What I've Learned About Information Management

(from Google and other places)
Mark Tomczak, Software Engineer
About Myself

Software Engineer for 10 years

4 years at a game development company (Sim Ops Studios, creators of Wild Pockets game development framework)

6 years at Google

Small collection of side- and hobby-projects (github.com/fixermark, http://fixermark.com)
Disclaimer

Views and opinions expressed are mine and not necessarily my employer's.
Information is most useful when

Public (as possible)
Searchable
Auditable
Collaborative
<table>
<thead>
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<th>Public (as possible)</th>
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<tr>
<td>Minimizes &quot;bus factor&quot; of information</td>
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<tr>
<td>Decreases likelihood of misunderstandings</td>
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<td>Decreases likelihood of duplicated effort</td>
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<td>Easier to keep everyone on the same page</td>
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"If it can't be searched, how can it be found when needed?"

Only so much we can hold in our heads

Needs change over time

Creators of information don't always know who will consume information
Types of Search

Keyword

Curated

Human ("welcome to my list!")

Automatic ("Others like you found this useful")
If you can name it, you can find it

Useful resources should have an associated URL

Web pages
Docs
Dashboards and control panels
If you can name it, you can find it

Sharing knowledge made easier by URLs

Dashboards and tools can be embedded directly into document via links

Aggregate links into "Here is what you need to know to do this task"

... and then changes to the linked resources don't imply changing the linking document

Standard Procedure for Software Update
(last updated: 2016-05-15)

1. Confirm change is in testing version [test version link]
2. Verify tests are green [current test status]
3. Notify team we're starting the update [group mailing list]
4. Start the update [update control panel]
5. Manually monitor for issues [key metrics dashboard]
6. Confirm rollout is 100% complete [rollout status panel]
7. Finalize the update [update control panel]
Auditable

Products have history

History is context ("Why?")

"Who" sometimes matters

The more automatic, the better
Example: Source Control

Every change records history

History is searchable (keyword and author)

Can record parallel histories (branches)

Need not be centralized (mercurial, git)

Storage is cheap

Good for documents as well as source code
Collaborative

Everyone who works on a resource should be able to work on the same resource

Solving this problem minimizes geography
Collaboration is not copies

Computers are very good at making copies; sharing takes more work

Synchronization

History

Real-time communication
Collaboration is shared state

Version control

Google docs and spreadsheets

Hangouts
Examples
Example: Google Drive Document Sharing

Public

Access control by document owner

Docs can be shared to small group, publicly, or domain-wide
Example: Google Drive Document Sharing

Searchable

Can search all docs you have access to (or all docs in your organization)

Searchability can be configured by doc owner
Example: Google Drive Document Sharing

Auditable

Docs have a history of edits

Spreadsheets can be set to notify you if they are changed
Example: Google Drive Document Sharing

Collaborative

All docs can be edited simultaneously

Changes are reflected in real time on all users' machines

Everyone edits the same copy
Example: GitHub

Public

Almost all source control repositories can be accessed

(private repositories are available as a for-pay feature)
Example: GitHub

Searchable

Repositories findable via keyword search

Within repository, source code is searchable by keyword

Consistent repository naming convention

user/repository-name
Example: GitHub

Auditable

Repository history tracked via git's algorithms

Github generates statistics for changes to repository
Example: GitHub

Collaborative

Issue tracker

Forking

"Pull request" model
Your Information Is Most Useful When It Is
Public
Searchable
Auditable
Collaborative
Thank You!

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(Backup slides)
Knowledge Management is Everyone's Business

"Google’s mission is to organize the world’s information and make it universally accessible and useful."

~Mission Statement