

Brushtail – An Open Source Intranet

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Abstract:

Brushtail is an intranet application developed at Eastern Regional Libraries that is now available as open source software. The intranet was developed to provide a web portal for library staff to easily access policies and procedures. In addition to a content management system it includes some custom applications that include an events and computer bookings. It is cross platform and runs on software freely available on the Internet.

What is Brushtail?

Brushtail is an intranet application developed at Eastern Regional Libraries (ERL). It has been made available as open source software. In this case, this simply means that it is free to any anyone who might find it useful.

The history of Brushtail

Eastern Regional Libraries is a library service with 13 libraries over three municipalities. Prior to an intranet, policy and procedure manuals were held in print copy at the library branches. If these were updated, paper updates were distributed by courier. Accessing network documents over the Wide Area Network was too slow to be practical. To address this, a staff intranet was initiated so staff could access organisational information through a web browser. Computer and event bookings were also paper based. Putting patron bookings on the intranet allowed more flexibility with customer service. The first incarnation of the intranet was a mixture of static html and web scripts. The limitations of this in terms of content management led to the intranet being rewritten from scratch as a content management system (CMS). This application has been named Brushtail.

The goals of the ERL intranet are the following:

- Provide staff with a portal for searching policies and procedures quickly.
- Improve communication across a regional library service.
- Enable event, room and computer bookings to be done online from any library location.

What can Brushtail do?

The core of Brushtail is a simple content management system; however, it does have booking and other customised applications. Brushtail is completely administrated through a web browser. This includes content, user permissions and other configuration details.

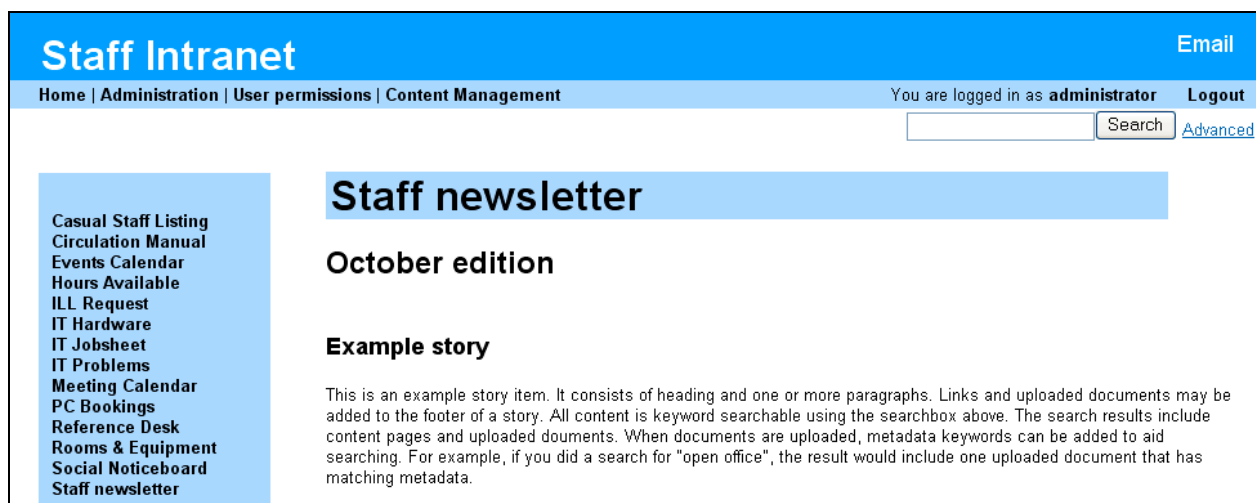


Figure 1 Intranet front page

The applications of Brushtail include:

- Content management system
- PC bookings
- Events calendars and event bookings
- Room bookings
- Contact forms
- IT jobsheet
- Reference desk
- Casual staff listing
- Hours available notice board

Content Management system

When the staff intranet first began at Eastern Regional Libraries, it was composed of static html. This resulted in the “webmaster bottleneck” problem. This is when changes can only be made through a single person, such as the intranet administrator. What was needed was a content management system that would allow distributed authorship. A content management system was developed to address this.

There are many advantages to a content management system.

- Authoring can be done through a web browser.
- Staff do not need to know any html to create and update content.
- User read and edit permissions can be defined per user.

Permissions for user staff			
Main Menu			
Module Name		Power User	IP Access
Casual Staff Listing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Circulation Manual	<input checked="" type="checkbox"/>		
Events Calendar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Hours Available	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Figure 2 User permissions

Using a content management system all the staff policies and procedures can be put online. One advantage is that the when a manual is updated it is published immediately. When the manuals are in print format, updated pages have to be physically distributed to branches and the manuals updated. Another advantage is that content is now keyword searchable. This means that policy and procedure information can be located more quickly. A search result may retrieve information that is distributed across different manuals and policies.

Intranet Search

Search for results for *story*

There were 2 intranet pages found.
There were 0 intranet documents found.

Intranet pages

- 1 [October edition](#)
Staff newsletter > October edition
- 2 [September edition](#)
Staff newsletter > September edition

Figure 3 Search results

It is possible to upload documents onto the intranet. Documents are suited to uploading as files if they need to be printed off or have complex formatting. For example, documents such as leave forms can be made available on the intranet as Adobe acrobat files to be printed off on demand. Uploaded documents can be included in the intranet search by supplying metadata keywords at the time of upload. The intranet is not intended to replicate a network drive or be a repository for a large number of uploaded documents however. In general it is better to copy information into new intranet content pages. This means the content can be searched full text. The goal is to allow staff to find information quickly.

There are a number of open source content management systems available on the internet. Brushtail is different in the following ways.

1. Compared to some other content management systems, the content management of Brushtail is simpler. Some content management systems have an impressive feature list, including page layout customisation, content publishing workflow management and so

on. A lot of features can however, can make them more complex to use. For example, Brushtail does not allow the design to be customised beyond changing the colour scheme. Less complexity can have the advantage of a shorter learning curve to get an intranet up and running.

2. Brushtail is also differentiated in that it includes applications for PC, event and meeting room bookings.

Events calendar

Any number of calendars can be created. Calendars can be used to simply list events or as an event booking system. The intranet administrator can define the behavior of event types. Different event types can be split into separate calendars or can be merged into a single calendar. At ERL bookings for library events, public internet training, school holiday events and staff training are all handled through a single calendar. Event bookings through the intranet allow staff to make patron bookings into events at other branches without having to make telephone calls. A regional manager can see how full library events are, simply by looking at the events calendar.

Events Calendar						
December 2005						
Previous month						Next month
				1 Thursday	2 Friday	3 Saturday
Sunday	5 Monday	6 Tuesday Elvis Presley Woop Woop Library 7:00 pm	7 Wednesday	8 Thursday	9 Friday	10 Saturday
11 Sunday	12 Monday	13 Tuesday	14 Wednesday	15 Thursday	16 Friday	17 Saturday
18 Sunday	19 Monday	20 Tuesday	21 Wednesday	22 Thursday	23 Friday	24 Saturday

Figure 4 Events Calendar

PC bookings

Prior to the intranet public computer bookings were paper based. An online bookings application means that bookings can be made from any library location. If the computers at a particular branch are booked out, staff can make a patron booking at another library without having to telephone that library to check if computers are available. Unlike the paper based booking system, bookings can be made from any staff computer in the library. The intranet automatically calculates booking statistics; both total hours booked and total number of bookings.

The bookings system is customisable. For example some library services have public computers dedicated to specific usages, such as internet or word processing. Other library services may allow a public computer to be booked for a number of different uses. The PC booking system can be adapted to either scenario. The booking system can also block specified patron barcodes. If a patron has been banned from using the internet for a period of time, this can be implemented in the booking system.

Wed		Thursday 08/12/2005			Fri Sa	
Time	Internet PC One	Internet PC Two	Genealogy PC	Time		
10:00 am	Carl Perkins 1167 6543			10:00 am		
10:30 am	Carl Perkins 1167 6543			10:30 am		
11:00 am				11:00 am		

Figure 5 PC bookings

Room bookings

There is also a booking system for meeting/community/training rooms. This can be configured to send an email message to a manager's email address containing the particulars of each booking. A calendar displays the room bookings to make it obvious when a room is available. One advantage of online bookings means that a manager can book out a training room at another location without having to make telephone calls.

Add booking

Booking Name

Start time

Finish time

Recurrent booking No Yes Every for bookings.

Contact Name

Telephone

Figure 6 Adding a room booking

Contact forms

The administrator can create contact forms that email form input to a designated email address. Such forms can be used for ILL requests, submitting cataloguing errors, signage request and so on.

IT Jobsheet

This is a database used by IT support staff to track IT problems. IT problems can be logged by any staff member through a form. The IT staff can view a list of current problems, browse completed problems or even do a keyword search. The keyword functionality means that this can also be used as an IT knowledgebase by the IT staff.

Reference Desk

This is a database for logging deferred reference enquiries, eliminating paperwork. Enquiries older than a period specified by the administrator will display in red. Similar to the IT Jobsheet, it can be keyword searched. The ability to keyword search means that it could be a database of frequently asked questions. Sometimes topical events, for example the Olympics, can result in the same reference question arising repeatedly.

Casual staff listing

This is a calendar that will list of available casual staff for any given day. This can be used when a staff member is sick and a replacement needs to be found. If a casual staff member accepts the work then the manager can immediately remove the staff member from the available list. When a paper based list is used it is possible for a staff member to be rung several times by different library branches.

Hours available noticeboard

This is a noticeboard for library managers to advertise roster shifts that need to be filled. This provides staff with a single place to look when checking for available work.

Where do I get Brushtail?

Open source

ERL has allowed this intranet application to be available as open source software. This means that it is freely available to any libraries that may wish to use it. There are other open source content management systems available on the internet. Some of these are collaborative projects involving teams of developers. Brushtail, however, is simply an in-house application made by a single developer, that has been shared in the public domain. The intranet is made available in the hope that it will be useful, but without any warranty by ERL. Brushtail has a homepage, <http://home.aanet.com.au/brushtail>, from where it can be downloaded. The website includes documentation and updates.

Software requirements

The intranet and the server software required to run it, are both available for free. The Brushtail application was developed in the open source PHP scripting language. The intranet application requires a PHP enabled web server. The intranet content is stored in a MySQL database. PHP and MySQL are cross platform software and can run on the Windows, Linux, Unix and Novell operating systems. PHP and MySQL are free and can be downloaded off the internet. Most Linux distributions come bundled with PHP and MySQL.

Implementing an intranet

What to put on the intranet

An intranet is not about replicating a network drive with all its documents. It is more about creating a way of quickly accessing information that is most frequently needed. Content that is suitable for keyword searching is appropriate for inclusion on the intranet. The obvious examples here are manuals and policies. Information that changes over time and needs to be updated is another candidate. For time sensitive content there is clear advantage in being online rather than print. An example of this may be the contact details on a staff listing.

Ownership of content

When content is put on the intranet it is important that the ownership of the content does not change. Staff can easily gain the impression that something is being taken away from their area of responsibility when it is put on the intranet, particularly when the intranet is new. The purpose of the content management system is that any staff member can be enabled as an intranet author.

Training

When introducing an intranet there needs to be some staff training. Even if it is in the form of branch visits to demonstrate how it works. This is particularly true of any booking systems that are used in customer service. It is important that new staff are given an introduction to the intranet during induction training.

Change management

Implementing an intranet is not a short term project. Getting staff to use an intranet involves a change in work culture and mindset. This takes time. The more useful and relevant the content the sooner staff will adopt it. An intranet needs to get a “critical mass” of content and or features before the staff see the intranet as useful. At this point, staff will begin to make suggestions about new content for the intranet. It also helps if there things on the intranet that need to be used regularly. If regularly accessed things like PC bookings and event bookings are on the intranet, staff become more quickly exposed to the intranet. If the organisation uses webmail, it can help to put a link to that in the intranet. Putting up a “social” noticeboard that staff can post to can also offer an incentive for staff to log into the intranet.

Intranet usage and feedback

Intranet visits are automatically logged and the administrator has access to daily and monthly visit totals. This is a rough numeric indicator of staff use of the intranet. At ERL an average weekday will see about 300 logins a day. Staff feedback has provided qualitative information for ongoing revision of the intranet. Feedback may be about intranet content or usability issues. A number of usability improvements in the PC booking system have come from suggestions volunteered by staff. Some ideas for the intranet have fared than others. When the PC booking system was implemented, it generated quite positive staff feedback. The “Reference Desk”, by contrast, was not successful. The “Reference Desk” allowed to staff to log deferred reference enquiries. After some months it was clear that this was not being used by staff, and so it was taken off the intranet.

Conclusions

Brushtail has been in use for two years at ERL. Over time, staff acceptance of the intranet has grown. The visit logs indicate a high rate of visits. Improvements and changes have been made, often after staff feedback. It has been designed to meet the needs of a regional library service, so some features are most useful in that context. The events, room and PC bookings features are true of this. Brushtail may not be appropriate for many libraries because of organisational or technical reasons. The library service may be part of a council that already has an intranet, the IT department supporting the library may not be receptive to open source software or possess the IT skill set to install it. There may be libraries, however, that are interested in a free intranet that has been specifically developed for a library environment. Brushtail has been made available so any such libraries may use it.