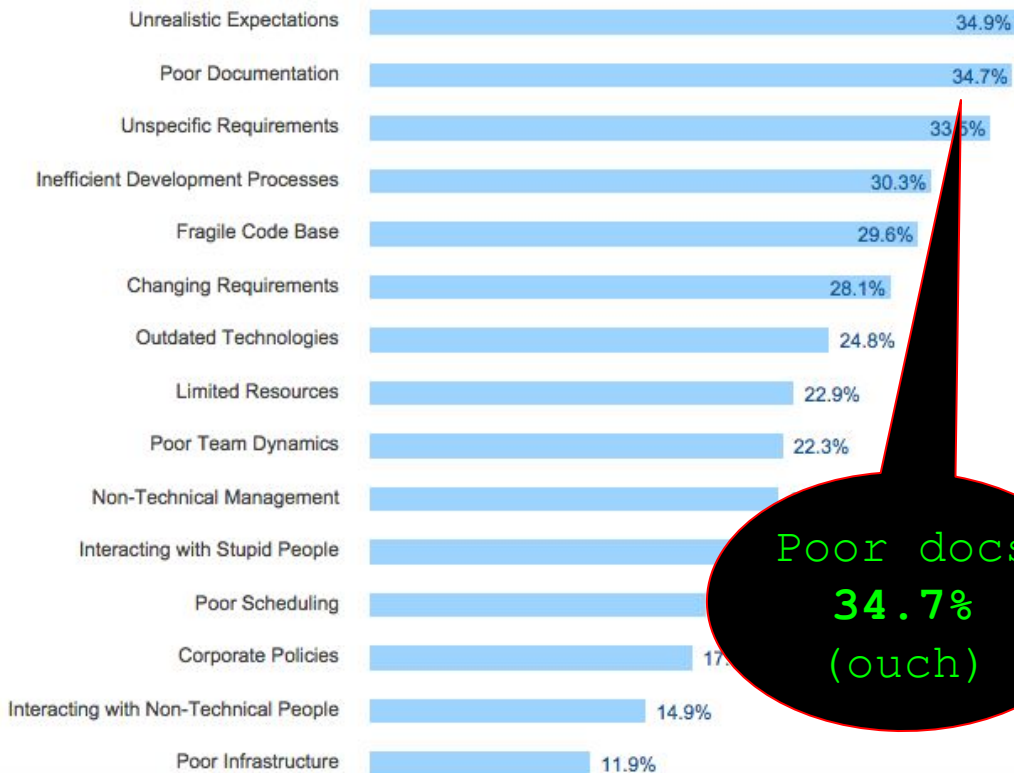


The Knowledge

Towards a culture of engineering
documentation

Riona MacNamara, Google
rionam@

VI. Challenges At Work



Poor docs
34.7%
(ouch)

Source: Stack Overflow
Developer Survey 2016



You cannot mix certain types of flights with certain other types of flights.

OK

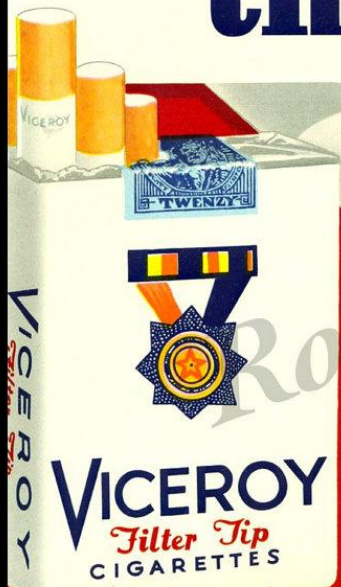


boredpanda.com



Viceroy's

FILTER
the Smoke!



As your Dentist,
I would recommend
VICEROYS

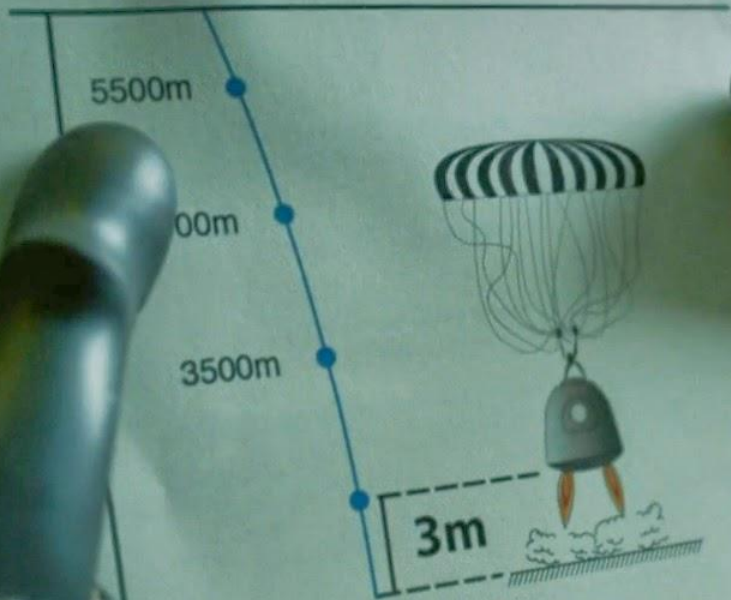


Bad documentation is bad

- Bad for velocity
- Bad for quality
- Bad for reliability



00000030



СПУСК НА ОСНОВНОМ
ОПЕРАЦИЯХ ПРЕДПОСАДКИ

Docs: Everybody's
problem, nobody's job

But culture is
not immutable

Software testing 2005 ...



Software testing today

A professionalized **discipline**
integrated into the software
development process

Good documentation is
good ...

... **and achievable**

Documentation, disrupted

How Google transformed its
internal documentation process

48%

Google engineers citing docs as #1
productivity issue (Googlegeist
2014)

SRE: 50%+ issues
cited problems
with docs

Previous efforts

- Fix the culture (bottom up)
- Fix the tooling (top down)

We were inflicting
help :- (

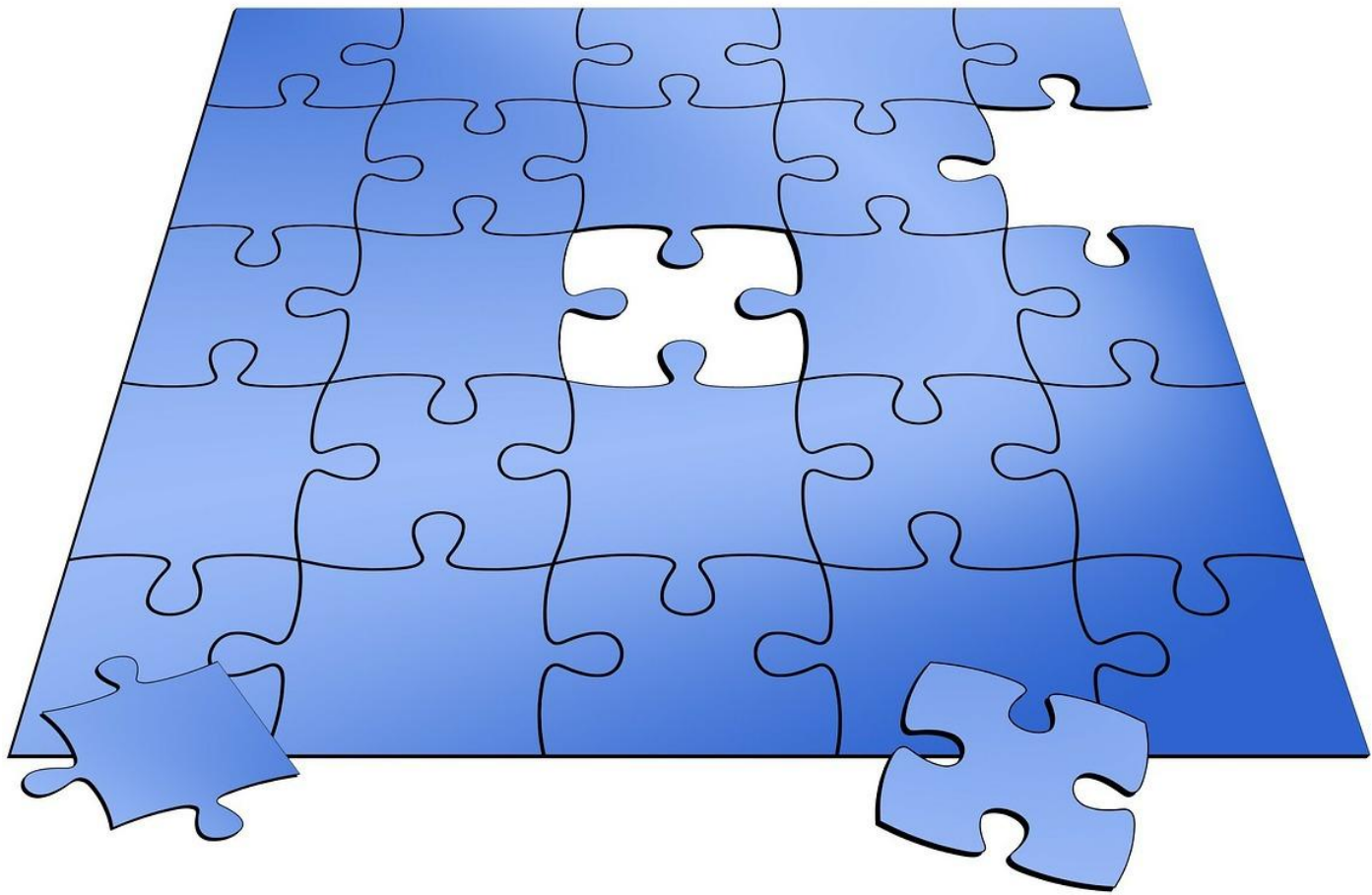
Time to *listen*.

The trouble with docs

- They "don't exist."
- They're "impossible to find."
- They're "*wrong*."

- “No **time**”
- “No **incentive**”

No doc **culture**



Fragmentation is bad

Multiple repositories:

- Hard to create
 - Context switching
 - ○ Horrible tooling
- Hard to maintain
 - No explicit connection to code
 - No clear ownership
- Hard to find

Documentation will
never be part of
engineering culture
until it is **integrated**
into the
codebase and **workflow**.

g3doc

Radically simple documentation

g3doc vision

Engineers **find, create,** and **maintain** docs using their regular **workflow** and developer **tools**

g3doc design

- Store Markdown source in google3 codebase
- Serve docs as webpages at a predictable URL:
 - Render Markdown to HTML
 - Then apply theme
 - Ship finished HTML to user
- Small / meaningful integrations

```
<link rel="stylesheet" type="text/css" href="minimal.css" />
<link href="//www.foo.google.com/style/prettify.css" rel="stylesheet">

<script>
  (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
    (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
    m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
  })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

  ga('create', 'UA-51581346-1', 'google.com');
  ga('send', 'pageview');

</script>
```

```
# Foo

## This is what foo does

* List item 1
* List item 2
* List item 3

## How long does Foo take?

* 30 minutes.
* Running all tests takes about 10 minutes

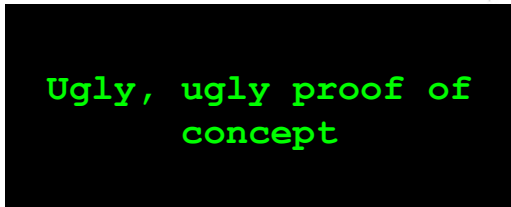
## For Users

### Status

* Supported and maintained by \[Foo SRE\](mailto:foo-sre@google.com)
* \[Monitoring dashboard\](http://dashboard.foo.com)

### Using Foo with Bar
```

Foo is used automatically by Bar:



Foo

This is what foo does

- List item 1
- List item 2
- List item 3

How long does Foo take?

- 30 minutes.
- Running all tests takes about 10 minutes

For Users Status

- Supported and maintained by [Foo SRE](#)
- [Monitoring dashboard](#)

Using Foo with Bar

Foo is used automatically by Bar:

```
bar build
bar test
```

Here's a sample command line

```
bar test --test_tricks=hello
```

Links

Simple source

dgl.md

22
23
24
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32
33
34
35
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51
52
53
54
55

```
From my client (`google/src/cloud/{{USERNAME}}/devguide/google3`):
```

```
$ mkdir storage/f1/g3doc/devguide
```

```
### Create any necessary subdirs
```

```
The F1 devguide has a "SQL Reference" subdir, so I created a directory for that.
```

```
$ mkdir storage/f1/g3doc/devguide/sql
```

```
Tip: Consider using a shorter name than that used in Sites. Shorter URLs are better for everybody.
```

```
## Convert file content to Markdown on your local machine
```

```
TODO(rionam): Update with alternative methods, or explanations, should this doc be made available to a wider audience.
```

```
1. Switch to the directory of your source devguide. For instance:
```

```
$ cd google/src/cloud/{{USERNAME}}/devguide/eng/doc/devguide/f1
```

```
2. Make a local target directory:
```

```
$ mkdir /tmp/f1
```

```
3. Copy only the files with an .shtml extension to your local machine:
```

```
rsync -a *.shtml /tmp/f1
```

```
4. Use Pandoc to convert from SHTML to Markdown.
```

```
find . -name "*.shtml" | while read i; do pandoc -f shtml -t markdown -s --headers "#f1" -o "${i%.shtml}.md"; done
```

Beautifully rendered

g3doc

[Home](#) [Get Started](#) [FAQ](#) [Team](#)

Migrating Developer Guide Library content

This doc outlines the steps necessary to migrate Developer Guide Library content to g3doc. The paths etc. are specific to the DGL, but the general steps should be useful for anybody migrating content from [//depot/eng/doc](#).

Note: This guide gives the location of a sample devguide (F1). You should replace the F1 directory name(s) with the name(s) of your own directories.

- [Create a google3 client](#)
- [Create the directory structure in your target google3 directory.](#)
 - [Create any necessary subdirs](#)
- [Convert file content to Markdown on your local machine](#)
- [Copy the original .shtml files to the new devguide location](#)
- [Replace the content of /g3doc/devguide/*.md with the converted content from your local machine](#)
- [Edit the metadata headers in each file.](#)
- [Redirect the original files](#)
- [Clean up your new Markdown files in google3/path/g3doc/devguide](#)
- [Create or update index.md](#)
- [Add navigation](#)
- [Update OWNERS](#)
- [Update METADATA](#)

Site Contents

- [Home](#)
 - [Where should docs live?](#)
- [How to use g3doc](#)
 - [Get started](#)
 - [README.md files](#)
 - [Use a theme](#)
 - [Add special content to pages](#)
 - [Migrate existing content](#)
 - [Moma search indexing](#)
 - [Ownership and approvals](#)
 - [Tools and integrations](#)
 - [Presubmit checks](#)
 - [Redirects](#)
 - [Troubleshooting](#)
- [Reference](#)
 - [g3doc concepts](#)
 - [g3doc style guide](#)
 - [Markdown reference](#)
 - [Markdown cheatsheet](#)

Richly linked

Convert to Markdown

g3doc can render HTML, but Markdown creates a much better experience for engineers who access your docs via Code Search or view them in Cider.

See below for specific guidelines on migrating from Sites, Drive, Wiki, and HTML.

From Sites

The `Sitesimporter` script by [who/cdeforeest](#) exports the contents of a specific site to a specified target location.

- Usage:

```
$ blaze run //corp/playbookserver/sitesimporter:sitesimporter
sites_url /full/path/to/target/directory
```

- Example:

```
$ g4d -f convert-x20-site
$ mkdir /tmp/x20
$ mkdir storage/x20/g3doc
$ blaze run //corp/playbookserver/sitesimporter -- \
  https://sites.google.com/a/google.com/x20 /tmp/x20
$ cp /tmp/x20/somefile.md storage/x20/g3doc/
```

All flags:

- [google3/corp/playbookserver/sitesimporter/sitesimporter.py](#)
- [google3/corp/playbookserver/sitesimporter/url2file.py](#)
- [google3/corp/playbookserver/sitesimporter/html2markdown.py](#)

Known issues

- Sitesimporter currently doesn't convert Sites tables to Markdown tables.
- See the [Sitesimporter hotlist](#) for a complete list of known issues.

- METADATA reference
- Included files
- Javascript
- Permissions
- JSLayout migration
- Team resources
 - g3doc team
 - File a bug
 - Feature requests
 - 20% opportunities
 - Update this site
 - Philosophy
 - g3doc for Perf
- Stats and metrics
 - Stats
 - README.md
- FAQ

Page Info

- Updated 2015-10-19
- [View source](#)
- [Edit this page](#)
- [Recent site activity](#)
- [File a docs bug](#)
- Served by g3doc

"This is the best thing ever.

Thank you!"

"Wow, this is **fantastic!**"

"This is **fantastic**.
So **excited** to
write docs!"

Shit got real.

Core principles

- Focus on the **engineer**
- **Separate presentation from content**
- Keep it **drop-dead simple**

Growth strategy

- **Don't inflict help**
- Form **alliances** with high-profile, influential engineers
- **Partner** with workflow teams to create small, meaningful integrations
- Release and iterate
- Create **buzz**

Culture and values

- **Open, transparent, and generous**
- Don't **lick the cookie**, pass the plate
- Opportunity for **impact**
- **Governance belongs to the contributors**

July-December 2014

- September: 18 projects
- October: 42
- November: 100
- December: 159

Goal for end Q1: 300

930

projects

Q1 2015

New features ...

- Sequence diagrams
- .DOT graphs
- Shortlinking (larry@, etc.)
- Syntax highlighting for code samples
- Auto Analytics support
- ...

Mathjax

Here's an expression: `\\(x = \{-b \pm \sqrt{b^2-4ac} \over 2a\}\\)`

Here's an expression:
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} .$$

Syntax highlighting

```
``go
package main

import "fmt"

func main() {
    fmt.Println("Hello, 世界")
}
````
```

```
package main
import "fmt"

func main() {
 fmt.Println("Hello, 世界")
}
```

# EngPlay - g3doc for SRE playbooks

- Supports Markdown
- Integrated with our Alert Manager
- Meets security requirements
- Completeness checked
- Predictable location for all playbooks

- "g3doc is officially better than anything non-g3doc now. Sequence diagrams!"
- "g3doc or it didn't happen."
- "I just opened g3doc now and remembered that it's REAL and I didn't DREAM IT UP."

"g3doc is so good. So good. The intersection of 'brain-dead easy' with 'incredibly useful and well-integrated with all our tools' makes it just insane."

1,796

projects

Q2 2015

Shit really got real.

A man with a beard and glasses is speaking on a stage. The background is a vibrant green wall with a pattern of vertical lines and small yellow flowers. The man is wearing a dark blue shirt and has a microphone clipped to it. He is looking upwards and to the right.

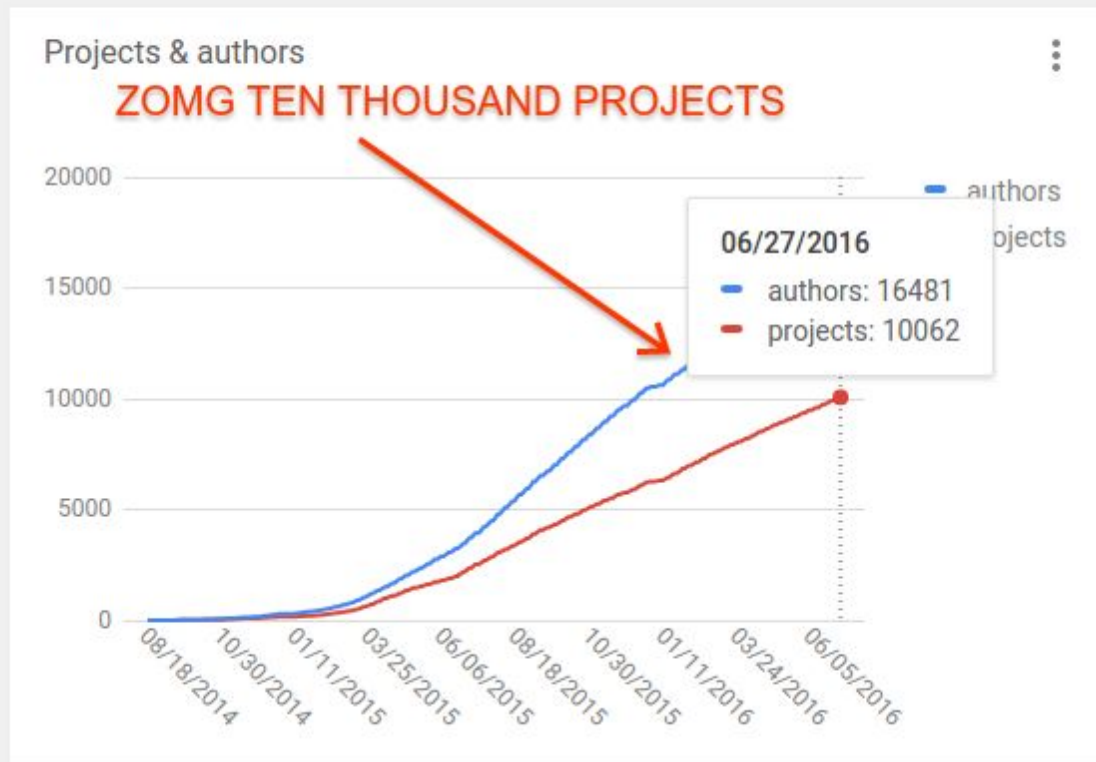
move to g3doc plz k  
thx bai



# g3doc stats

[go/g3doc-stats](https://go/g3doc-stats)

See [go/g3doc-langstats](https://go/g3doc-langstats) for additional statistics about Markdown usage in g3doc.



g3doc today

# Adoption

10,362

projects

17K

authors

# Maintenance

30%

doc changelists contain code

200K+ doc changelists  
200K files  
3 CLs / file / month



# Usage

3.9M

30-day page views

1.6M

30-day sessions

**bye , wiki !**

# Team

- Fully staffed engineering team
- Part of Developer Infrastructure core toolset
- 20%: "By engineers for engineers"

**#bestteam**

We **believe** these  
things are **true**

**First tooling, then culture**



Be **audacious** but not **reckless**

**Release** and **iterate**

**Predictable, standardized  
location for docs**

Partner

Focus on the **engineer**

Focus on the **engineer**