. Forums are usually organized within
		groups. Therefore, access to forums will depend on group
		membership.
C-10	Idea	An idea is an insight piece of information worth sharing with
		the enterprise. Types of ideas include quick tips, best practice
		examples, and innovation suggestions (e.g., new product
		features, process/service improvements etc).
		Ideas are presented in the form of a thumbnail image, title,
		description, the name of the contributor (hyperlinked to the
		contributor's profile). Ideas can also include a variety of media
		including external links, uploaded files (documents, images,
		audio, video) or screenshare recordings.
		When contributing an idea, individuals can choose the audience
		that will receive an update in its activity stream (e.g., all or
		selected contacts; all or selected groups, all or selected
		communities; or all users across the organization).
		Before contributing an idea, the contributor can decide which
		keywords, tags, and categories should be assigned to the idea.
		After the idea is posted, any individual can update the
		keywords, tags, and categories. Contributors receive message
		when keywords, tags, and/or categories have been updated on
		any idea they have contributed.
		When other users see an idea in their activity stream, or in
		search results, they can comment on it or rate it.
C-11	Inbox	An inbox is a collection of messages received by an individual



		from users in the system or the system itself. An individual can
		see which messages have been read or which are unread. An
		individual can reply to messages and delete them.
C-12	Individual	The individual is essentially the logged in user, and can be any
		person who has been given a user account.
C-13	Like	The "Like" link allows individuals to signal agreement with
		content to their social network. It a quantifiable alternative to
		expressing reaction to content like replies, and is more
		simplified than content voting systems (e.g., five-star rating).
		The popularity of an item of content can be attributed to the
		number of "Likes" it has received. Recommendation engines
		can also utilize an individual's "Like" history to make
		recommendations (e.g., recommended activities with content
		or reply threads containing similar terms or phrases to content
		previously "liked", or recommended connections with similar "like" histories).
C-14	Messages	Messages allow users to asynchronously communicate with
		each other by composing messages and replying to previous
		messages. Similar to email, a message contains a subject and
		message. The message body may contain HTML and hyperlinks.
		Individuals can begin the messaging process from the profile
		pages of other users, from their connections page, or from their
		inbox. Messages can be sent from users or from the system.
C-15	Permissions	Permissions allow individuals to specify how their profile and
		and a second second state of the second states and second states and attraction of the second states and
		generated content is snared with other users in the platform.
C-16	Profile	The profile presents an individual's workplace identity, social
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		The individual's social contribution history takes the form of an activity stream, essentially a chronological series of all the contributions that the individual has made (e.g., status updates, ideas, questions, answers, comments, contacts made, forum discussion posts). The individual's level of social influence takes the form of social metrics and a social influence map. Some common social metrics include number of status updates, ideas, questions, answers, contacts / followers. The metrics can be aggregated into a summary score (e.g., 'contributor score' similar to a Klout score) or level (e.g., 'contributor level', or 'level of awesomeness'). A social influence map depicts a graph of all the connections that a user has.
C-17	Questions	Questions are a key way for individuals to request expertise, as
		well as to learn from previous questions asked and answers to previous questions (and any comments added to both questions and answers). When posting questions, individuals can choose the audience that will receive an update in its activity stream (e.g., all or selected contacts; all or selected groups, all or selected communities; or all users across the organization). Before and after posting a question, individuals can decide which keywords, tags, and categories should be assigned to the question.
C-18	Recommendations	Recommendations suggest potentially useful information (e.g., ideas, questions, answers, forum posts, wiki's bogs) to an individual based on data collected about the individual (profile data, past searches, past filter selections, content of pages viewed, content of knowledge lists, contacts). Recommendations are typically ranked by relevance, ratings
		and usage metrics.
		Recommendations can also suggest contacts (e.g., "People you should be in contact with") ranked based on valuable match criteria (similar searches,
		find and connect with other users with similar interests (to
		well as to learn from the knowledge they have shared)
C-19	Reply	A reply is a written, freeform, feed response to an idea, question, answer, or status update. Each comment displays the response text, the date and time of the response, and a hyperlinked name of the commenter. The hyperlink on the
		commenter's name links to the commenter's profile (thus
		providing an opportunity for other users to make a contact request (and or 'follow' the commenter), thereby extending



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3 Design approach

In principle, we also propose to build Totara Social on Mahara, the open source e-portfolio and social networking application. On this basis, we will design and implement core enhancements and extensions to Mahara, leveraging Mahara's existing functionality and flexible plugin system whenever possible.

Further, we propose the initial release of Totara Social to be a fully 'standalone' enterprise social application ready to be integrated with Totara LMS along several key touch-points as well as ready to be integrated with enterprise applications which support the JSON Activity Streams 1.0 Specification.

Before explaining each of these items in detail, we need to state the design principles.

3.1 Guiding design principles

The following statements will be used to guide the design process of Totara Social:

- 1. The user experience will be entirely driven by the individual, aside from site-level administration and content moderation by site-level and group-level administrators
- 2. The user interfaces will be simple, intuitive, and easy to use (in a default installation and after site administrators enable integrations)
- 3. The user interfaces will be visually scalable (e.g., the activity stream will provide efficient navigation through thousands of activities; the connections page will provide efficient navigation through hundreds of connections; the search results page will provide efficient navigation through thousands of search results)
- 4. The code structures will allow easy extension via plug-in architectures (e.g., adding new activity types such as "polls" and custom activity properties as needed)
- 5. The code structures will allow easy customization (including development of custom themes)
- 6. The design of the user interface, on each page of the platform, will set the platform uniquely apart from other enterprise social platforms (in the same way that Totara LMS is set uniquely apart from other enterprise LMS platforms)

3.2 Mahara as base platform

Mahara is fundamentally an individual-centric content creation and management system, providing individuals the ability to create, manage, store, and display media-rich content. Mahara has been designed and developed to be a highly flexible and extensible platform, including plugin architectures for authentication, content (content types, content block types, content import, and content export), group types, and themes. It also fosters robust group, file sharing, and privacy setting functionality. As such, it will serve as an ideal base platform for Totara Social.

Leverage-able functionality

The following principle concepts of an enterprise social platform (as defined in the previous section) are provided by Mahara out-of-the-box:

ID	Component	Mahara term	Comment



03	Analytics	Statistics	
05	Blog	Journal	
08	Connections	Friends	
09	Forum discussion	Forum topic	
11	Inbox		
12	Individual		
14	Messages		
15	Permissions		
16	Profile		Suggest locking profile page block layout for a consistency
19	Reply		Limited to forum posts
20	RSS Feed		
21	Search		Limited to searches for Friends or Groups
22	Search results		Limited to searches for Friends or Groups
23	Share		Limited to sharing of artefacts like Page or Collection
25	Торіс	Тад	
26	Topic cloud	Tag cloud	

The primary focus of the design effort related to these components will be in transforming their look and feel in alignment with a competitive, modern enterprise social platform, as well as integrating them within the site-wide navigational architecture of the same kind of platform.

Terminology changes

We propose to make the following terminology changes to the base platform to align with a universal business audience (based on the differences shown in the table above).

- Replace "statistics" with "analytics"
- Replace "journal" with "blog"
- Replace "friends" with "connections"
- Replace "topic" with "discussion" (in the context of forums)
- Replace "tag" with "topic" / Replace "tag cloud" with "topic cloud"

Points of difference

Mahara includes four key features which will allow Totara Social to stand out from other enterprise social platforms: Pages, Page Collections, Resume/Resume Builder, and Welcome Page. We've captured these concepts in the table below.

ID	Concept	Comments
28	Page / Page Collection	A Page is an individual, group, or administrator managed area in which content can be added and organized for consumption by other users. Individuals can add a page to their profile. Group administrators, group moderators (and regular group members depending on group permissions) can add pages to the group homepage. A Page Collection is a collection of pages organized together
29	Resume /	A Resume is a statement of an individual's work history and skills, used to
	Resume Builder	communicate the individual's education, background and experience. A Resume



		Builder is a tool to allow individuals to easily build a resume using interactive tools.
32	Welcome Page	A Welcome Page is a feature which allows new users to become quickly familiarized with the application, and to rapidly get started using it. It includes descriptions of the main functionality and provides a basic set of instructions to get started. It may also include a dashboard to allow users to have a broad overview of recent activity and updates.

3.3 Enhancements to Mahara

The table below captures the remaining concepts which Totara Social must realize to be competitive with other enterprise social platforms (based on the table defined in the previous section), and provides comments about how we plan to achieve each concept. Note, we believe there is one exception (Wiki) as noted below.

ID	Concept	Comment
01	Activity	Based on the JSON Activity Stream 1.0 Specification
02	Activity stream	
04	Answer	A type of Activity to appear in Activity Streams
06	Chat	Will leverage a robust open source chat server and interface (refer to the
		Technical Considerations section below for detail)
07	Company	A type of mandatory group automatically created on a Totara Social install.
		All users will be automatically (and silently) added to the group.
10	Idea	A type of Activity to appear in Activity Streams
13	Like	An interactive feature to be added to all activity items in Activity Streams
17	Questions	A type of Activity to appear in Activity Streams
18	Recommendations	Will leverage a robust, open source recommendation engine and search
		server (refer to the Technical Considerations section below for detail)
24	Status updates	A type of Activity to appear in Activity Streams
27	Wiki	Deferred. We propose to hold on the inclusion of wiki functionality into
		Totara Social for the foreseeable future because as we currently believe
		wikis should operate as standalone systems which can be integrated with
		Totara Social via Activity Streams.

We expect the bulk of the Totara Social feature development effort will be in realizing the activity streams, both their supporting their activity types (status updates, question/answer, idea), activity stream types (Home Stream, Group Stream, and Company Stream), and the interactions within them (likes, shares, replies, etc).

We propose to design a user experience of the activity streams feature is familiar to end users by being functionally similar to activity streams found in other modern, popular online social networking/media platforms such as Facebook, Google+, LinkedIn, and Twitter, yet has with the same distinctive design



qualities that have uniquely set Totara LMS apart--from a design perspective--from other enterprise LMS platforms.

In addition to implementing the core enterprise social concepts, we believe Totara Social must include two features (lists and screenshare functionality) to give users a far more compelling experience in the social platform, compared with the platforms provided by the largest competitors in the market. These two concepts are described in detail in the table below.

ID	Concept	Comments
33	Lists	Lists (i.e., 'knowledge lists') are individually-managed sequence of meaningful activity stream items (e.g., ideas, questions, answers, status updates, forum posts—and their comments), which can be reordered or shared with other users.
		Lists makes it easy to track important, memorable activity stream items within the platform without having to scroll through active activity streams or look through search results.
		Similar to social bookmarking, lists allow individuals to collect and curate the most important activity items they have read (or created), so they can quickly return to them whenever necessary.
		Individuals can create an unlimited number of lists, and can drag-and-drop items in a list to reorder them. Individuals can add activity stream items directly from activity streams (via a list icon which expands a drop-down menu of available lists.
		A further benefit of lists is that they can be used to allow users to track informal learning which is relevant for formal assessments (e.g., competency, performance, etc).
34	Screenshare	A Screenshare is an audio/video recording made by an individual while sitting at their desktop or laptop. A screenshare can be recorded within the enterprise social platform by pressing a record button.
		The screenshare feature must be embedded in the application rely on the browser (with any third-party plugins or special configurations) to access the user's microphone and desktop. It must also allow the user to preview the recording before it is published for other users to see.



The diagram below is a conceptual diagram of Totara Social running standalone, showing the key conceptual points of differences to a typical enterprise social platform **in bold** (i.e., Pages and Lists).



3.4 Activity Stream integration with enterprise applications

Socializing enterprise activities in an online social network introduces a wide range of benefits to the performance of an organization. To allow Totara Social to deliver these values to its user base, we propose to implement the JSON Activity Steams 1.0 Specification because it is an open standard, it is



straightforward to implement, and it is experiencing rapidly widening adoption across the enterprise application market (competitor implementations include Yammer, SocialCast, and Tibber Tibco).

The Activity Streams format is now maintained by the OpenSocial Foundation (a non-profit entity jointly led by Yahoo, Google, and MySpace). The JSON Activity Steams 1.0 Specification has been adopted in OpenSocial since the release of OpenSocial 2.0 in 2011. The specification is available here: http://activitystrea.ms/specs/json/1.0/

The table below contains draft requirements related to the integration of Totara Social with core applications and processes which have implemented the JSON Activity Stream 1.0 Specification.

ID	Requirement	Comments	
Totar	Totara Social – Administrator settings		
R-01	Ability for Administrator to configure an external activity feed source for		
	external systems (i.e., adjacent collaboration, content, portal, talent,		
	productivity applications)		
Totara Social – Activity stream			
R-02	Ability for events in external systems to appear as activities in an		
	individual's activity stream (including relevant titles, descriptions,		
	thumbnails, urls, and hyperlinked employee names)		
R-03	Ability for individuals to interact with activities feed from external		
	systems in a way they can with activities generated within Totara Social		
	(e.g., like, share, reply, etc).		

3.5 Totara LMS integration

We believe there is a very wide range of touchpoints between Totara Social and Totara LMS.

Enhancements to Totara Social components

The table below captures draft requirements related to the functionality of Totara Social components, which will be enhanced by the integration of Totara Social with Totara LMS.

ID	Requirement	Comments		
HR int	HR integration hooks			
R-04	Ability for HR integration data (user demographics such as title, manager,			
	location, organization) to be fed to Totara Social from Totara LMS.			
Homepage – Top Contributors block				
R-05	Ability for list of top contributors to be filtered by the individual's HR	Will need to decide		
	data (i.e., an individual will see top contributors only in their part of the	the basis for the		
	organization, in their location, or with the same position)	logic.		
Activity stream				
R-06	Ability for individuals to flag content (ideas, questions, or answers) in the	The list concept		
	their Totara Social activity stream as competency evidence items in their	could potentially		
	Learning Plans in Totara LMS, or as evidence for a performance	support this		



	appraisal.	
R-07	Ability for course enrolments to appear as activities in an individual's	
	activity stream (e.g., 'Jane Foster enrolled the Leadership Insights	
	course')	
R-08	Ability for program enrolments to appear as activities in an individual's	
	activity stream (e.g., 'Jane Foster was enrolled the Leadership	
	Development 2013 program')	
R-09	Ability for face-to-face sign-ups to appear in an individual's activity	
	stream (e.g., 'Jane Foster signed-up for the Leadership Insights workshop	
	on Monday March 1, 2013 9:00 – 10:00am')	
R-10	Ability for face-to-face attendance to appear in an individual's activity	Possible
	stream (e.g., 'Jane Foster attended the Leadership Insights workshop on	integration via Tin
	Monday March 1, 2013 9:00 – 10:00am')	Can API
R-11	Ability for course completions to appear in an individual's activity stream	Possible
	(e.g., 'Jane Foster completed Leadership Insights 2013 course')	integration via Tin
		Can API
R-12	Ability for program completions to appear in an individual's activity	Possible
	stream (e.g., Jane Foster completed Leadership Development 2013	Integration via Tin
D 42	program')	
R-13	Ability for badges issued in Totara LIVIS to appear in an individual's	Integration with
	activity stream (e.g., Jane Foster earned the Top Participant badge in	Open badges
Deserve	the Adaptive Your Work Environment course)	required
Recom	Ability to recommend connections (i.e., (neeple to follow') based on UD	Danking by
N-14	Ability to recommend connections (i.e., people to follow) based of HK	rolovanco will bo
	Licers in your organization in the organizational hierarchy	
	Users myour organization in the organizational meral chy	the same
	 Users with the same position system field like ich family. 	audiences may be
	Users with the same pusition custom held like job family	too broad and may
	Users with a similar line manager	need to restricted
	Users with a similar nine manager	audiences of a
	Users with a similar city	certain size.
Drafila	Users with a similar country	
Profile	Ability for year system year fields which are visible in Tetara LMS profiles	
K-12	Ability for user custom user merus which are visible in Totara Livis promies	
	to be visible in rotata social promes via the fix integration hooks (e.g.,	
P_16	Ability for badges earned in Totara LMS to appear in an individual's	Integration with
11-10	Totara Social profile	Onen hadges
		required
Group	l S	
R-17	Ability for groups in Totara Social to be automatically created and	
	populated based on course enrolments in Totara LMS	
R-18	Ability for groups in Totara Social to be automatically created and	
	populated based on program enrolments in Totara LMS	
Journa	I (personal reflection areas in Totara Social)	1



R-19	Ability for journal entries to be automatically created in Totara Social	
	when learning activities are completed in Totara	
Permis	issions	
R-20	Ability to choose if updates for course enrolments in Totara LMS are	
	automatically published on an individual's Totara Social activity stream	
	(e.g., 'Jane Foster enrolled the course Leadership Insights')	
R-21	Ability to choose if updates for programs enrolments in Totara LMS are	
	automatically published on an individual's Totara Social activity stream	
	(e.g., 'Jane Foster was enrolled the program Leadership Development	
	2013')	
R-22	Ability to choose if updates for course completions in Totara LMS are	
	automatically published on an individual's Totara Social activity stream	
	(e.g., 'Jane Foster completed Leadership Insights 2013 Course')	
R-23	Ability to choose if updates for program completions in Totara LMS are	
	automatically published on an individual's Totara Social activity stream	

Enhancements to Totara LMS

The table below captures requirements affecting Totara LMS which we plan to initially focus on.

ID	Requirement	Comments
HR integration hooks		
R-24	Ability for HR integration data (user demographics such as title, manager,	
	location, organization) to be fed to Totara Social from Totara LMS.	
Viewir	ng others' profile in Totara LMS	
R-25	Ability for an individual see on another user's Totara LMS profile	
	whether the individual is connected the user	
R-26	Ability for an individual to invite to connect (in Totara Social) another	
	users by viewing the other user's profile page in Totara LMS	
Find Le	earning – Courses: Functionality within Totara LMS's Find Learning area (for	courses) to be
integra	ated with Totara Social	
R-27	Ability to ask questions about courses	
R-28	Ability to view questions asked about courses	
R-29	Ability to answer questions about courses	
R-30	Ability to view answers given to questions asked about courses	
R-31	Ability to "like" courses	
R-32	Ability to "like" questions about courses	
R-33	Ability to "like" answers to questions asked about courses	
R-34	Ability to reply to questions about courses	
R-35	Ability to reply to answers to questions about courses	
R-36	Ability to share questions about courses	
R-37	Ability to share answers to questions about courses	
R-38	Ability to share a courses with all of an individual's connections	
R-39	Ability to share a courses with groups	
Find Learning – Courses: Functionality within Totara LMS's Find Learning area (for programs) to be		



integrated with Totara Social.		
R-40	Ability to ask questions about programs	
R-41	Ability to view questions asked about programs	
R-42	Ability to answer questions about programs	
R-43	Ability to view answers given to questions asked about programs	
R-44	Ability to "like" programs	
R-45	Ability to "like" questions about programs	
R-46	Ability to "like" answers to questions asked about programs	
R-47	Ability to reply to questions about programs	
R-48	Ability to reply to answers to questions about programs	
R-49	Ability to share questions about programs	
R-50	Ability to share answers to questions about programs	
R-51	Ability to share a programs with all of an individual's connections	
R-52	Ability to share a programs with groups	
My Team – Manager Dashboard		
R-53	Ability for Manager to see Totara Social analytics regarding their direct	
	reports in their dashboard	
My Team		
R-54	Ability for Manager to see analytics for direct reports in the My Team	
	page (i.e., Totara Social metrics like # ideas, # questions, # answers)	

4 Draft wireframes

The following section contains draft wireframes of key pages in the platform. These are only rough concepts to collect feedback on the site architecture, arrangement, and conceptual design.



4.1 Home with activities from status updates





4.2 Home with activities from Totara Social interactions





4.3 Home with activities from integrated enterprise applications





4.4 Home with interaction detail





4.5 Profile





Totara Social: Product design brief

4.6 Groups





4.7 Group





4.8 Inbox



5 Technical considerations

In this section, we present how our plans to implement the technically-complex components which do not presently exist in the Mahara codebase.

5.1 Chat

We propose to power Totara Social's real-time chat feature with Ajax IM (<u>http://ajaxim.com/</u>), xmpphp (<u>http://code.google.com/p/xmpphp/</u>), or an alternative, suitably scalable, embeddable, open source chat application implemented in PHP.



5.2 Recommendation engine

We propose to power Totara Social's real-time search and recommendation engine with Apache Solr search server which includes the Apache Lucene search library. Solr/Lucene's key features include powerful full-text search, hit highlighting, facet search, dynamic clustering, database integration and rich document (e.g., Word, PDF) handling.

Beyond its search capabilities, Solr/Lucine is a high-performance, highly-scalable, fully-featured tokenmatching and scoring library – the necessary basis for a recommendation engine. All searchable content can form the basis of matching and scoring (e.g., text, attributes, locations, user behaviors and classifications). From a machine learning perspective, Solr/Lucene's index is a multi-dimensional sparse matrix with very fast and powerful look-up capabilities.

Early builds of Mahara included the Solr/Lucene plugin based on Solr 1.3, however the Solr/Lucene plugin was removed due to lack of support by the Mahara core team and community (refer to https://mahara.org/interaction/forum/topic.php?id=848). We propose to develop a new plugin based on Solr 4.0 GA, which was released on October 12 2012.

Solr provides a variety of the necessary recommendation approaches including attribute based, hierarchical classification, textual-similarity based, behavior-based (i.e., collaborative filtering), concept based, and hybrid approaches. For example, behavior-based recommendations can find users who like the same content, or find content liked by similar users. Solr also includes Carrot2, an unsupervised machine learning algorithm, which can cluster documents and dynamically discover concepts without a dictionary.

Totara Social will include default boosting of search term and documentations, as well as scoring, bucket weights, and payloads. Totara Social administrators will be able to tweak these settings as needed.

Sources:

- Building a Real-time, Solr-powered Recommendation Engine (http://www.slideshare.net/treygrainger/building-a-real-time-solrpowered-recommendationengine)
- Solr Wiki (http://wiki.apache.org/solr/Solr4.0)
- Wikipedia (http://en.wikipedia.org/wiki/Apache_Solr)

A potential alternative to Solr is elasticsearch, also built on Lucene.

5.3 Screenshare

The following links provide references to a few alternative approaches which can be leveraged to implement screenshare functionality using HTML5:

 Screensharing a browser tab in HTML5 (<u>http://www.html5rocks.com/en/tutorials/streaming/screenshare</u>)



- noVNC project homepage (<u>http://kanaka.github.com/noVNC/</u>)
- Guacamole homepage (<u>http://guac-dev.org/</u>)

6 Future considerations with OpenSocial

OpenSocial, which was originally developed for interoperability between social networking platforms, has opened the door to new types of interoperability between enterprise social platforms and enterprise applications. The primary goal of OpenSocial is to provide a common framework developers can use to ensure interoperability across various social networks on the Internet, which act as containers for each OpenSocial-compliant specification.

OpenSocial is supported by incumbent industry leaders in the social enterprise software space including Google, LinkedIn, Salesforce.com, IBM, Oracle, and SAP. Implementations include Cisco, Jive, Atlassian, IBM SmartCloud, Google, Yahoo, Liferay, Oracle, Magento, Tibco Tibbr. OpenSocial covers a broad range of capabilities including Profiles, Relationships, Activity Streams, Shared Applications, Authentication, and Authorization.

The following future considerations describe further adoption of the OpenSocial specifications and APIs, beginning with the Gadget API and followed by broader OpenSocial support.

6.1 Gadget container and producer

Gadgets will allow users to get work done in Totara Social without switching to other applications. For example, a project team can respond to bugs and issues created and tracked in a issue tracking platform platform. OpenSocial Gadgets can be displayed in any OpenSocial-compliant container, even ones on the Internet.

Examples

Example implementations of Gadgets include Gmail, iGoogle, Jira dashboard, and the IBM Mashup Center. Gmail is a Gadget container (it's actually an entire OpenSocial container). Everything on the Jira dashboard is an OpenSocial Gadget. iGoogle dashboard for OpenSocial Gadgets. IBM Mashup Center supports interoperability with widget component models such as OpenSocial gadgets: (http://www.ibm.com/developerworks/lotus/library/mashups-opensocial/index.html).

Requirements

In the long-term, we propose to make TotaraSocial an OpenSocial Gadgets container and a Gadget producer with the following requirements:

- Ability to display Gadgets within any page within Totara Social.
- Ability for Administrators to register Gadgets.
- Ability for users to browse available Gadgets and insert them into the page via a UI.



- Ability for the system to display a summary of recent activity in Totara Social as a Gadget ("Activity Stream Gadget").
- Ability to search Totara Social via Gadget ("QuickSearch Gadget") while offering suggestions (auto-complete).

6.2 Broader OpenSocial support

OpenSocial provides a REST and RPC API through which OpenSocial compliant applications and containers interact with each other, transmitting user. The protocols support a variety of data exchange format including JSON, XML, and ATOM. OAuth allows users to authorize data stored in social networks. OpenSocial allows integrations based on simple web technologies (HTML, CSS, JS) which are the toolkit of all professional web developers.

7 Appendix: Industry research

Research for this document included the following:

1. The Forrester Wave[™]: Activities Streams, Q2 2012, including the following statement

"While firms often initially deploy enterprise social solutions as standalone systems, the vision for most includes enterprise social that is deeply integrated with adjacent collaboration, content, portal, and productivity applications. Increasingly, the strategy includes a social layer to "socialenable" enterprise business applications.

Forrester also states in the report that "enterprise social will become highly integrated with other enterprise solutions" and that "activities streams represent just one approach" to social enterprise (broader social capabilities like blogs and wikis are some of multiple approaches)."

- 2. The Forrester Wave: Enterprise Social Platforms, Q3 2011
- 3. Gartner: Magic Quadrant for Social Software in the Workplace, Q3 2011
- "Yammer and why activity streams are a key foundation for integrated applications and organizations" by Ross Dawson, March 27, 2012 https://bit.ly/GSbRo7

Tibbr put activity streams squarely on the map, by integrating status messages from people with notifications generated by enterprise software including ERP, CRM, and HR systems. Employees are able to follow their colleagues and they can also follow updates on any activity, including events, projects, or even invoices. Tibbr was very well positioned to do that given Tibco's history in providing enterprise integration middleware.

Since Tibbr's launch Salesforce.com's Chatter product has developed its activity stream capabilities, and in fact now allows process steps to be taken from within the Chatter stream. Newsgator's Social Sites product specifically integrates activities from across applications into



streams, and Jive also has launched activity streams within its suite of products, among many moves from leading enterprise social software players.

Yammer is now playing in the activity stream space, putting itself forward as a horizontal layer that ties together a wide variety of enterprise software systems. The foundation for this integration is the Open Graph Protocol established by Facebook. Custom Yammer integrations into SAP and other enterprise applications have been built on top of open graph protocol. Integrations can be built to any contemporary enterprise application, though it is easier if they explicitly support open graph protocol.