



What is possible with the Google Drive SDK

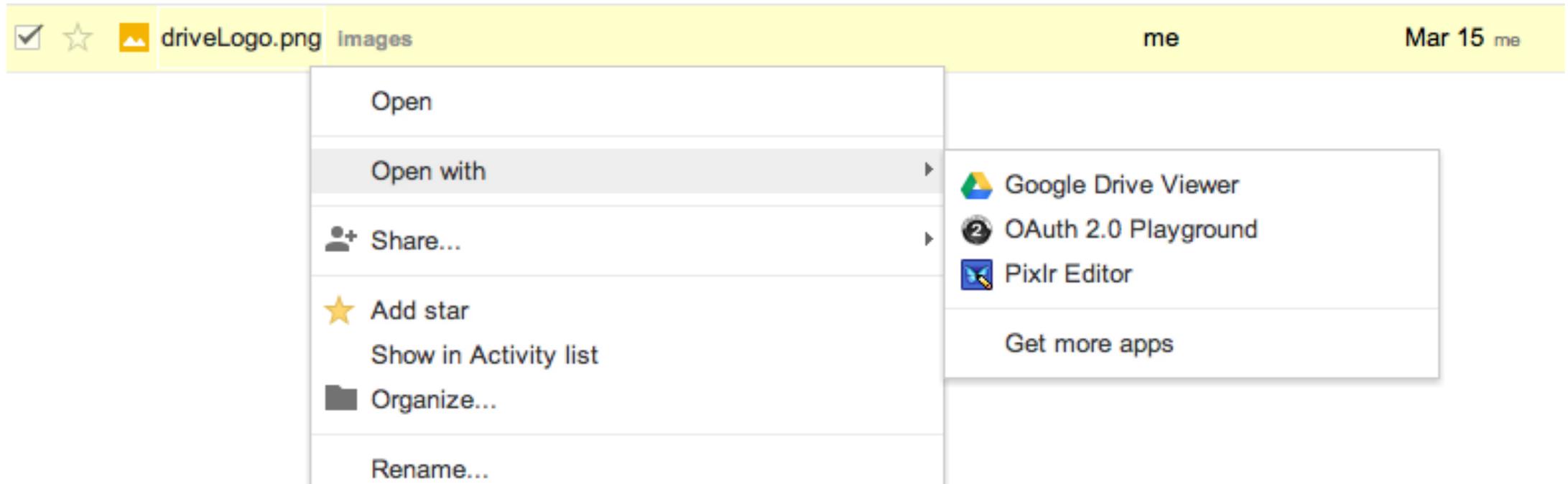
Nicolas Garnier
Developer Advocate

Google Drive & the Google Drive SDK

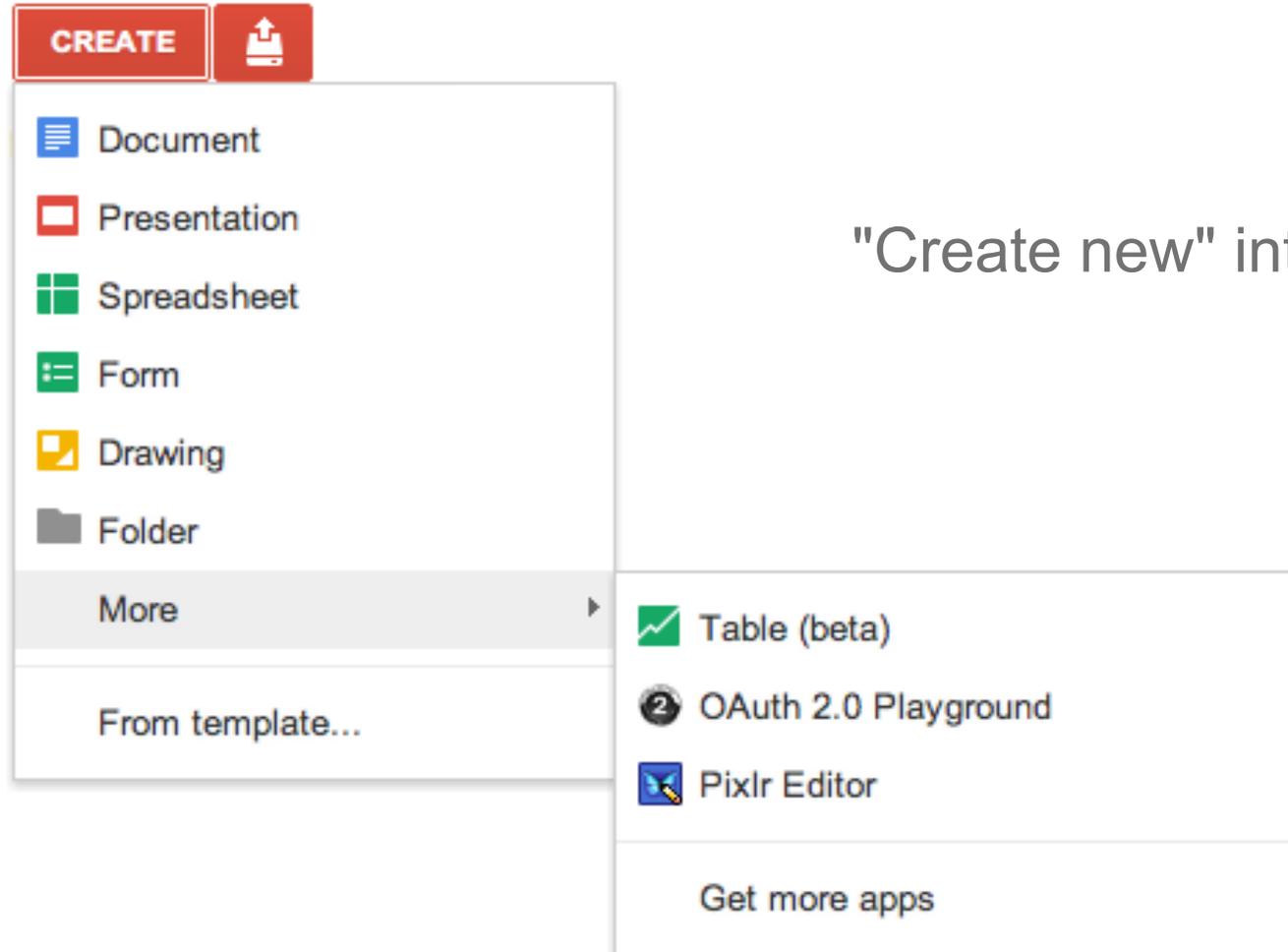


Google Drive Web UI integration

"Open with" integration



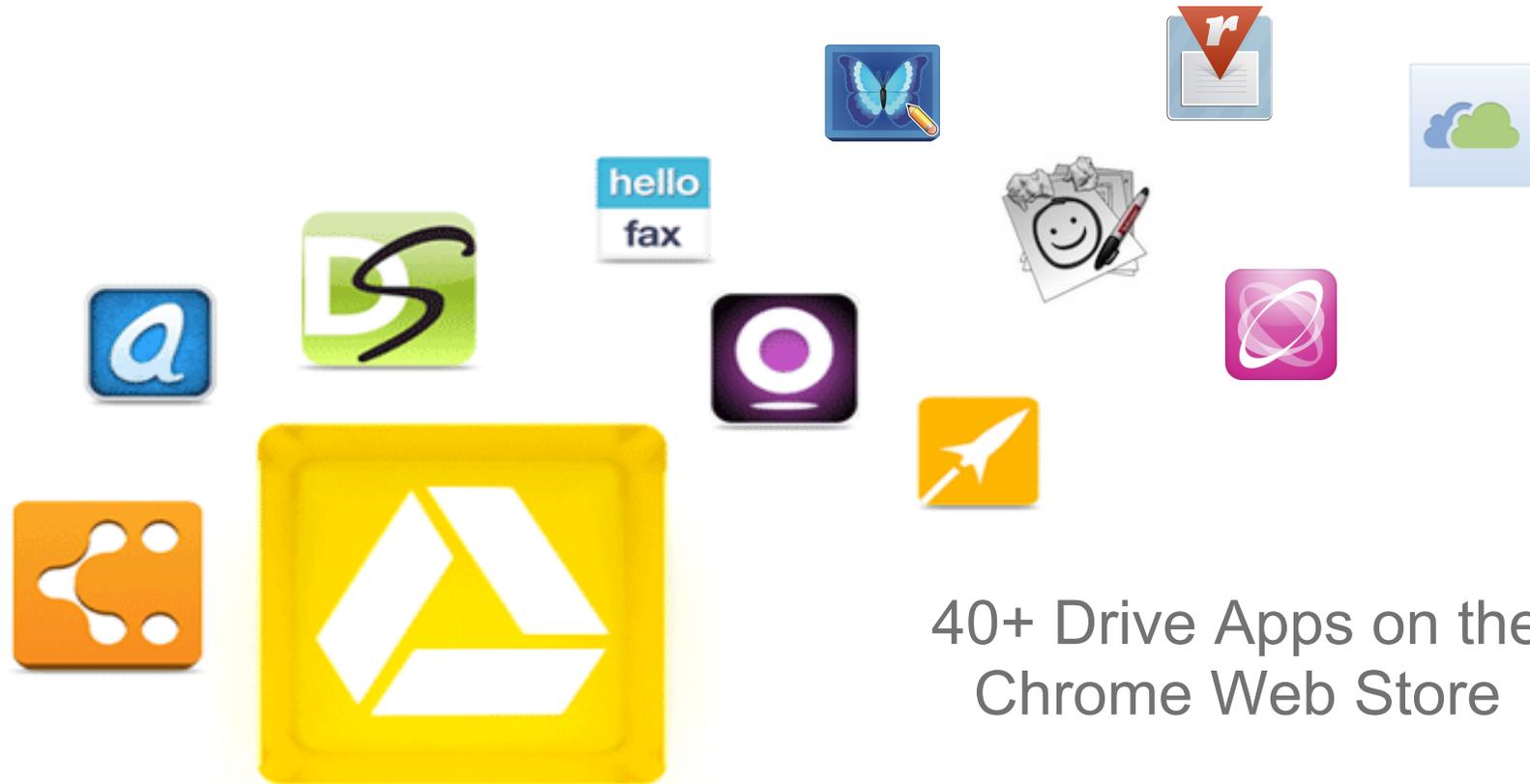
Google Drive Web UI integration



"Create new" integration



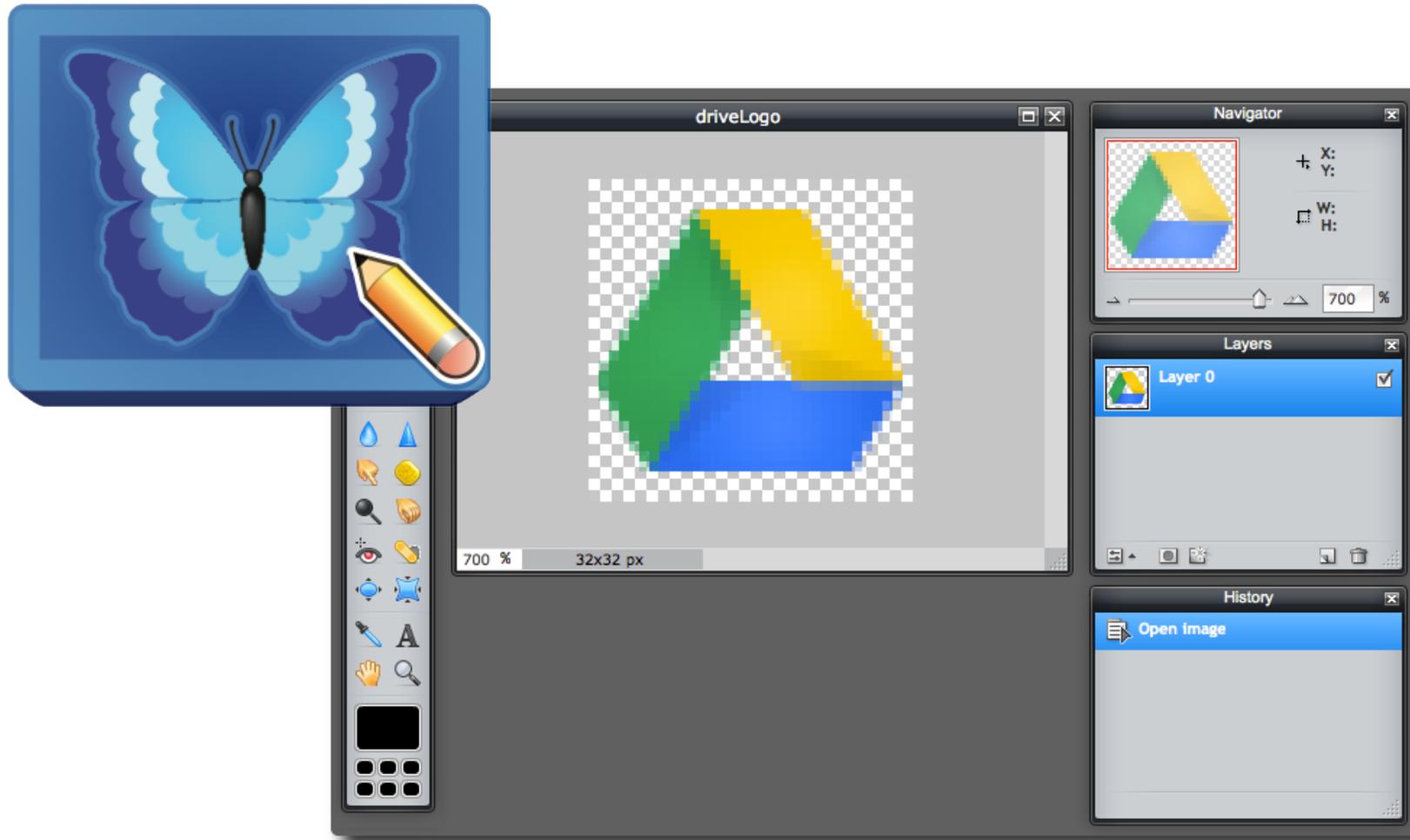
Lots of Drive apps



40+ Drive Apps on the
Chrome Web Store



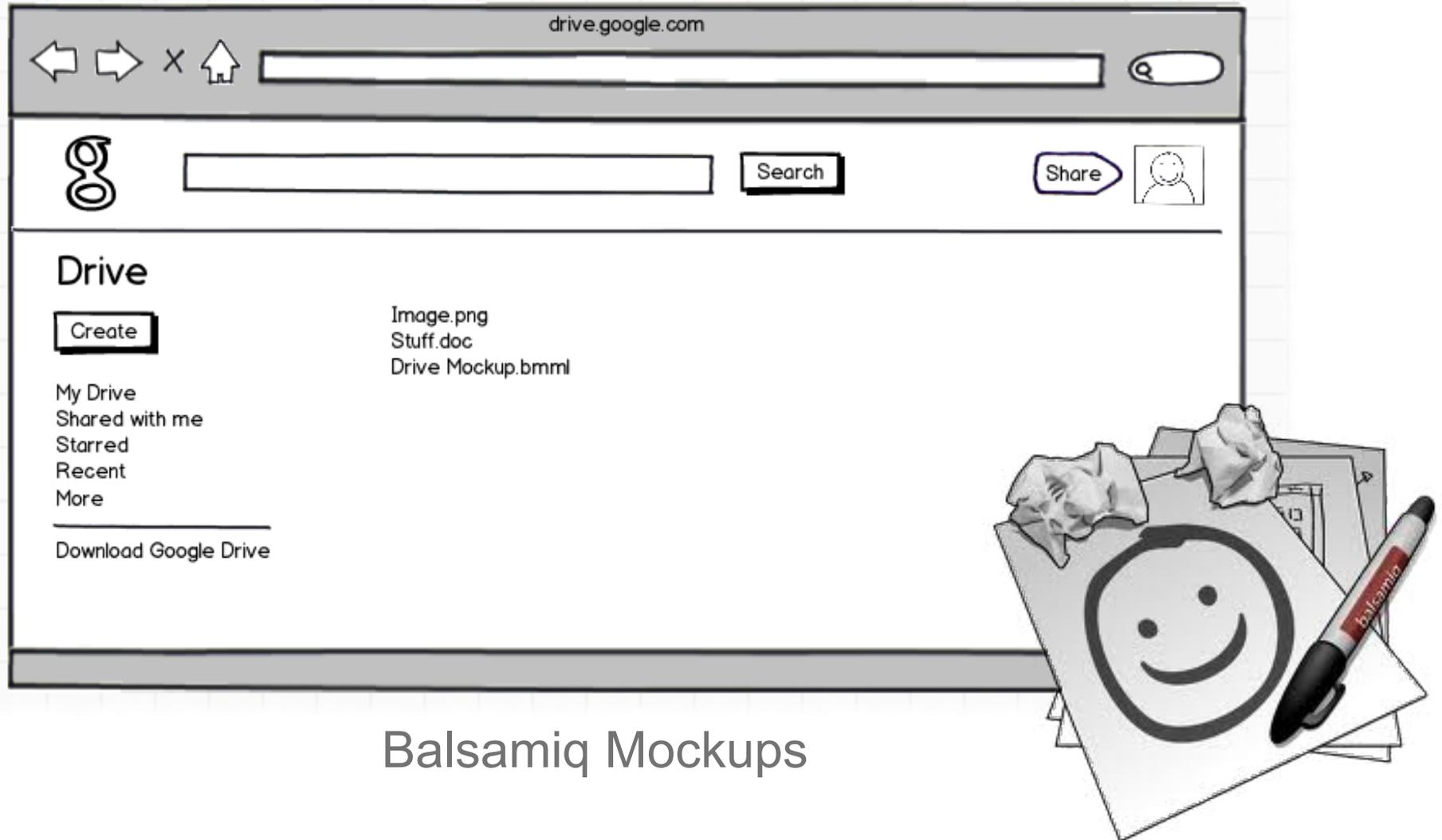
What you can do with Drive apps



Pixlr Editor



What you can do with Drive apps



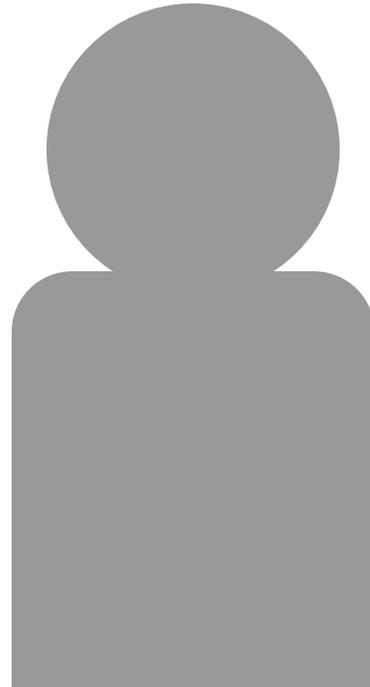
Balsamiq Mockups



What you can do with Drive apps



Who is here?





MindMeister

Till Vollmer, CEO and Founder

Product MindMeister

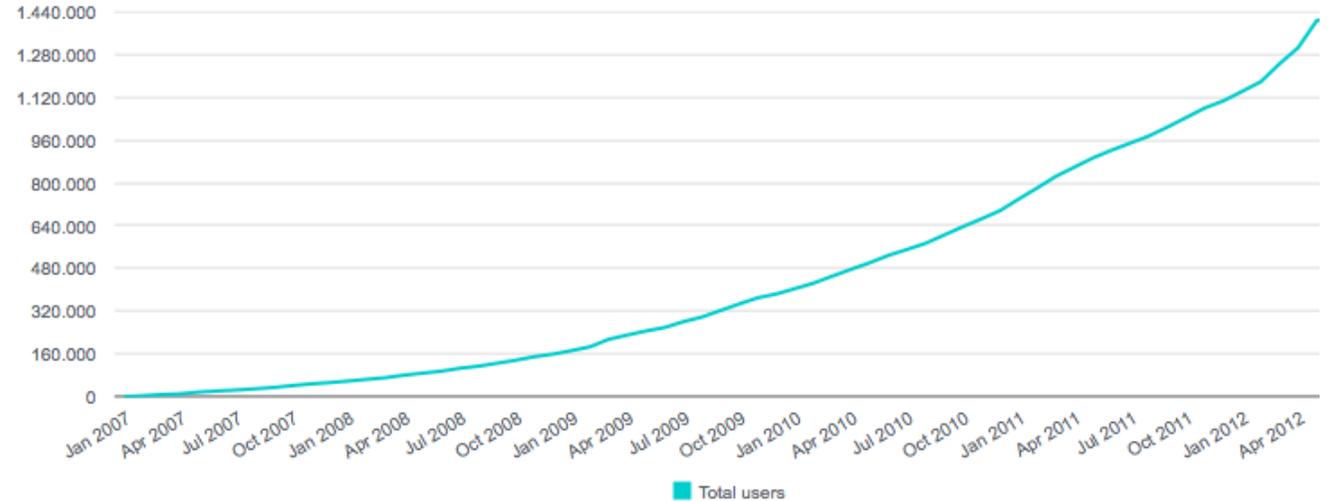
Collaborative web-based mind mapping

- Using modern web technologies
- Use Cases
 - Innovation Management
 - Project Planning
 - Meeting Efficiency
 - Brainstorming
 - Visual Thinking
- Technical: Ruby on Rails, Apache, MySQL



Company MeisterLabs/MindMeister

- Established 2006
- Product launched in 2007
- 1.4 Mio registered users
- Profitable
- Freemium Model

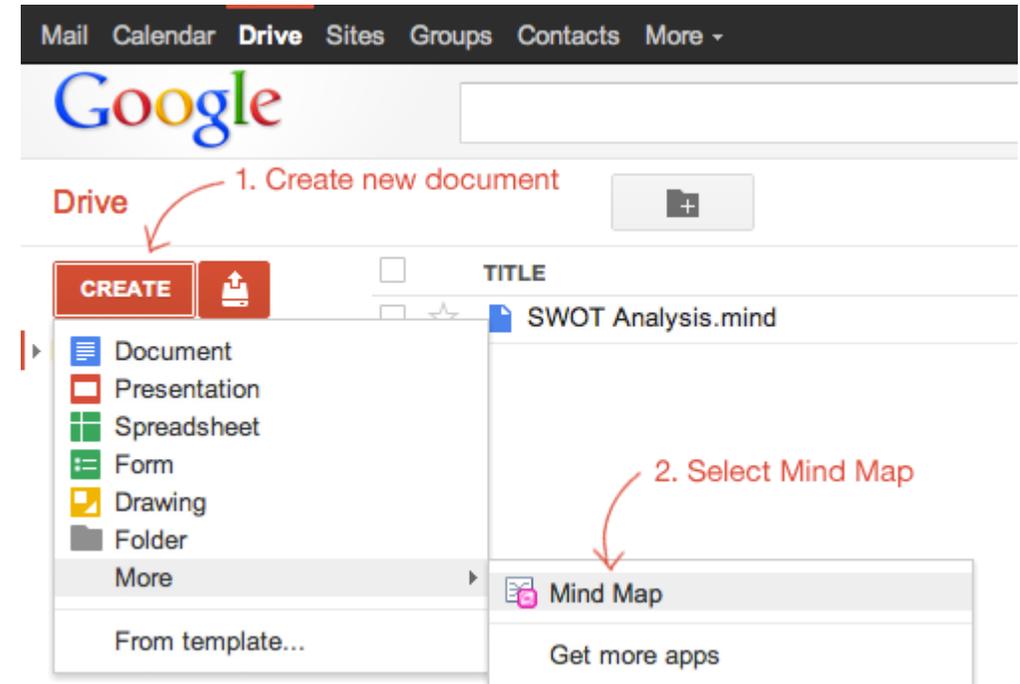


Google Chrome Web Store, Google Drive and Google Apps Integrations



Integration Goals

- Create new mind map
- Edit mind maps
- Import mind maps to Drive
- Indexing of mind mapping content
- Export mind maps to Drive
- Adding attachments from Drive
- Realtime Collaboration
- Sync mind maps with Drive
- Backup mind maps to Drive
- Invite Google contacts



Google Drive API used

Google provides a Ruby binding

- OAuth 2.0
- OpenID Connect
- <https://www.googleapis.com/auth/drive.file> (Drive)
- <https://www.google.com/m8/feeds/> (Contacts)
- <https://www.googleapis.com/auth/userinfo.profile> (User information)
- <https://www.googleapis.com/auth/userinfo.email> (User email)
- Picker API



Demo

DEMO





Thank you



Cloud9 IDE

Rik Arends, CTO and Founder



What is Cloud9 IDE?

- Complete IDE in the cloud
- Collaborative editing
- Run Python, Ruby, PHP, and debug Node.js. Even compile C/C++!
- Code completion for JavaScript
- Every workspace is your own dev box in the cloud

The screenshot displays the Cloud9 IDE interface. The main editor shows JavaScript code for a module that uses UglifyJS to minify code. A pink highlight is visible on line 20. On the right side, there is a 'Members' panel showing a list of users: Me, Mike de Boer, Daniela Gavidia, and Rik Arends. Below that is a 'Group Chat' panel with messages from 'YOU', 'DANIELA GAVIDIA', and 'MIKE DE BOER'. The chat messages include 'Let me show you what we did.', 'Hello there!', and 'Ready to see what I did?'. A text input field at the bottom of the chat contains the text 'Absolutely! Can't wait!'.

Collaborative editing in your workspace



Your workspace online

- Own hard drive and memory capacity
- Teams avoid configuration differences and software management by being on the same OS and software stack (linux)
- Terminal tied directly to the box
- workspace URL = Shareable collaboration URL

```
Welcome to Cloud 9 IDE
javruben@ace:~/3$ ls
build/  demo/  editor-build.html  index.html  LICENSE  package.json  support/  tool/
build.js  doc/  editor.html  lib/  npm-debug.log  Readme.md  test.js
javruben@ace:~/3$ cat Readme.md
ACE (Ajax.org Code Editor)

ACE is a standalone code editor written in JavaScript. It can be easily embedded in any web page and JavaScript application. It is currently used as the editor component of the [Cloud9 IDE](http://cloud9ide.com).

Checkout the [demo](http://ajaxorg.github.com/ace/editor-build.html)!
javruben@ace:~/3$ npm install coffee-script
npm GET https://registry.npmjs.org/coffee-script
npm GET https://registry.npmjs.org/coffee-script
npm GET https://registry.npmjs.org/coffee-script/-/coffee-script-1.3.3.tgz
npm GET https://registry.npmjs.org/coffee-script/-/coffee-script-1.3.3.tgz
coffee-script@1.3.3 ./node_modules/coffee-script
javruben@ace:~/3$
```

Terminal connected directly to the workspace



Cloud9 is powered by Node.js



Node.js is a platform for building fast, scalable network applications.



**switch
inputs**



Thank you

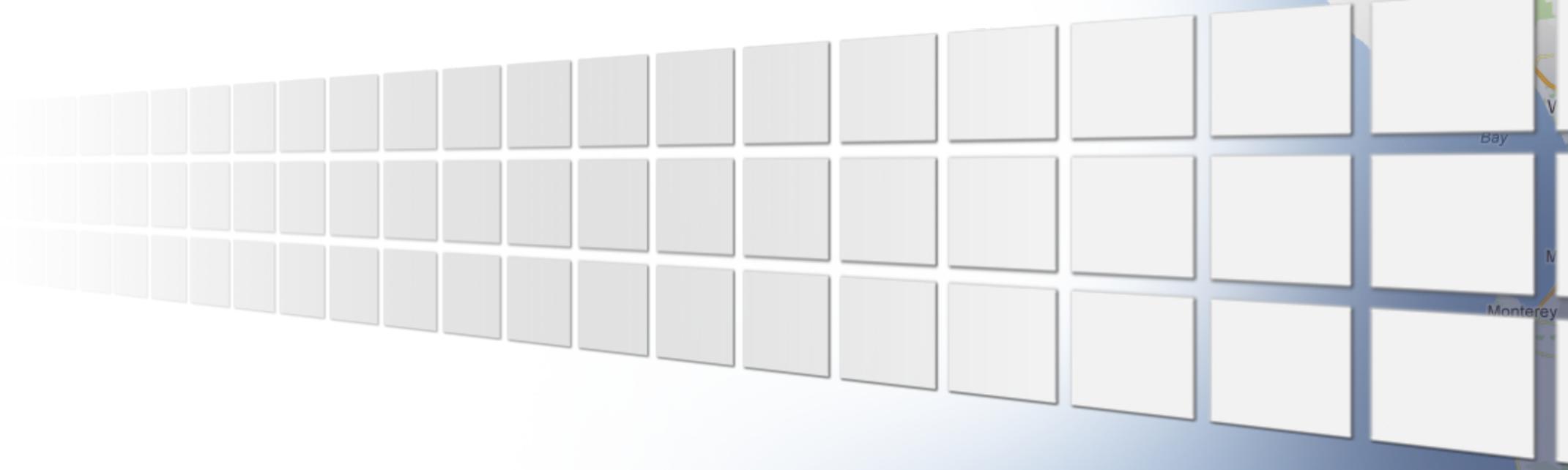
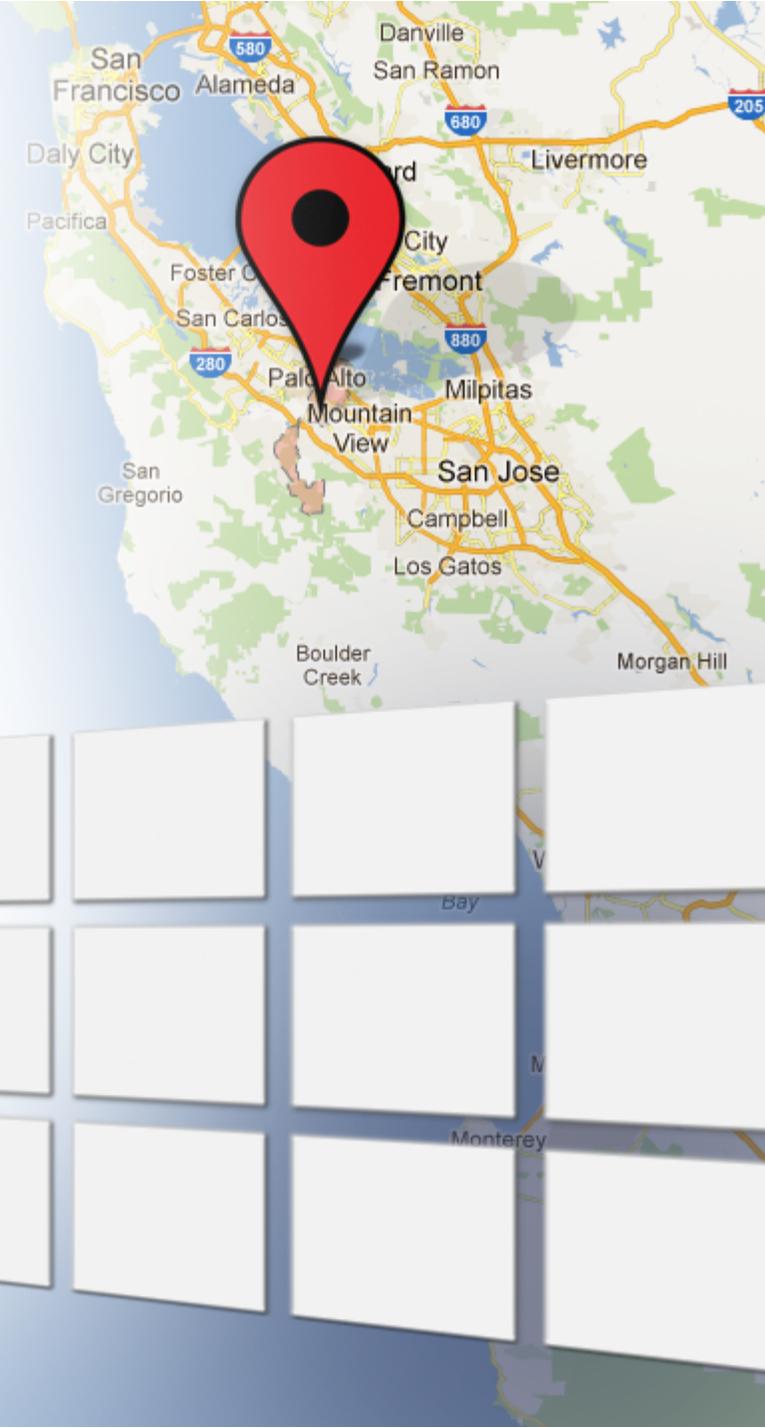


Cooliris

Austin Shoemaker, CTO and Founder

Company Introduction

- Palo Alto based team of 14
- Product highlights
 - Makers of the 3D wall (45M+ installs on desktop browsers)
 - Makers of the Android Gallery app



Social Discovery for Media



Google Drive Integration

- Visual timeline for all your media
- Search by name or text in the images (OCR)
- Instant upload from our camera app
- Real-time media updates



Demo



Using the API

- Objective-C client library
- OAuth 2.0
 - Access to all of a user's files
<https://www.googleapis.com/auth/drive>
 - User email and profile information, used for single sign-on
<https://www.googleapis.com/auth/userinfo.email>
<https://www.googleapis.com/auth/userinfo.profile>
- Google Drive API v2



Browse and Search Images

Request [/files](#) with an optional query parameter.

The `q` parameter is a conjunction of search terms:

fullText contains 'sunset' and mimeType = 'image/jpeg' and trashed = false

Use [nextLink](#) or [nextPageToken](#) to load more pages.

Performance notes

- Partial responses: `fields = items(id,modifiedDate,thumbnailLink),nextLink`.
- Reduce page size: `maxResults = 20`.
- Gzip responses.
- <https://developers.google.com/drive/performance>



Synchronize Changes

1. Get the `largestChangeld` from `/about`.
2. Get `/files`. Include `items(id, modifiedDate)` in the projection.
3. Get `/changes` with `startChangeld={ largestChangeld + 1 }` and `includeDeleted=true`. Include `items(deleted, file/id, file/modifiedDate)`, `largestChangeld` in the projection.
4. Merge inserts, updates, and deletes using `id` for correspondence and `deleted` to detect deletions.
5. Save the new `largestChangeld` for the next request.

<https://developers.google.com/drive/manage-changes>

Frequent polling is resource-intensive. Fortunately, a push channel is in the works.



Upload to Drive

<https://www.googleapis.com/upload/drive/v2/files?uploadType=multipart>

media is limited to 2MB and cannot include metadata.

multipart is a single request and can include metadata. The camera app uses this.

resumable is better for large uploads, especially on unreliable networks.

<https://developers.google.com/drive/manage-uploads>



Final Thoughts

Using the API has been a great experience so far.

Search powered by OCR and image recognition is tremendously useful.

Looking forward to:

- Push notifications for changes
- More metadata
 - Image dimensions, EXIF, ...
 - Recognized text and object tags





Thank you

What's next?



image/gif (animated)



audio/wav

message/rfc822 (emails)



text/x-vcard

application/x-font-ttf



<Thank You!>

+Nicolas Garnier

Developer Advocate, Google

+Rik Arends

CTO & Founder, Cloud9 IDE

+Till Vollmer

CEO & Founder, MindMeister

+Austin Shoemaker

CTO & Founder, Cooliris





Google
Developers