

## Features

Tiki is the [FLOSS Web Application with the most built-in features](#). And for even more features, please see: [WikiSuite](#).

Unlike other projects that include a small set of features and then encourage users to install 3rd party add-ons, the Tiki community includes a large number of features in the main code base. This helps to ensure that when you upgrade, your existing features will not break. This also permits tight integration of the various features and makes it easier for you to re-use content across different features. For example, you can use the [Wiki Syntax](#) throughout the application: in wiki pages, forum posts, trackers, and more. You can read more about the Tiki [Model](#).

Because Tiki is in a state of continual development by the community, not all features are fully developed. This page provides a rating system for each feature to help you judge if Tiki is the right tool for you.

The ratings below are for the [latest stable version](#). The next major version will continue to add improvements to these features and will provide new functionality, too.

You can also see the details of every single preference in Tiki: [All Preferences](#)

### Rating System

**A:** Excellent - **B:** Very Good - **C:** Good - **D:** Adequate - **E:** Further development needed

### Subjective self-evaluation by the Tiki community

- Setup/admin UI: How easy / intuitive is to setup this feature?
- UI end user : Once setup, how easy / intuitive is it for the end-user? (was it worth it?)
- Stability: How many bugs left?
- Feature-set / power: How does this feature compare to other FLOSS apps? *This field is the default sort order*

### Content features

Feature name and link	Description	Dev (Bug reports & Feature requests) 	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">Kaltura Video</a>	Video management		C	B	B	A	
<a href="#">Forums</a>	Forums are online discussions organized by topic (or thread). Tiki forums feature threaded or flat views, file attachments, moderation and queuing, monitoring (subscription) of particular forums or topics, and full usage of wiki syntax.		B	C	B	C	
<a href="#">Trackers</a>	Facts and figures storage and retrieval. A forms and database generator, with reporting. Can be used for a bug tracker, item database, issue tracker, etc		B	A	B	A	

Feature name and link	Description	Dev (Bug reports & Feature requests) 	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">File Gallery</a>	File Galleries enable secure and efficient uploading, storage, downloading and other serving of all types of files including images, videos, podcasts, text and PDF documents and more.		B	C	B	A	
<a href="#">Messages</a>	Internal (within the site) messages from one site user to another.		A	A	A	B	
<a href="#">Screencasts (Feature removed in Tiki 17)</a>	This permits capturing the device screen and uploading to Tiki. An image is produced (that you can then draw on), or short video with sound. The jCapture applet is used.		A	A	C	B	
<a href="#">Webmail</a>	Provides a webmail interface for site users' own IMAP or SMTP accounts. The Webmail tool has been massively improved since in <a href="#">Tiki20</a> . Please see <a href="#">Email as a first-class citizen</a>		C	B	C	B	
<a href="#">Articles</a>	Articles can be used for date-specific news and announcements. You can configure articles to automatically publish and expire at specific times or to require that submissions be approved before becoming "live." In addition to <a href="#">categories</a> and <a href="#">tags</a> , articles include their own unique classification system of Topics and Types.		B	B	B	B	
<a href="#">BigBlueButton</a>	Open source instruction-focused real-time collaboration tool. (Audio/Video/Screensharing/Chat)		C	A	B	B	
<a href="#">Blogs</a>	Multiple blogs can be created with various author and display configurations, etc.		A	A	A	B	
<a href="#">Calendar</a>	Events calendar with public, private and group channels		B	B	B	A	
<a href="#">MiniChat</a>	Real-time group text chatting		A	C	B	C	

Feature name and link	Description	Dev (Bug reports & Feature requests) 	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">Contact us</a>	Basic form for site visitors to send a message to the site admin.		E	A	A	D	
<a href="#">Directory (links)</a>	User-submitted Web links		A	A	A	C	
<a href="#">FAQ</a>	Create pages of frequently asked questions and answers.		B	B	B	B	
<a href="#">Featured Links</a>	Simple menu system which can optionally add an external web page in an iframe		B	A	A	B	
<a href="#">File Gallery</a>	Storage and sharing via download or display in pages, of images, videos, and other file types . Supports check-in and check-out (lock), versions, etc.		A	B	A	A	
<a href="#">Friendship Network</a>	Users can designate other users as "friends" using either the "follow" or "like" method.		C	B	B	D	
<a href="#">HTML Pages</a>	Static and dynamic HTML content. Note: HTML can be used in wiki pages. This is a separate feature.		B	A		C	
<a href="#">Inter-User Messages</a>	Enable users to send internal messages to each other (like email but internal to the Tiki site). A message can be broadcast to multiple users in a Tiki group or to all site users if the appropriate permissions are granted.		B	B	A	C	
<a href="#">Live Support</a>	One-on-one chat with customer or other individual		C	B	C	C	
<a href="#">Maps</a>	Maps can be created and displayed using OpenLayers and OpenStreetMap.		B	B	B	A	

Feature name and link	Description	Dev (Bug reports & Feature requests) 	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">My Account</a>	Provide content organization and communication tools for registered users <a href="#">Bookmark</a> , <a href="#">User Preferences</a> , <a href="#">Watch</a> , <a href="#">User Menu</a> , <a href="#">Task</a> , <a href="#">Inter-User Messages</a> , <a href="#">User Files</a> , <a href="#">Notepad</a> and Mini Calendar		A	A	C	B	
<a href="#">Newsletters</a>	Create and send email newsletters (plain text and HTML) to subscribed site users and other individuals.		A	A	B	C	
<a href="#">Notepad</a>	Users can write, upload, download and read notes. Notes can be read as raw text files or as wiki pages interpreting the wiki markup syntax. The user-quota that admin can control is used to set the maximum size that user notes can take.		B	B	B	C	
<a href="#">Quizzes</a>	Create timed quizzes with recorded scores.		D	C	C	B	
<a href="#">Spreadsheet</a>	Spreadsheets supporting calculations and charts, import/export, etc.		A	A	C	C	
<a href="#">Shopping Cart</a>	A simple shopping cart feature - Information on products or services can be maintained in wiki pages or trackers with display via <a href="#">Pretty Tracker</a> ) and purchases added to <a href="#">Module Cart</a> through the <a href="#">PluginAddToCart</a> and sent to the <a href="#">payment</a> page.		B	B	B	D	
<a href="#">Shoutbox</a>	Quick comment (graffiti) box. Like a group chat, but not in real time.		A	A	A	D	
<a href="#">Slideshows</a>	Turn a wiki page into slideshow (each slide is the wiki content only, without "chrome") by using more than one title bar in the page, or make a multi-page slideshow from a <a href="#">structure</a> .		C	B	B	B	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
Surveys	Create questionnaires with multiple-choice or open-ended questions.		A	A	B	B	
Tasks	A site user's to-do list. Tasks can be sent to other users. Also, there can be shared group tasks.		B	B	B	B	
User Files	Users upload files and store them in their Tiki personal space; they can then download the files.		C	C	B	C	
User Pages	This provides each user with a personal wiki page that only he/she can edit. All User Pages have a similar, configurable name that includes the user name.		A	B	A	C	
Wiki	Collaboratively authored documents with history of changes. Tiki's wiki has all the features you could want from a first-rate wiki. Ex.: attach files, comments, history, images, warn on edit, page locking, powerful wiki syntax, alternative WYSIWYG editor, etc.		A	A	A	A	

Navigation features

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
Categories	Global category system. Items of different types (wiki pages, articles, tracker items, etc) can be added to one or many categories. Categories can have permissions.		B	B	B	A	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">Menus</a>	Menu items are filtered by permission, by group or activation of relevant feature. Both Bootstrap and Superfish CSS/jQuery menus are supported.		C	A	B	A	
<a href="#">Look and Feel</a>	The site can be customized or personalized using the admin interface, to set the site title, logo and so on. No need for editing PHP or Smarty TPL files.		B	A	B	A	
<a href="#">Modules</a>	Boxes for content, typically on the left or right of a portal-style site but can be placed anywhere, even in page content, with or without a visual frame. Very useful for navigation and content re-use. <a href="#">Over 100 built-in modules</a> are available, and site admins can create their own.		A	A	B	A	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
Structure	In Tiki terminology, a structure is a hierarchy for wiki pages. Structures have navigational features such as breadcrumb links and menus; also enabled is printing all pages in the structure and in order.		B	B	A	A	
Semantic Links	Going beyond <a href="#">Backlinks</a> , allows to define some semantic relationships between wiki pages		C	C	B	B	
Bookmarks	User bookmarks let users bookmark internal or external pages, create folders and organize their personal bookmarks in folders. Bookmarks can be cached if that option is enabled. A module is provided to let the users see their bookmarks, navigate through them, and add new bookmarks.		C	C	C	C	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon
<a href="#">Custom Home (Removed in Tiki 15)</a>	This feature was made redundant by the ability, via PluginLayout, etc., to fully customize a standard wiki page to use as the Homepage.		B		A	C	
<a href="#">Meta Elements</a>	Administer your meta tags via the admin panel (no FTP transfers necessary).		B		A	C	
<a href="#">Search Engine Optimization</a>	Tiki is search engine friendly. For a Tiki site running on Apache web server, the .htaccess file enables short, meaningful URLs.					C	
<a href="#">User Menu</a>	Add personal items to the User Menu section in the application menu.					unrated	

Transversal features

These are features that can apply to multiple content areas.



Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability ▲	Feature-set and power	Admin icon
Score	If appropriate for the site, this feature implements a game approach to motivate people to participate in the online community. Users are given points for things they do in the site, like writing or reading an article, starting a new topic in a forum, voting in a poll, etc. They also earn points by having his/her blogs and articles read and commented on. Then the users will be able to see their position in a ranking.	🔧				C	🏆
Accessibility	Not so much a feature as a value, <a href="#">web accessibility</a> is prioritized in Tiki.	🔧				C	
Interaction with popular external software, services or websites	For example: <a href="#">Google video</a> , <a href="#">Google Maps</a> , <a href="#">YouTube</a> , <a href="#">Skype</a> , <a href="#">Google AdSense</a> , <a href="#">Mindmap</a> and <a href="#">many more!</a>	🔧				A	
Themes	Thirty-three visual themes are included and several have theme options (color variants). And, with Bootstrap compatibility, it is straightforward to create your own. Tiki themes are visual layers only and so avoid the possibility of introducing a security vulnerability.	🔧	A	A	A	A	📄
Workflow	Workflow is provided by means of category transitions and other configuration settings.	🔧	C		B	A	


Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability ▲	Feature-set and power	Admin icon
<a href="#">i18n</a>	i18n (or internationalization) - Tiki is translated in 20 languages. Handles multilingual navigation & content. Can keep track of translation (de)synchronization. <a href="http://wiki-translation.com">http://wiki-translation.com</a>		C	B	B	A	
<a href="#">Compression</a>	Transparently compress your pages on-the-fly.		A	A	B	A	
<a href="#">Comments</a>	Comment posting available for many features (wiki pages, articles, blogs, forums, etc)		B	B	B	B	
<a href="#">Banners</a>	Insert, track, and manage advertising banners.		B	A	B	C	
<a href="#">Mobile</a>	Tiki uses the Bootstrap CSS framework by default for responsive web design - pages conform to the display size of all desktop and mobile devices.		B	B	B	B	
<a href="#">News Feeds</a>	Outgoing RSS feeds can be generated, and external RSS feeds can be subscribed to.		B	B	B	A	
<a href="#">Search</a>	Configurable site search engine that indexes content of many features		B	B	B	A	
<a href="#">Contribution</a>	Allow selecting, reporting and exporting the type of contributions made by site users.		A	A	B	C	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability ▲	Feature-set and power	Admin icon
<a href="#">Tell a Friend</a>	With this feature activated, to share pages, a link "Email this page" is added at the top of all pages.	🔧	B	B	B	C	
<a href="#">Workspaces</a>	Workspaces permit you to segment a Tiki instance into smaller restricted-access sections with unique preferences, themes, etc.	🔧	D	B	B	A	
<a href="#">Social Networks</a>	Integrates popular social networks (such as <a href="#">Facebook</a> , <a href="#">Twitter</a> , <a href="#">Linkedin</a> or <a href="#">Google+</a> ) into Tiki.	🔧	B	B	B	B	
<a href="#">Print</a>	Includes printing pages, groups of pages, and PDF documents.	🔧	B	B	B	B	
<a href="#">Community</a>	Configure site community settings such as user identity and participation details, and social interaction settings.		B	B	B	C	
<a href="#">Statistics</a>	Site-wide statistics for many features. Referrer stats and search stats also available.	🔧	B	B	C	C	
<a href="#">Watch</a>	Site users can mark a page or other object to be notified by email when it is updated.	🔧	B	B	C	B	
<a href="#">Mail-In</a>	Submit wiki pages or articles via e-mail.	🔧	C	C	C	B	
<a href="#">Tags</a>	Wiki pages, articles, and so on can be given tags (aka freetags or folksonomy tags) for quick ad hoc content categorization.	🔧	A	B	C	B	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability ▲	Feature-set and power	Admin icon
<a href="#">Color Modes</a>	Color modes enable website users to select an alternative color scheme. Initially in Tiki 26, users can switch between light, dark, and auto (auto mode means following the preference set in the user's browser). In Tiki 26.1, the ability to add custom color modes via Look and Feel admin controls will be added.		C	B	C	C	
<a href="#">Rating</a>	Lets users vote on wiki pages & tracker items		D	B	D	C	

## Content-editing features

These are features that you can use in all text content areas, such as wiki pages, blogs, articles, and forum.

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon ▲
<a href="#">Wiki Plugins</a>	<a href="#">Over 100 built-in plugins</a> extend the function of wiki syntax with more specialized commands. It is very easy to create your own plugins with <a href="#">plugin alias</a> or from scratch.		B	B	B	A	
<a href="#">External Wikis</a>	Create links easily with other wikis.		B	B	A	C	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon 
<a href="#">Automatic Table of Contents</a>	Automatically generate and display a table of contents based on page titles within a structure (toc), or from the headings on a page (maketoc).		A	C	A	C	
<a href="#">Random Taglines</a>	Taglines (aka "cookies" or "fortune cookies") drawn randomly and displayed.		B	B	A	C	
<a href="#">Hotwords</a>	If enabled, wiki pages are parsed and some words are automatically converted to HTML links.					C	
<a href="#">Cache</a>	External URLs can be cached inside Tiki - this is possible for links from the Wiki as well as for the User Bookmarks		B	B	A	C	
<a href="#">Content Template</a>	Create and select reusable text or layout code when editing a wiki page, article, or newsletter to have a consistent look and feel and/or content.		B	B	B	C	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon 
<a href="#">Wiki Syntax</a>	Apply formatting and styling to text directly or via editor toolbar buttons; no need for HTML. Strong help feature and usable throughout various features such as blogs and articles, not just in the wiki!		B	B	B	A	
<a href="#">Dynamic Variable</a>	Snippets of text which can be reused throughout Tiki.		C			C	
<a href="#">Toolbars</a>	The edit page toolbar enables styling text, adding an image, Makes using wiki syntax easy. Custom buttons can be added, and toolbars can be customized for the various sections of the site.		C	C	B	A	
<a href="#">PluginModule</a>	Insert a content or functionality module in any editable-text area of the site, such as a wiki page, article, etc.		B	C	B	B	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power	Admin icon 
<a href="#">Copyright</a>	The Copyright Management System (or ©MS) is a way of licensing your content and displaying that license information, such as under an open or free content license. By switching this feature on, you can define a content license for all your wiki content, associate copyright notices with individual pages and display a full license for printing.		D			C	
<a href="#">Polls</a>	Make and manage lists of options to be voted on; polls are displayed in a module (in left or right column or other module zone, in wiki pages, etc.).		B	A	C	C	

Administration features





Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user ▲	Stability	Feature-set and power	Admin icon
Permissions	Different rights can be assigned to groups. (ACLs)	🔧	C		A	A	
Edit Template	Edit the Smarty template files that Tiki is built with via the admin control panel.	🔧	B		C	B	
Installation	Tiki site installation is a simple process of going through the steps of a wizard, and post-install configuration also offers wizard options.	🔧	A		A	A	
Manager	A combination of shell and PHP scripts to install, update, backup and monitor (check security of) a large number of Tiki installations (instances).	🔧	D		C	A	
Communication Center	Send/receive objects to and from other Tiki-powered sites	🔧	B	A	A	B	



Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user ▲	Stability	Feature-set and power	Admin icon
<a href="#">Theme Control</a>	Visual themes can be flexibly assigned per user group, site section, content category, and so on.	🔧	A	A	A	A	
<a href="#">Cache</a>	Tiki uses the built-in cache of the <a href="#">Smarty template engine</a> .	🔧	A	A	B	A	
<a href="#">Banning</a>	Block access from individual IPs or ranges of IPs.	🔧	A	A	A	B	
<a href="#">External Authentication</a>	Can use LDAP (Active Directory), PAM, <a href="#">Auth</a> , <a href="#">Http web server</a> , <a href="#">CAS</a> or <a href="#">Shibboleth</a> .	🔧	B	A	B	A	
<a href="#">User Administration</a>	Great flexibility in handling user registration, logging in, and banning of users, should that be necessary.	🔧	A	A	A	A	⚠️

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user ▲	Stability	Feature-set and power	Admin icon
<a href="#">Groups</a>	The three default groups (anonymous, registered, and admin) can be added to freely as needed for the site. Groups can inherit other groups' permissions, to simplify access management.		A	A	A	A	
<a href="#">Profiles</a>	In Tiki terminology, a "profile" is a set of site configuration preferences and website item creation instructions that are applied as a group.		A	A	B	A	
<a href="#">Edit CSS</a>	Existing stylesheets can be edited (via the browser), with the new stylesheet suffixed with the editor's user name.		B	B	E	C	
<a href="#">Action Log</a>	Track user activity on the basis of a single user or multiple users, groups or categories.		B	B	B	C	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user ▲	Stability	Feature-set and power	Admin icon
<a href="#">Connect</a>	Various tools for communication with the Tiki Community, developers, other Tiki site admins and users.		B	B	B	B	
<a href="#">Payments</a>	Enables the requesting and management of payments (invoicing), and connects payments to other features.		C	B	B	C	
<a href="#">Packages</a>	External software packages installation and management via <a href="#">Composer</a> .		B	B	C	C	
<a href="#">Intertiki</a>	Authenticate users and grant them appropriate permissions at a "slave" Tiki site based on user data from an external "master" Tiki site. (This is used at the Tiki project sites, for example.)		D	C	D	B	

Feature name and link	Description	Dev (Bug reports & Feature requests)	Setup and admin UI	UI end user	Stability	Feature-set and power ^	Admin icon
Integrator	Automatically import external HTML pages into Tiki.		D	B	B	B	
Debugger Console	Debugger Console					B	
Web Services	Can receive <a href="#">web services</a> via JSON or YAML.		D		C	B	

## Other

Feature name and link	Description	Dev (Bug reports & Feature requests)	Admin icon
We eat our own DogFood	Tiki is a community. Tiki is a software. The Tiki community is recursively using and improving the Tiki software, which is used to support the community as well as to make available to the general public.		
Open Development	Written and maintained by an active and international community of volunteer contributors. While many developers offer consulting services, no company controls the development. Think of Tiki as applying the wiki way not just to content but also to software development. YOU are invited to participate!" Please read more about the <a href="#">Tiki Model</a>		
Open standards and protocols	Tiki developers are Tiki users too and prefer open protocols and standards - <a href="http://tiki.org/TikiStandards">http://tiki.org/TikiStandards</a> .		
Platform independence	Tiki runs wherever PHP runs, on Linux, Mac, Windows and many more other operating systems.		
Browser Compatibility	On the client side, all you need is a Web browser running on a desktop computer, laptop, tablet, or smartphone.		

Feature name and link	Description	Dev (Bug reports & Feature requests)	Admin icon
<a href="#">Documentation</a>	Tiki's documentation is a wiki (of course!). So you can participate! There are links from your installed Tiki application directly to the corresponding documentation wiki page. As the documentation is constantly being updated and organized, broken links may sometimes occur. Please bear with us and feel free to participate!		
<a href="#">External Libraries</a>	Tiki makes good use of existing and active open source projects such as Zend Framework, Smarty, MySQL, PHP, jQuery, Bootstrap, CKeditor, etc.		

## Features via [Profiles](#)

In Tiki terminology, a "profile" is a set of site configuration preferences and website item creation instructions that are applied as a group. The website [profiles.tiki.org](https://profiles.tiki.org) is the main repository for these.

Some profiles are simple, like a contact form, and some are more complex, to the point of being a new feature, in effect. These are crafted packages of wiki page content, site feature preference and other configuration settings and so on that can be imported to a Tiki site from a profiles server, and activated to implement new functionality at the site.

So Tiki Profiles aren't listed as pre-made features, but can be installed to, in effect, create a new feature at the site.

For more information, please visit [Profiles.tiki.org](https://profiles.tiki.org).

### General notes:

#### About Tiki Features

Because Tiki offers such a large number of features "out-of-the-box", it can be overwhelming, even to an experienced user or administrator. Tiki has all the classic CMS and portal features of other applications, but also includes features not available anywhere else. Tiki is highly configurable and modular; all features are optional and can be administered through Tiki's browser-based interface.

What makes Tiki different? Its tight integration of all the features.

### Community

The whole Tiki Wiki CMS Groupware is a very active project. You can monitor activity at <https://openhub.net/p/tikiwiki> Over [400 people have contributed to the source code](#). With such a large number of contributors, the features continue to evolve and get better. Because Tiki is a FLOSS project, [you can participate](#) and help make it better!

### Using this evaluation

This self-evaluation of features will help you know what to expect after installing Tiki. Many features are widely used and quite stable. Others are new and experimental. While others are no longer maintained and may have limited functionality. For beginners, we recommend using features that have been rated as

**A** or **B**; they are the most stable. The features and ratings are based on the [latest stable version of Tiki](#).

### Updating this evaluation

To update and improve this self-evaluation, please [login](#), then click the name of the feature. You can then complete any of the missing information or change items that you feel are incorrect. For example, if you think a feature deserves a **B** rating instead of a **D**, you can change it. You can also add comments about the features.

Note: All changes will be reviewed by a [project admin](#) and may be edited or modified if needed.

To report a bug or request a new feature or enhancement, please use our [bugs & wishlist tracker](#).

### Missing features

This page may not list all features. For example, many [plugins](#) are missing from this self-evaluation.

By now (if you read this far!), you must be thinking "Wow, what does this thing *not* do?". Please see "[Major Features Missing In Tiki](#)" for a list of features that are not a part of Tiki.

### Standards, and interaction with other services & application

Please see: [Interoperability](#) for dozens of examples

### Community organization and priorities

Please see: [SWOT](#)