

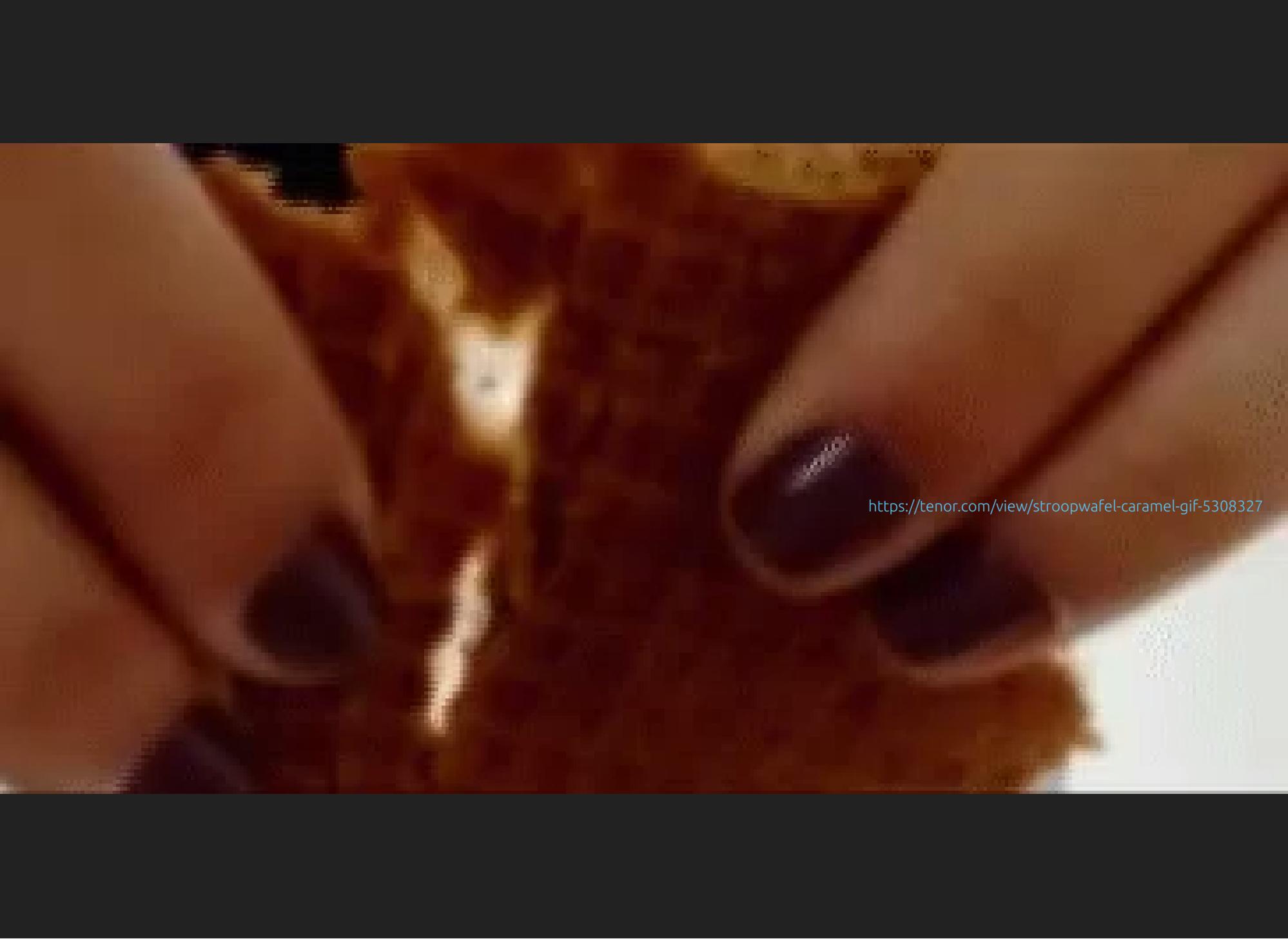
Will Git Be Around Forever?

A List Of Possible Successors

Hanno Embregts



@hannotify



<https://tenor.com/view/stroopwafel-caramel-gif-5308327>

Teaching a course on Git

<https://pxhere.com/en/photo/652221>

prehistory

scm classic times

middle ages

the Renaissance

1982

1990

1992

1994

1995

2000

2005

2010

rcs

cvs

perforce

svn

bitkeeper

bazaar

git

clearcase

accurev

darcs

hg

pvcs

vss

welcome to hell

<http://blog.plasticscm.com/2010/11/version-control-timeline.html>

dvcs age

embrace branching,
merging and
distributed...

laggards

tfs



BitMover announces accelerated commercial development strategy and migration plan for Open Source users



SAN FRANCISCO, April 5th 2005 /PRNewswire/ -- BitMover, the technology leader of enterprise development tools, announced today that it will focus exclusively on the development of the commercial version of their industry leading configuration management system, BitKeeper.

"We've experienced explosive growth over the last two years." said Bob Burres, VP of Sales. "We're doubling year over year and our commercial users exceed those using BitKeeper on Open Source projects. Focusing our energy on our cutting edge commercial products will ensure we maintain our competitive advantage and allow us to continue delivering world class development tools."

"BitKeeper is already one of the most advanced SCM products on the market," said Holt Mebane, an architect in HP's Imaging and Personal Systems Group. "BitKeeper has an exciting roadmap, and we recognize that a BitKeeper product with these features will be invaluable to our firmware design efforts."

The commercial version of BitKeeper has an exciting roadmap which includes:

- Integration with major IDEs such as Eclipse
- Revamped GUI tools conforming to Windows standards
- Defect tracking database with a powerful integrated scripting language
- Peer review database system
- Cherry picking across branches
- Scaling to 1,000,000 changesets in one repository
- Scaling to an unlimited number of files
- Module (subtree) support
- Enhanced binary management
- Better license management and control
- Management reporting tools

<http://web.archive.org/web/20050408062838/http://www.bitkeeper.com/press/2005-04-05.html>

BitMover looks forward to implementing our extensive roadmap and delivering advanced SCM technology to a wider market.

As part of this focus, BitMover has replaced the free version of BitKeeper with the recently released open source BitKeeper client. Those developers who desire additional functionality may choose to migrate to the more powerful commercial version of BitKeeper.

Major projects hosted at www.bkbits.net, such as the Linux kernel, will continue to be hosted and updated there.

Our relationship with the Open Source community has been evolving and many of the key developers have already migrated to the commercial version of BitKeeper. Those developers will continue to enjoy the full features of BitKeeper.

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https://upload.wikimedia.org/wikipedia/commons/thumb/3/31/Bill_Gates_2004.jpg/1280px-Bill_Gates_2004.jpg

A photograph of Bill Gates speaking at a podium. He is wearing glasses, a dark suit, a white shirt, and a red tie. He is gesturing with his right hand while speaking. In the background, there is a large screen displaying a blue gradient and a Dell computer monitor on the right side.

"640K ought to be enough for anybody."

https://upload.wikimedia.org/wikipedia/commons/thumb/3/31/Bill_Gates_2004.jpg/1280px-Bill_Gates_2004.jpg

Change is the only constant.

Photo credit: Ryan McGuire

Heraclitus



Why did Git become so popular?

Main features of Git

- Distributed
- Free & open-source
- Fast
- Optimized for
branching

Some surprising facts on Git

<https://www.infoworld.com/article/2669670/after-controversy-torvalds-begins-work-on-git-.html>

Some surprising facts on Git

"I'm an egotistical bastard, so I name all my projects after myself. First Linux, now git."

<https://www.infoworld.com/article/2669670/after-controversy-torvalds-begins-work-on-git-.html>

WWCVSND?

If in doubt, make the exact opposite decision.

<https://pxhere.com/en/photo/704019>

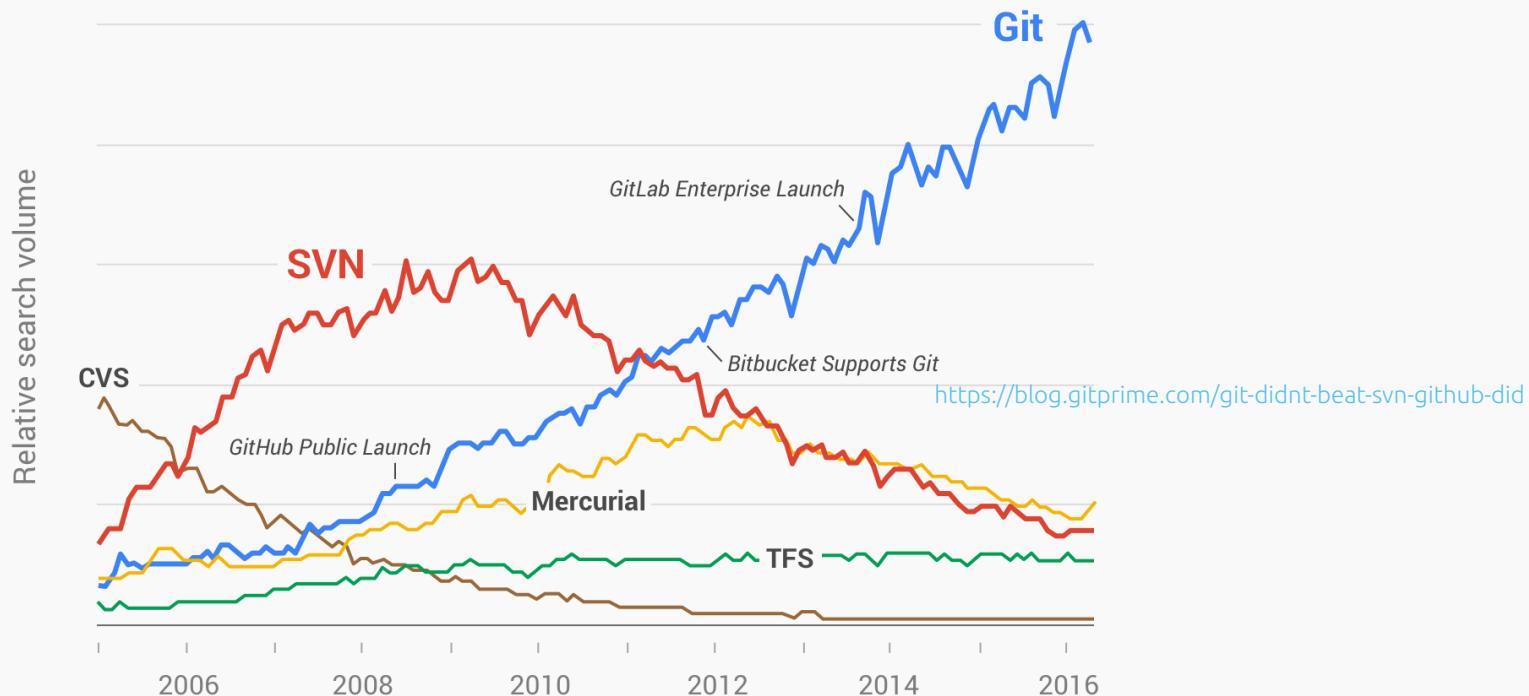
Killer features.

prediction variable #1

<https://www.pexels.com/photo/photo-displays-person-holding-ball-with-reflection-of-horizon-940880>

How Did SVN Manage to Lose?

Version control interest over time



Hosting platform support.

prediction variable #2

<https://www.pexels.com/photo/photo-displays-person-holding-ball-with-reflection-of-horizon-940880>

Open-source community support.

prediction variable #3

<https://www.pexels.com/photo/photo-displays-person-holding-ball-with-reflection-of-horizon-940880>

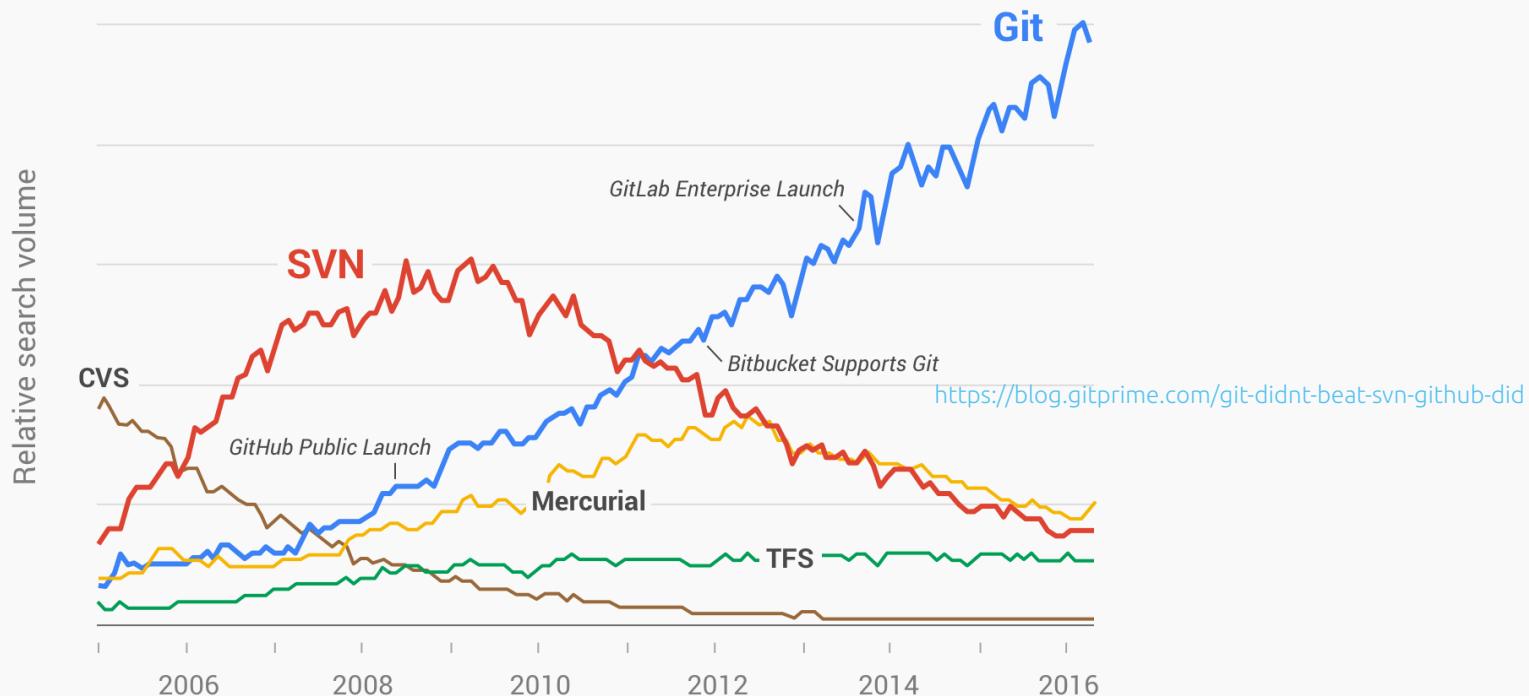
THERE ARE TWO TYPES OF PEOPLE

<https://bingeprints.com/products/there-are-two-types-of-people-those-who-can-extrapolate-from-incomplete-data-mug-funny-statistics-math-coffee-cup-1>

- ① THOSE WHO CAN EXTRAPOLATE FROM INCOMPLETE DATA

How Did SVN Manage to Lose?

Version control interest over time



First Prediction

2009

Subversion 43%

Git 19%

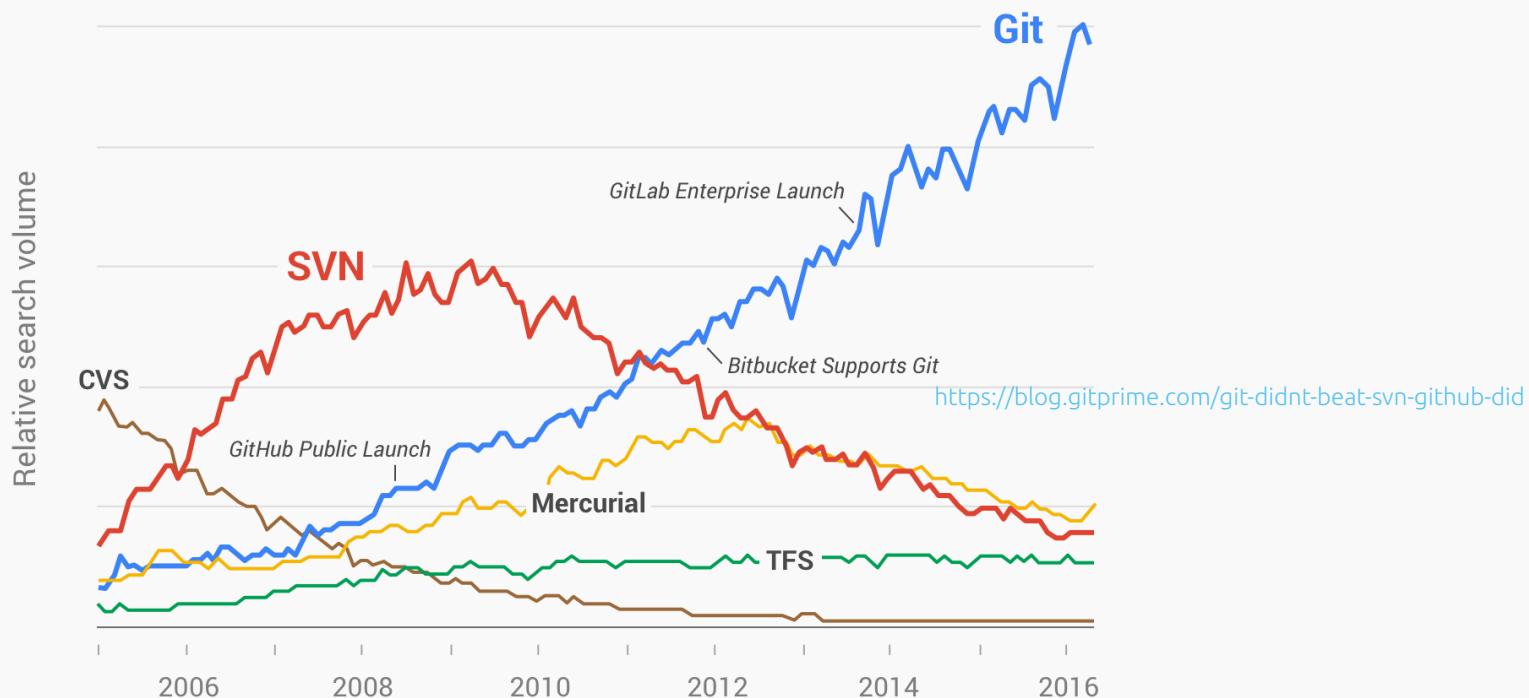
Mercurial 16%

TFS 6%

CVS 5%

How Did SVN Manage to Lose?

Version control interest over time

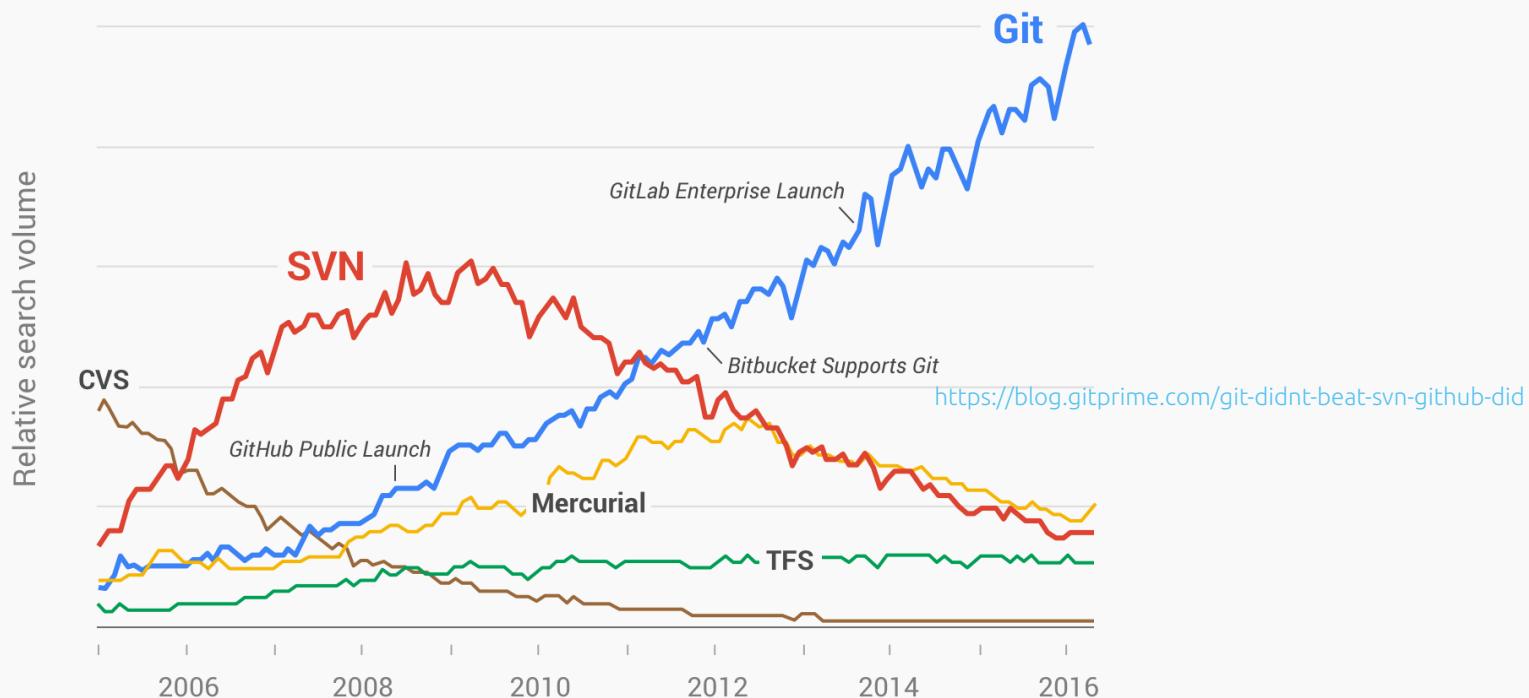


First Prediction

	2009	2019
Subversion	43%	8%
Git	19%	73%
Mercurial	16%	12%
TFS	6%	7%
CVS	5%	<1%

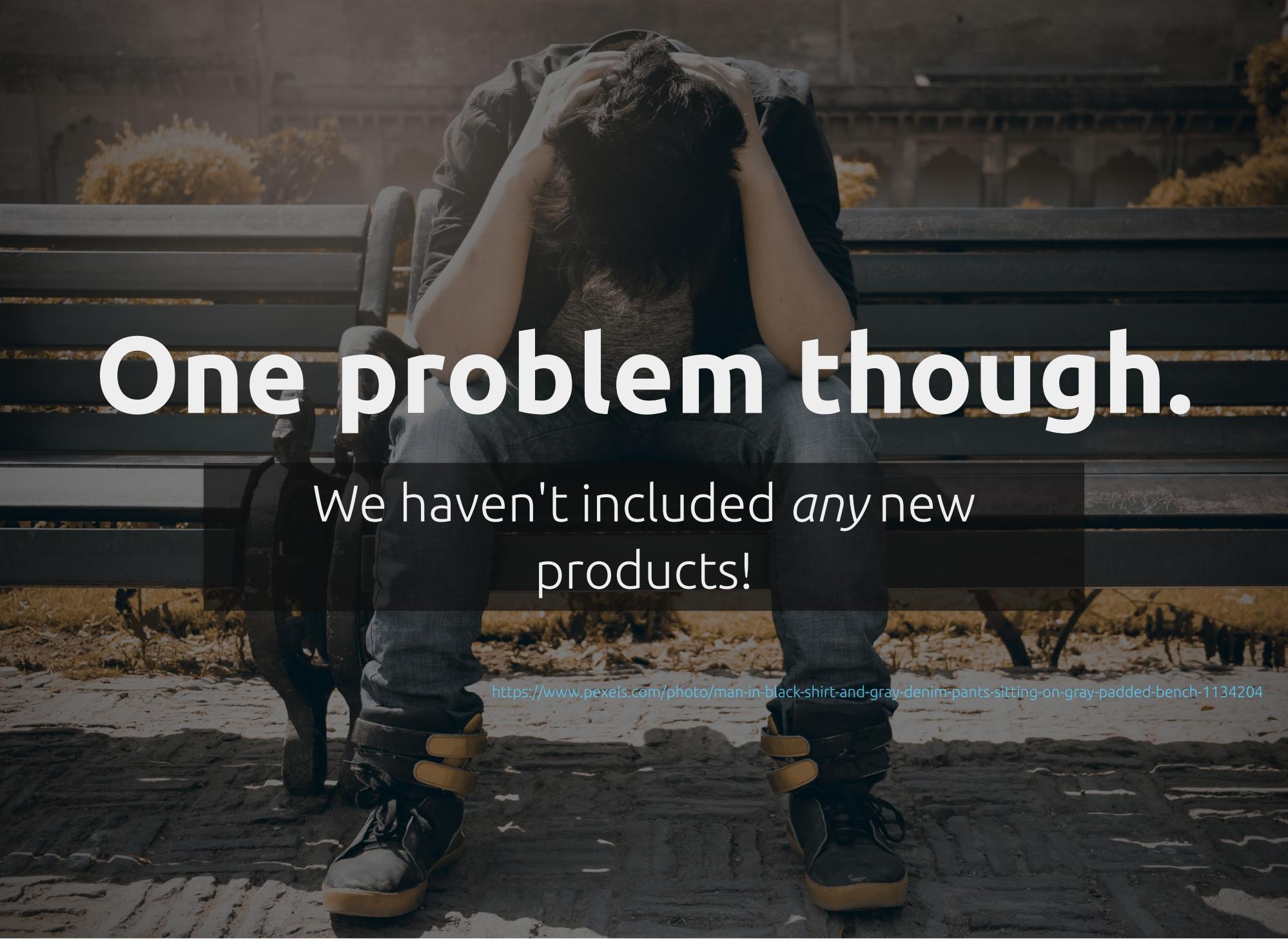
How Did SVN Manage to Lose?

Version control interest over time



First Prediction

	2009	2019	2029
Subversion	43%	8%	4%
Git	19%	73%	80%
Mercurial	16%	12%	9%
TFS	6%	7%	7%
CVS	5%	<1%	<1%

A photograph of a man sitting on a grey wooden bench outdoors. He is wearing a black t-shirt, blue jeans, and brown leather shoes with tan straps. His head is buried in his hands, which are clasped behind his head, suggesting distress or exhaustion. The background shows a blurred urban environment with a bridge and some bushes.

One problem though.

We haven't included *any* new products!

<https://www.pexels.com/photo/man-in-black-shirt-and-gray-denim-pants-sitting-on-gray-padded-bench-1134204>

The Browser Wars

<https://pxhere.com/en/photo/652221>



Marktaandeel browsers (januari 2005):

- | | |
|------------------------|--------|
| 1. Microsoft IE 6.0 | 80.95% |
| 2. Mozilla Firefox 1.0 | 4.58% |
| 3. Microsoft IE 5.0 | 4.18% |
| 4. Microsoft IE 5.5 | 3.66% |
| 5. Mozilla 1.x | 2.77% |
| 6. Opera 7.x | 1.29% |

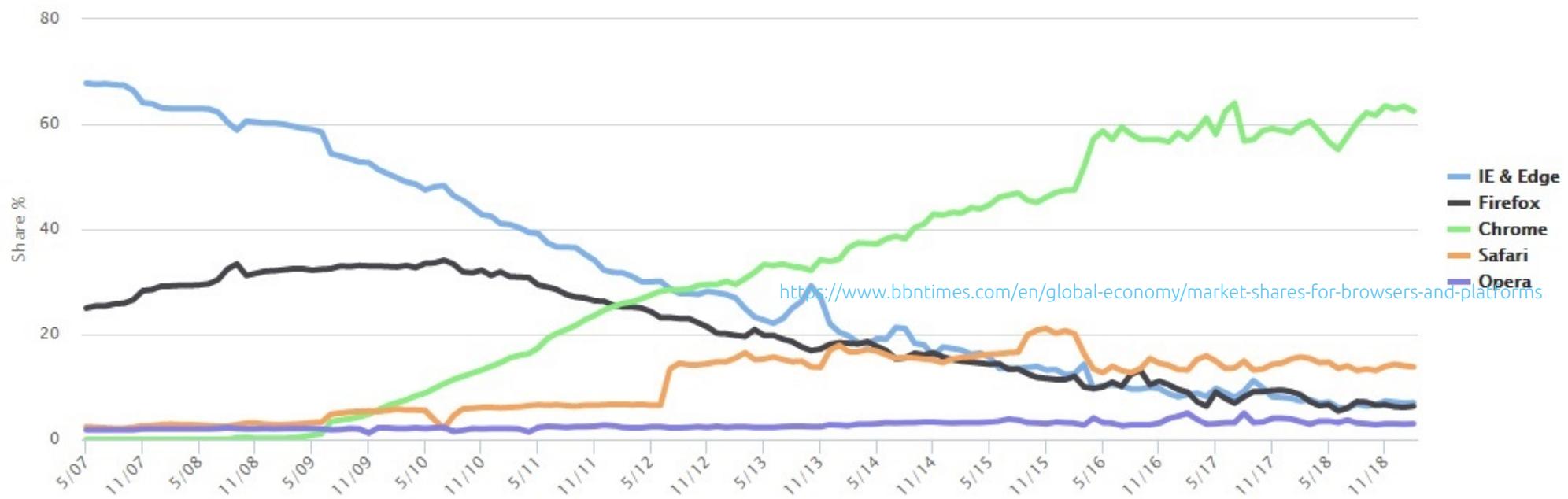
In ten years time...

1. ...Internet Explorer would be surpassed as the top browser family;
2. ...Mozilla Firefox would surpass Internet Explorer;
3. ...Mozilla Firefox would be the top browser.

In ten years time...

1. ...Internet Explorer would be surpassed as the top browser family;
2. ...Mozilla Firefox would surpass Internet Explorer;
3. ~~...Mozilla Firefox would be the top browser.~~

Browser Family Monthly Usage Share





<https://tenor.com/view/your-right-right-point-gif-9467383>

The disadvantage of the dominant product

You will get a lot of attention.

<https://www.pexels.com/photo/battle-black-blur-board-game-260024>

The disadvantage of the dominant product

prediction variable

<https://www.pexels.com/photo/photo-displays-person-holding-ball-with-reflection-of-horizon-940880>

Four New(er) Kids On The Block

A photograph showing four different USB flash drives clustered together. From left to right: a SanDisk brand drive with a red and gold case; an EMTEC drive with a black case; a Transcend drive with a black case and 'Transcend' logo; and a plain gold-colored drive. They are resting on a dark, woven bamboo or rattan mat.

<https://pxhere.com/en/photo/652221>

Four new(er) kinds on the block

- Fossil (2006)
- Plastic (2006)
- Veracity
(2011)
- Pijul (2015)

Veracity (2011)

- Distributed version control
- Issue tracking and wiki, also distributed

veracity

But

Veracity is not going to be 'the Git killer'

- Development status: web site appears unmaintained; latest release March 25, 2013
- Hosting platform www.onveracity.com hasn't been online since February 4, 2015

Plastic

- Fast branching
- Merge previews
- Both central and distributed
- Comes with **a lot** of GUI stuff



Focus on artists and designers

- 'Plastic Gluon' is a version control component meant for artists and designers
- Image diffing
- References on their website are exclusively from game studios

But

Plastic is not going to be 'the Git killer'

- it's not open-source software
- Git users are not changing their VCS just for some
eye candy

Fossil

<https://pxhere.com/en/photo/652221>

Features that Fossil promises

- **distributed** version control
- **integrated bug tracking**, wiki, forum and technotes
- built-in **web interface**
- **autosync** mode
- show **descendants** of a check-in
- supports operations on multiple repositories (`fossil all`)

Quick facts

- Written in C and SQL
- Is the VCS of choice for the SQLite project
- 'Github in a box'
- Free code hosting at:
 - Chisel - <http://chiselapp.com/>
 - SourceForge -
<http://fossilrepos.sourceforge.net>

Uses a relational database

- a repository is stored in a single SQLite database file
- contains relations between check-ins to be able to produce both ancestors and descendants of a check-in

'Github in a box'

- repository UI (`fossil ui`)
- wiki, ticketing & bug tracking
- embedded documentation
- technical notes
- forum

Quick demo

- Up and running
- Using the web interface (`fossil ui`)
- Retrieving descendants of a checkin
- Resolving conflicts

The Bad

- Dealing with large files
- Dealing with large commits

<https://www.omiyagames.com/blog/2014/02/15/farewell-fossil-version-control>

Fossil for Git users

<https://www.fossil-scm.org/home/doc/trunk/www/fossil-v-git.wiki>

Pijul

<https://pxhere.com/en/photo/652221>

pi • jul

or *crotophaga sulcirostris*, a bird
known to do collaborative nest
building.

[https://commons.wikimedia.org/wiki/File:Museo_de_la_Naturaleza_de_Cantabria_\(208\).jpg](https://commons.wikimedia.org/wiki/File:Museo_de_la_Naturaleza_de_Cantabria_(208).jpg)

8A

Pijul, garrapatero pijuy *Crotophaga sulcirostris* Texas - Chile
Pijul, garrapatero pijuy *Crotophaga sulcirostris* Texas - Chile

Quiscal o zanate mexicano *Quiscalus mexicanus*
EEUU - Perú

Features that Pijul promises

- **distributed** version control
- **simple**, because of its basis on a *sound theory of patches*
- **fast**, because it aims to fix the Darcs performance issues
- **interactive** recording

<https://www.pijul.com>

Quick facts

- written in Rust
- *bootstrapped* since April 2017
- free code hosting at
<https://nest.pijul.com>

Patch-oriented design

- A patch is an intuitive atomic unit of work.
- It focuses on *changes*, instead of *differences between snapshots* (i.e. Git commits).
- Applying or unapplying a patch *doesn't change* its identity.
- The end result of applying several patches is always the same, regardless of the order in which they were applied.
- Pijul keeps track of 'dependent patches'
- No merges or rebases; applying a patch is like `git cherry-pick`.

Quick demo

- Up and running
- Recording patches
- Branches
- Resolving Conflicts
- Nest demo -

https://nest.pijul.com/pijul_org/pijul

The Bad

- Usability needs to improve

<https://mivehind.net/2017/04/09/pijul-first-thoughts>

Pijul for Git users

<https://nest.pijul.com/tae/pijul-for-git-users>

Predictions

<https://pxhere.com/en/photo/652221>

Prediction variables

- Killer features.
- Hosting platform support.
- Open-source community support.
- The disadvantage of the dominant product.

	Git	Hg	TFS	Fossil	Pijul
Features	-1	-1	-1	+1	+2

	Git	Hg	TFS	Fossil	Pijul
Features	-1	-1	-1	+1	+2
Hosting	+2	+1	-1	0	0

	Git	Hg	TFS	Fossil	Pijul
Features	-1	-1	-1	+1	+2
Hosting	+2	+1	-1	0	0
Open-source	+2	+2	-2	-1	+1

	Git	Hg	TFS	Fossil	Pijul
Features	-1	-1	-1	+1	+2
Hosting	+2	+1	-1	0	0
Open-source	+2	+2	-2	-1	+1
Dominant	-2	-1	0	0	0

	Git	Hg	TFS	Fossil	Pijul
Features	-1	-1	-1	+1	+2
Hosting	+2	+1	-1	0	0
Open-source	+2	+2	-2	-1	+1
Dominant	-2	-1	0	0	0
	+1	+1	-4	0	+3

2029

Git 80%

Mercurial 9%

TFS 7%

Subversion 4%

CVS <1%

2029 **2029**

Git	80%	77%
Mercurial	9%	8%
Pijul		5%
TFS	7%	4%
Subversion	4%	4%
Fossil		2%
CVS	<1%	<1 %

Further reading

<https://www.pexels.com/photo/white-teddy-bear-reading-book-33196/>

Further reading

- "Beyond Git" (by Paweł Świątkowski)
<http://katafrakt.me/2017/05/27/beyond-git/>
- "Merging, patches and Pijul" (by Joe Neeman)
<https://jneem.github.io/pijul/>
- "The Pijul Manual"
<https://pijul.org/manual/introduction.html>



Any questions?

<https://www.pexels.com/photo/monopoly-car-piece-1634213/>

Thank you! 😊



FINAL:



<https://hannotify.github.io>



@hannotify



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