

Just Email it to Me!

or, Why Things Get Lost in Shared File Repositories

Emilee Rader

10 April 2006

- introduction
- the problem, and related work
- research questions
- research design
- preliminary findings and observations

“...Because there is a group of us using the site I find it difficult to keep up with what is located where, and so ask people to email me direct copies of materials I need...”

the problem

- people who work together often need to share files, often via storage space on a server
- information accumulates over time until it becomes difficult to keep track of what's there
- such repositories tend to be used less often than email and personal contacts when looking for information

CTools : SI DSO : Resources

https://ctools.umich.edu/portal/site/1084809818012-1151812/page/1091327431588-13913 Google

home del.icio.us post ff StatTracker web of science CTools MySQL 5.0 emilee aa webcam weather movies financial UM

SourceForge.net CVS Re... CTools : SI DSO : Resour... NetStorage mfile: afs file manageme...

CTools UNIVERSITY OF MICHIGAN Logout

My Workspace Grad Tools - ejrader Collab Apps Lab SI DSO POLSCI 793 001 - more -

SI DSO Doctoral Students' Organization

Home
Schedule
Announcements
Resources
Discussion
Chat Room
Email Archive
News
Help
Users present:
Emilee Rader

Resources ?

Upload-Download Multiple Resources | Permissions

Resources

Location: SI DSO Resources

Title	Size	Created By	Last Modified
SI DSO Resources Edit Add Folder Add Item			
+ *Workshops/Brown Bags Edit Delete Add Folder Folder Permissions Add Item		M Schuon	09/06/05
+ Academic job interview resources Edit Delete Add Folder Folder Permissions Add Item		M Schuon	12/15/04
+ Awards/Fellowships Edit Delete Add Folder Folder Permissions Add Item		M Schuon	05/12/05
+ Conference Websites Edit Delete Add Folder Folder Permissions Add Item		Cory Knobel	05/17/04
+ Courses Outside SI Edit Delete Add Folder Folder Permissions Add Item		Erik Johnston	11/15/04
+ Dissertation examples Edit Delete Add Folder Folder Permissions Add Item		Kelly Garrett	07/12/05
+ Doctoral Poster Session Edit Delete Add Folder Folder Permissions Add Item		Erik Johnston	08/26/04
+ Doctoral Student Handbook Edit Delete Add Folder Folder Permissions Add Item		Cory Knobel	05/17/04
+ Doctoral Student Resources Edit Delete Add Folder Folder Permissions Add Item		M Schuon	08/26/05
+ DSO Documentation Edit Delete Add Folder Folder Permissions Add Item		Erik Johnston	03/21/05

NetStorage

https://141.211.202.30/NetStorage/

home del.icio.us post ff StatTracker web of science CTools MySQL 5.0 emilee aa webcam weather movies financial UM

SourceForge.net CVS Re... CTools : SI DSO : Resour... NetStorage mfile: afs file manageme...

NetStorage

Novell.

User: .ejrader.SI.UMich

Location: /NetStorage/G-GROUPS/CREW/SIB

File | Edit | View | Help

Filter: *

Name	Size	Modified
<input type="checkbox"/> aom2002		08/24/2004 1:17 AM
<input type="checkbox"/> Behavioral lab Photos		06/09/2005 10:37 AM
<input type="checkbox"/> CHI 2006		11/18/2005 2:30 PM
<input type="checkbox"/> CHI2002		02/17/2005 4:02 PM
<input type="checkbox"/> CHI2004		09/23/2005 5:39 PM
<input type="checkbox"/> CHI2005		07/28/2005 5:48 PM
<input type="checkbox"/> CMC papers		08/24/2004 1:17 AM
<input type="checkbox"/> Consent Forms		11/18/2004 2:25 PM
<input type="checkbox"/> CSCW2002		02/17/2005 4:03 PM
<input type="checkbox"/> CSCW2004		09/23/2005 5:04 PM
<input type="checkbox"/> danstalk		08/24/2004 1:17 AM
<input type="checkbox"/> daytraderf		08/24/2004 1:18 AM
<input type="checkbox"/> Exp materials		03/31/2005 2:23 PM
<input type="checkbox"/> Final Shape Factory data		10/03/2005 2:44 PM
<input type="checkbox"/> forms		11/18/2004 2:26 PM
<input type="checkbox"/> graphics		08/24/2004 1:18 AM
<input type="checkbox"/> help desk		08/24/2004 1:18 AM
<input type="checkbox"/> Human Communications Research ...		11/21/2005 4:38 PM
<input type="checkbox"/> IBM Toronto		09/28/2004 10:43 AM
<input type="checkbox"/> leadership		03/31/2005 12:27 AM
<input type="checkbox"/> learning organizations		10/05/2005 5:22 PM
<input type="checkbox"/> litsearch		11/23/2005 4:25 PM
<input type="checkbox"/> MapsToCrew		08/24/2004 1:19 AM
<input type="checkbox"/> MISQ travel paper		08/18/2005 12:52 AM
<input type="checkbox"/> Mixed model papers		07/29/2005 10:46 AM
<input type="checkbox"/> Multicultural SF		11/01/2005 10:25 AM
<input type="checkbox"/> Netl ooo model		11/23/2005 9:31 AM

CHPI
CIC
ClosetCulture
CN_Project
COA
CommunityKnowl
ComPix
ComputingAccess
Conduit
ConnectionProjec
cosen
COTELCO
CREW
SIB
aom2002
Behavioral la
CHI 2006
CHI2002
CHI2004
CHI2005
CMC papers
Consent For
CSCW2002
CSCW2004
danstalk
daytraderf
Exp material

who cares?

- sharing of files happens in nearly all types of computer-based work
- losing important information is frustrating
- and can result in lost productivity and other costs
- systems support the mechanics of sharing bits, but what about the user?
- level of analysis: individual, group

related work (I)

- personal file organization
 - Malone (1983)
 - Whittaker and Hirschberg (2001)
- strategies, conventions
 - Mark and Prinz (1997)
 - Berlin et al (1993)
- task interdependence
 - Wageman (2001)

related work (2)

- incentives in CSCW
 - Grudin (1988)
 - Markus (2001)
- common ground, vocabulary problem
 - Furnas et al (1983)
 - Fussell and Krauss (1989)

web vs. personal vs. shared

- web browsing and searching is often for completely new, unknown content
- personal files are all “known” to some degree, and the owner has complete control
- shared files may be known, unfamiliar, or somewhere between, and stored in unexpected places

my approach

- case study
- ctools project sites
- server and event log data
- interviews
- bias: what's unique about ctools?

research questions

- server and log data
 - looking for ‘types’ of sites and factors that lead to usage patterns
- interviews
 - For what do groups use shared file repositories?
 - What items are stored online? What items are not?
 - How are shared file repositories organized/structured? Formal vs. informal?
 - Is it difficult to find files in shared file repositories?

2005-02-13-lobster.log

Last Saved: 06/02/05 13:07:15
File Path: ~/Documents/SCHOOL/projects/precandidacy project/data and analysis/ctools/data/ctools_logs/2005-02-13-lobster.log

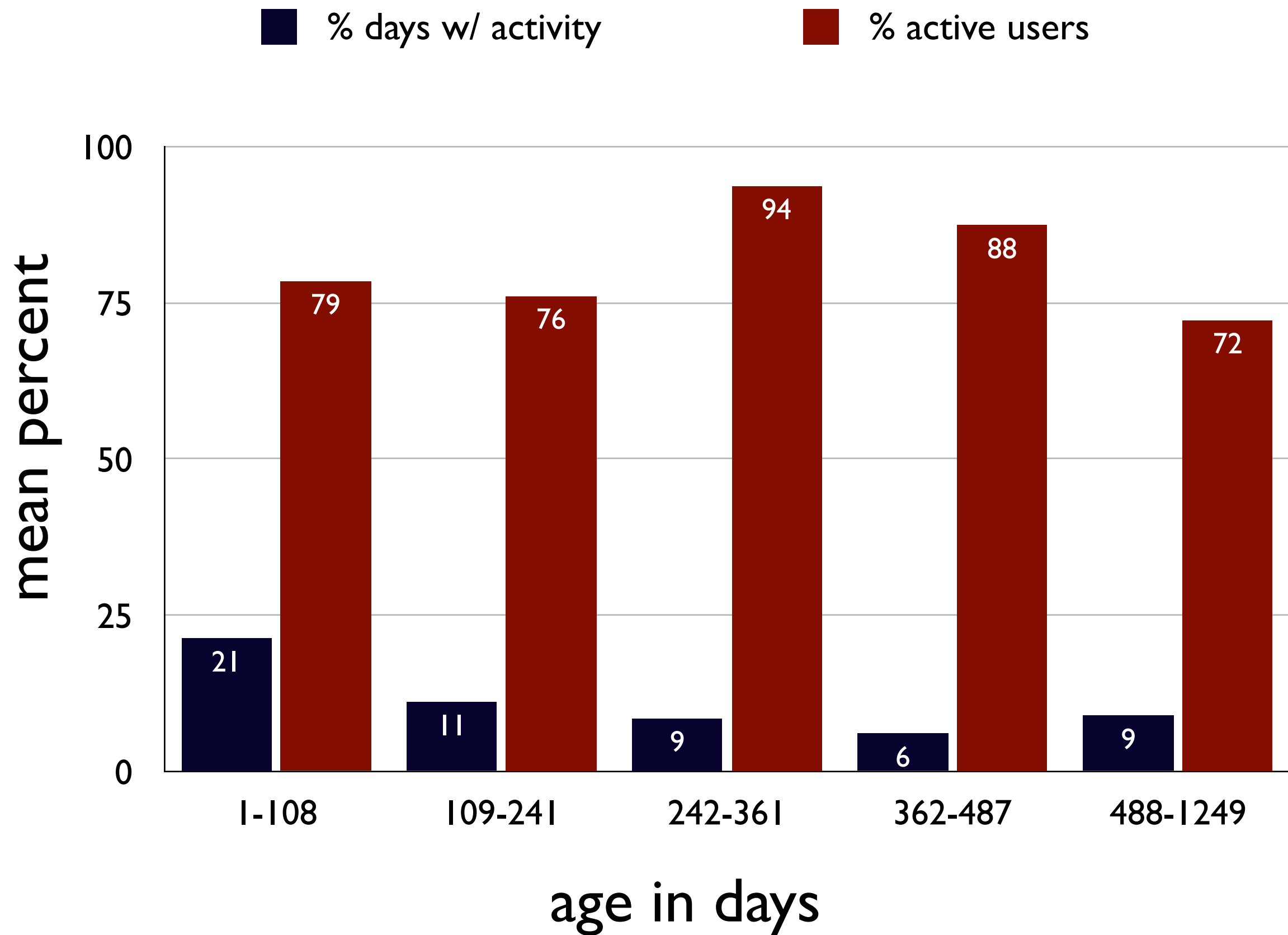
2005-Feb-13 15:29:23|content.read|/content/group/1105573479204-5886014/TERM PROJECT/Term Report Version 1.doc|lobster|dallam|141.211.253.198|Mozilla/4.0
2005-Feb-13 15:29:44|content.read|/content/group/1099951231053-3284716/e-texts/02_08_05 February 8/Wichmann Listening Language.pdf|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:29:54|user.logout||lobster|mibooth|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; .NET CLR 1.0.3705)
2005-Feb-13 15:30:39|content.read|/content/group/1099709028477-3246151/Lecture1.ppt|lobster|mbyal|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; .NET CLR 1.0.3705)
2005-Feb-13 15:30:39|content.read|/content/public/myworkspace_info.html|lobster|matmil|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:30:39|user.login||lobster|matmil|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:30:43|content.read|/content/public/webcontent_instructions.html|lobster|matmil|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:30:49|user.logout||lobster|jfromer|141.211.253.198|Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/125.5.6 (KHTML, like Gecko) Safari/125.5.6
2005-Feb-13 15:31:08|user.login||lobster|joshuale|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; .NET CLR 1.1.4322)
2005-Feb-13 15:31:08|content.read|/content/public/myworkspace_info.html|lobster|joshuale|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; .NET CLR 1.1.4322)
2005-Feb-13 15:31:08|user.logout||lobster|matmil|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:32:14|content.new|/content/attachment/1108323134421-18224224/Chan Chuck Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:32:28|asn.submit.submission|/assignment/s/1099951231053-3284716/1107207341433-17877747/1107838808975-18089284|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:32:30|asn.submit.submission|/assignment/s/1099951231053-3284716/1107207341433-17877747/1107838808975-18089284|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:32:46|content.read|/content/attachment/1108311861038-18220421/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:32:46|content.read|/content/attachment/1108311861038-18220421/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:33:41|content.read|/content/public/myworkspace_info.html|lobster|lidya|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:33:41|user.login||lobster|lidya|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:33:55|content.read|/content/attachment/1108311861038-18220421/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:33:55|content.read|/content/attachment/1108311861038-18220421/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:34:06|user.logout||lobster|lidya|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:35:06|user.logout||lobster|hehuang|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.0.3705)
2005-Feb-13 15:35:06|user.logout||lobster|joshuale|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; .NET CLR 1.1.4322)
2005-Feb-13 15:35:42|user.login||lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; UMLib User; .NET CLR 1.1.4322)
2005-Feb-13 15:35:42|content.read|/content/public/myworkspace_info.html|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; UMLib User; .NET CLR 1.1.4322)
2005-Feb-13 15:35:54|user.login||lobster|jfromer|141.211.253.198|Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/125.5.6 (KHTML, like Gecko) Safari/125.5.6
2005-Feb-13 15:35:56|content.read|/content/group/1101872149808-3830630/Administration/Site Admin/140 Home Text.html|lobster|jfromer|141.211.253.198|Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/125.5.6 (KHTML, like Gecko) Safari/125.5.6
2005-Feb-13 15:35:57|content.read|/content/group/1101872149808-3830630/Administration/Site Admin/MHNlogohome.gif|lobster|jfromer|141.211.253.198|Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/125.5.6 (KHTML, like Gecko) Safari/125.5.6
2005-Feb-13 15:36:34|content.read|/content/group/1104724406610-4565093/Exams/201 MIDTERM EXAM Winter 2005 SOLUTIONS.pdf|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:36:48|user.login||lobster|rlmurphy|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:36:49|content.read|/content/public/myworkspace_info.html|lobster|rlmurphy|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:36:54|content.read|/content/group/1104724406610-4565093/Exams/201 Midterm Histogram.xls|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:37:04|content.read|/content/group/1104724406610-4565093/Exams/201 Midterm Histogram.xls|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:37:06|user.logout||lobster|zragowsk|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:37:18|content.read|/content/group/1104724406610-4565093/Exams/201 Midterm Histogram.xls|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:37:32|content.new|/content/attachment/1108323452275-18224371/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:37:32|content.new|/content/attachment/1108323452275-18224371/Anusbigian Feb 8.doc|lobster|drolston|141.211.253.198|Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.7.5) Gecko/20041107 Firefox/1.0
2005-Feb-13 15:37:49|content.read|/content/group/1104724406610-4565093/Group Project/201 Case Study.pdf|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
2005-Feb-13 15:37:58|content.read|/content/group/1104724406610-4565093/Group Project/201 Group Project Instructions.pdf|lobster|aedulude|141.211.253.198|Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)

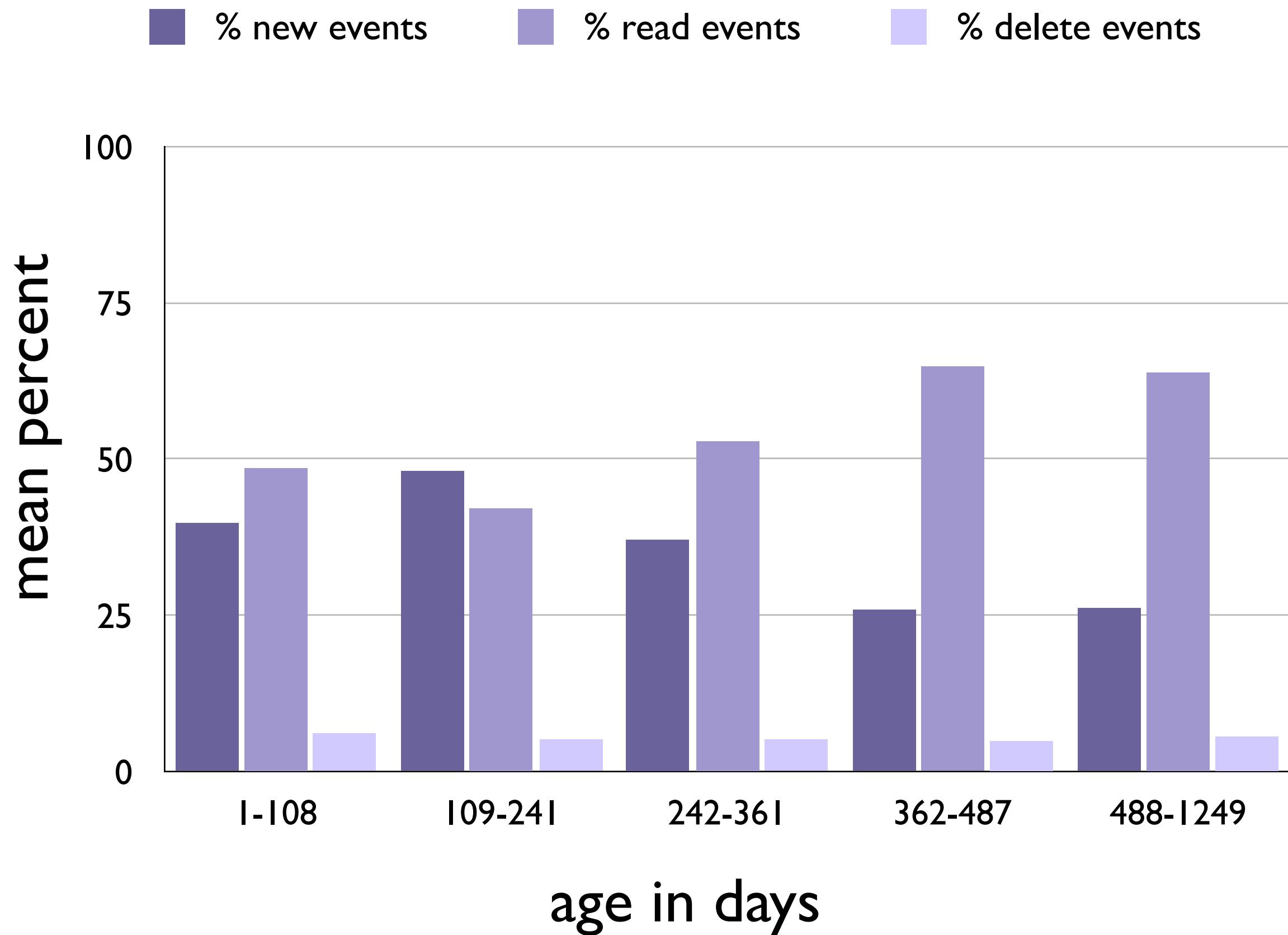
- 5304 project sites
- 1368 inactive (no events in 2005)
- a full year of event logs
- 976667 events, 15747 active users
- 244739 items accessed

descriptives

<i>for sites...</i>	Mean	Median	Mode	Max	St. Dev
age (in days)	330.15	315	672	217.31	1249
total users	14.61	5	1	405	15.71
% active users	78.18	75	1	138	2.35
items	52.44	15	0	16,113	289.69
total events	248.14	51	1	35,759	944.68
% 'new' events	43.79	33.04	100	100	33.85
% 'read' events	46.8	53.57	0	100	33.46
% 'delete' events	5.16	1.12	0	100	10.51

descriptives





sample: interviews

- sites with steady activity
- active users, local, 2-3 per site
- recruiting procedure
- 6 sites, 2-4 users per site
- 18 interviews, 45-75 min long
- so far, one interview per site transcribed

two sites:

business school club

biomed engineering lab

b-school club

in its 2nd year

9 members

43% days with an event

no “manager”

total items: 331

total events: 1516

‘new’ events: 24%

‘read’ events: 66%

‘delete’ events: 5%

biomed engr. lab

in its 4th year

~20 members

75% days with an event

lab manager

total items: 395

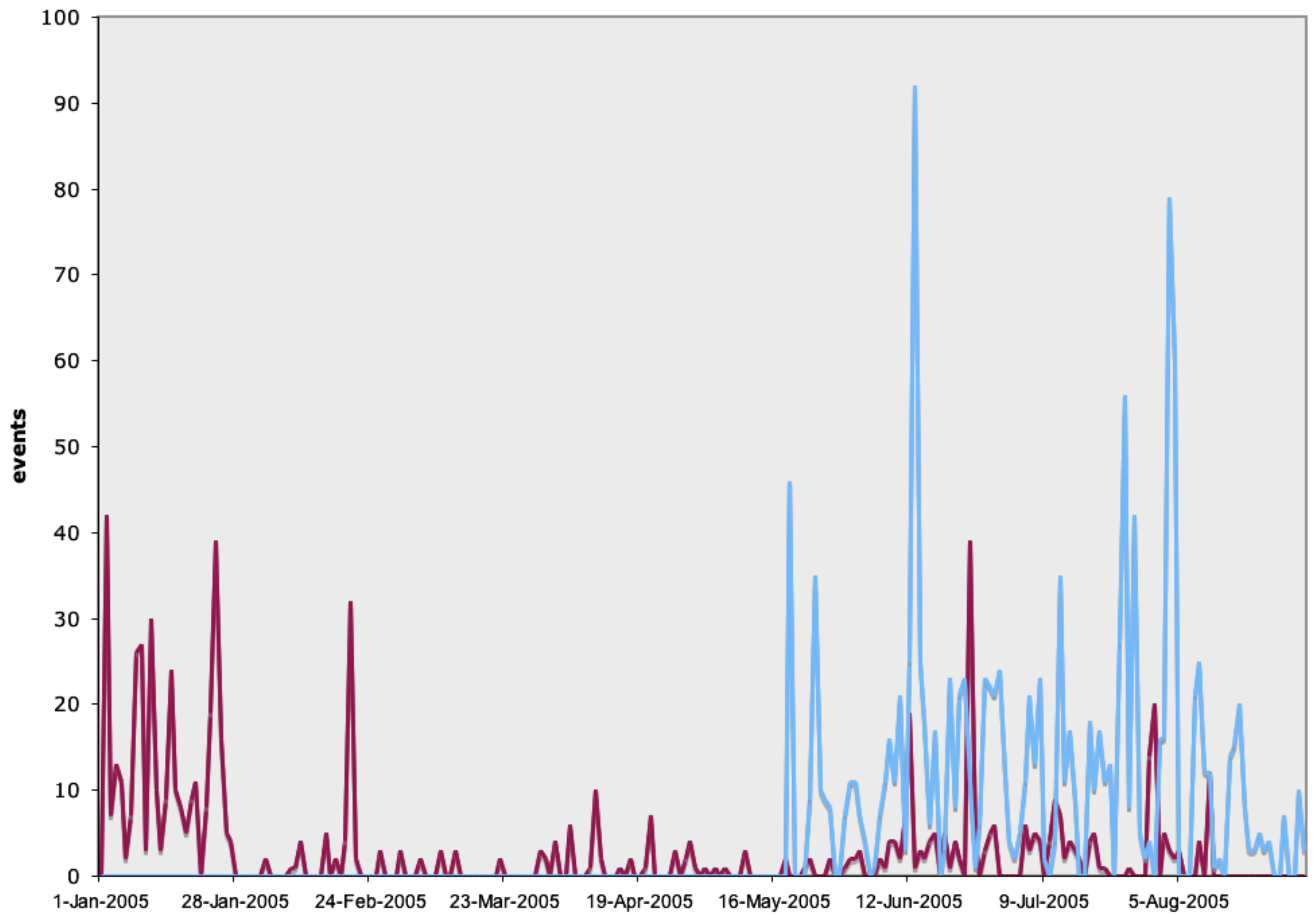
total events: 2416

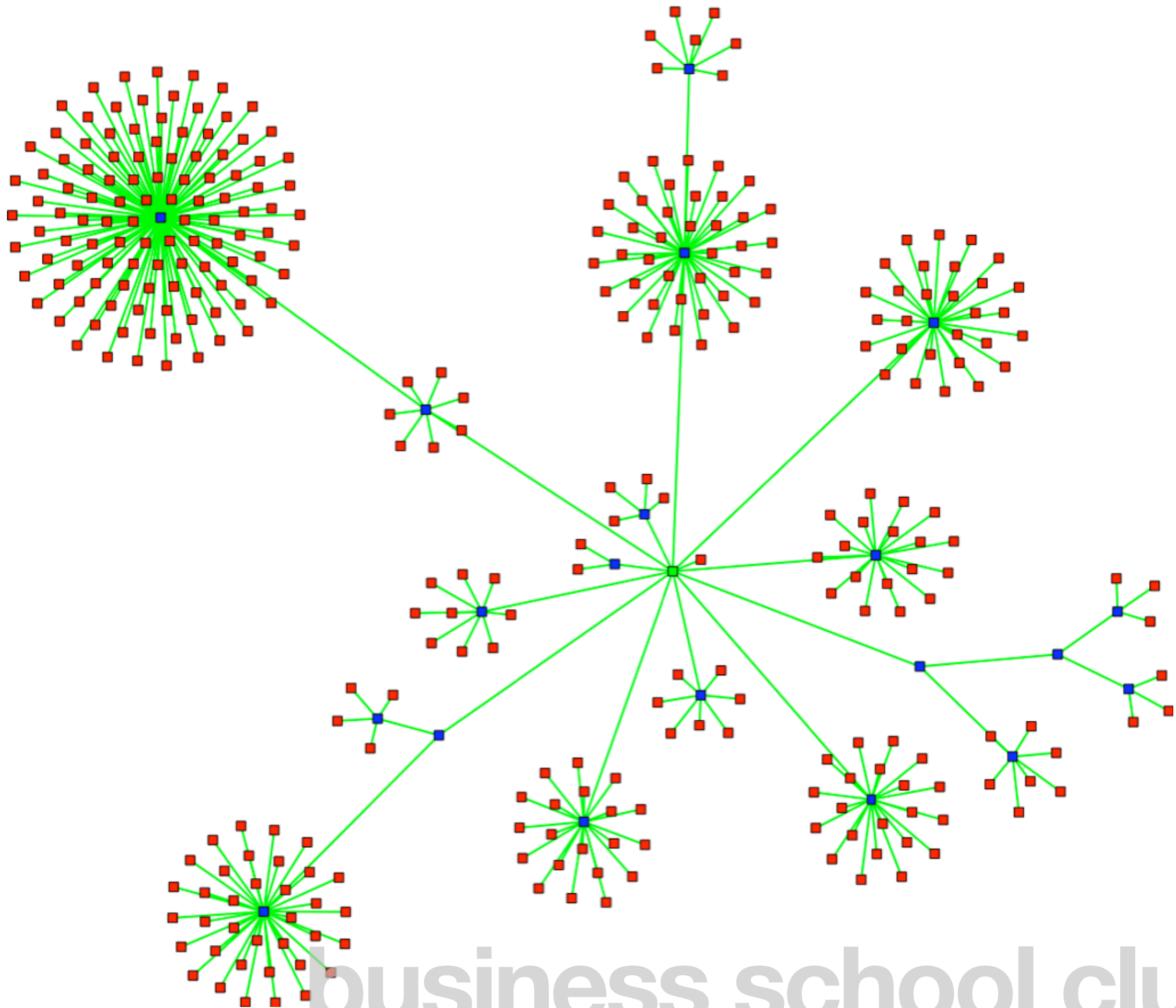
‘new’ events: 25%

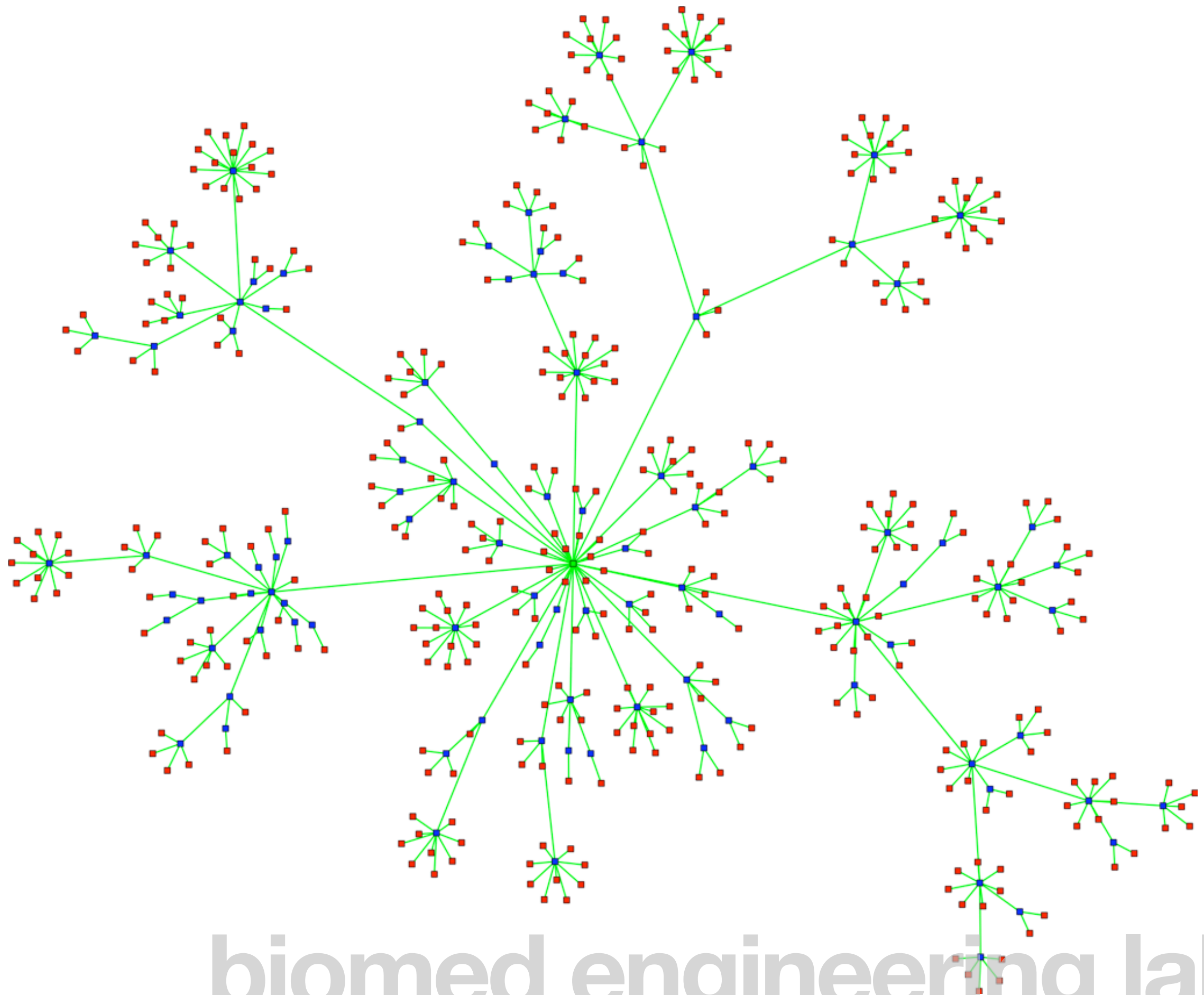
‘read’ events: 58%

delete events: 4%

descriptives







Business School Club

GROUP: interdependence, norms for sharing

INDIVIDUAL: knows how to use system

CONTENT: most files are recent

CONTENT: use of files is well-defined

SYSTEM: folder hierarchy not searchable

GROUP: agreed-upon conventions

INDIVIDUAL: unique strategies for organization

GROUP: critical mass

GROUP: incentives support participation

INDIVIDUAL: no site "manager"

CONTENT: group ownership

Biomedical Engineering Lab

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CONTENT: most files are old and unused

CONTENT: use of files NOT well-defined

SYSTEM: folder hierarchy not searchable

GROUP: no agreement on conventions

INDIVIDUAL: unique strategies for organization

GROUP: no critical mass

GROUP: no incentives

INDIVIDUAL: site has official "manager"

CONTENT: individual ownership



SHARE: stuff I (we)
work on is there

+

FIND (organize): when I
need it, I can get it

+

PARTICIPATE: everyone else
is using it so I will too

= Pattern
of Use

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= Pattern of Use

findings:
uses of project sites
what's stored online

- broadcast information
- “library”, backup
- calendar, schedule
- data storage
- archive communication

- ‘final’ versions, not works-in-progress
- “stuff other people might want to see”
- “stuff you should know”
- ‘indispensable’ information

findings:
site structure
finding files

- **site structure reflects group structure**

So for me, I know that really what I need is to go into the operations folder... so to be honest I don't think I've ever really even looked in the marketing folder. Because it's just not stuff that I need.

- **ownership and control**

I'm not the only person adding stuff to this site, and so I feel like I don't want to go around and tell everyone, "well I'm the CTools queen and I'm going to organize this and this is where it's gonna go."

- **nobody deletes anything!**

Um, lemme think if there's anything we've ever deleted. Yeah actually I don't think there is. I mean usually if we put it on the site it will stay there forever.

structure

- **influence of individual strategies**

Probably the biggest problem we have with CTools is that people tend to organize information different ways, you know like you have a picture in your mind of how you think it should be organized, and that's not exactly how someone else's brain works to organize things.

- **familiarity with site contents**

I haven't used this folder yet. But it's probably a bunch of papers... I totally need to read this, actually. This is really important, I should read this one. Because I'm doing work on that right now, after school stuff. It's my thing.

searching

summary...

- is there really a problem? YES!
- still a lot of analysis to go
 - looking for activity and participation patterns
 - code interview transcripts for factors identified in literature
- what's the take-home message?

thank you!

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references