



Google
Developers



The Google+ Hangouts API a year later

Much more than a mustache





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Today's Agenda

- What is the Hangouts API?
- Why Hangout Apps?
- A bit of history
- Using the API
- Where we're going





What is the Hangouts API?

- [Add participants icon]
- [Messages icon]
- [Screen share icon]
- [Camera icon]
- [Effects icon]
- [App icon]
- [More options icon]
- [Help icon]



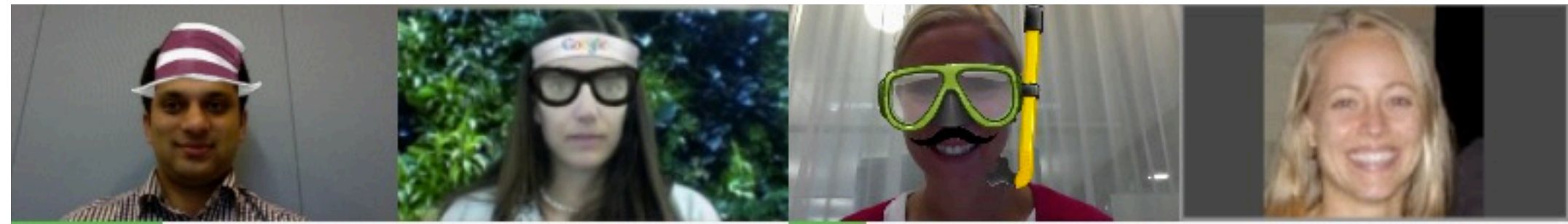
Effects

Sounds

- [Clapping hands]
- [Typewriter]
- [Cicada]
- [Bell]
- [Masks]
- [Drum]
- [Trumpet]
- [Eye]
- [Lips]
- [Drum]
- [Trumpet]
- [Pocket watch]

Remove all effects

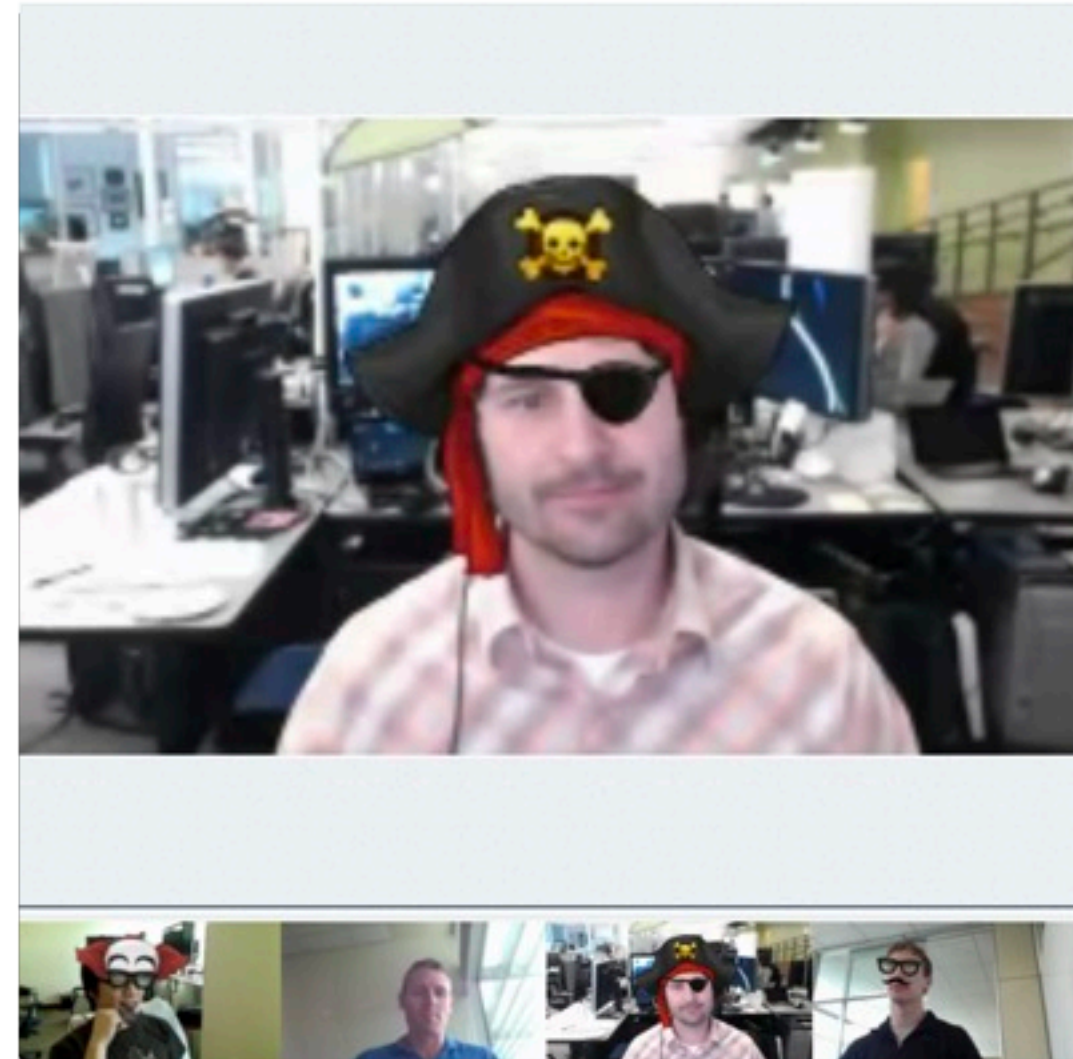
Randomize!



What are Hangout Apps?

```
286 function startHeadTracking() {
287     // Create hat overlay.
288     var topHat = gapi.hangout.av.effects.createImageResource
289         'http://hangoutmediastarter.appspot.com/static/tophat.png';
290     var overlay = topHat.createFaceTrackingOverlay(
291         {'trackingFeature':
292         gapi.hangout.av.effects.FaceTrackingFeature.NOSE_RIGHT,
293         'scaleWithFace': true,
294         'rotateWithFace': true,
295         'scale': 1.0});
296     overlay.setVisible(true);
297
298     // Add event handler.
299     gapi.hangout.av.effects.onFaceTrackingDataChanged.
300         add(onFaceTrackingChanged);
301
302     console.log('Started head tracking');
303 }
304
305 function onMirrorClicked() {
306     var checkbox = document.getElementById('mirror');
307     mirrored = checkbox.checked;
308 }
309
310 function init() {
311     // When API is ready...
312     gapi.hangout.onApiReady.add(
313         function(eventObj) {
```

Your HTML/JavaScript



hangout.js



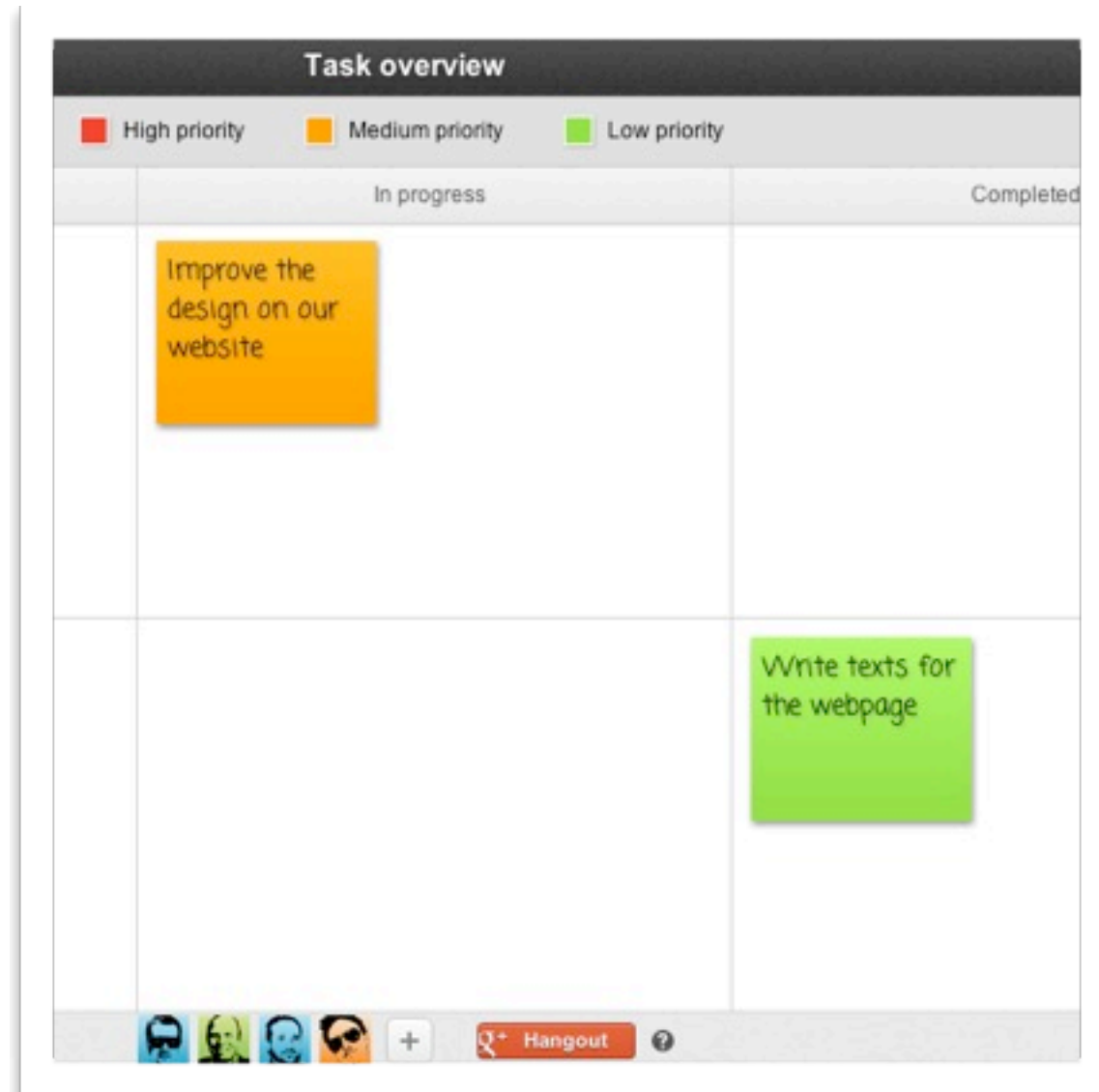
*“Anything you can do in an iFrame, you
can do in a Hangout”*



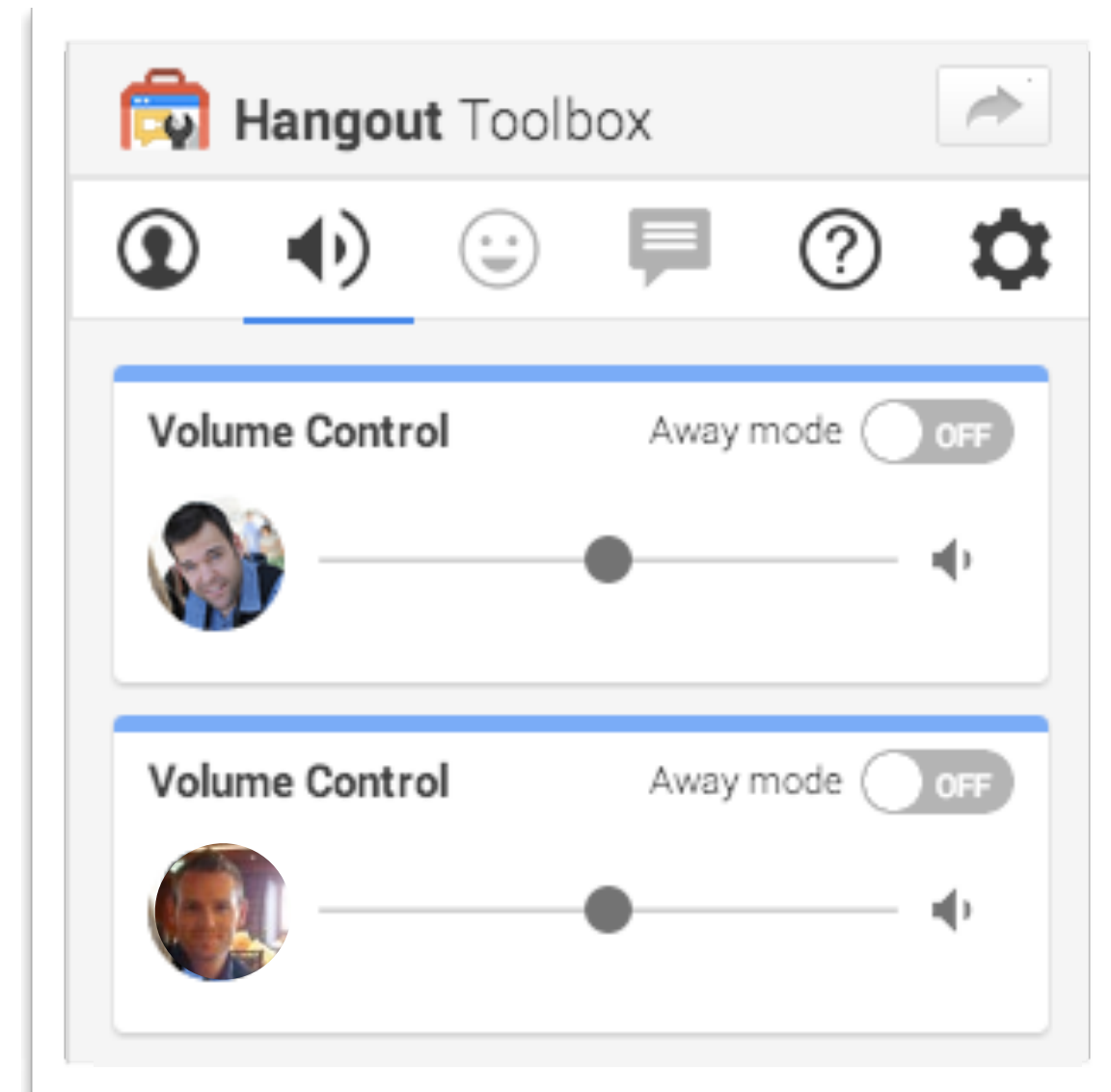


Why Hangout Apps

Why Apps?



Shared activities



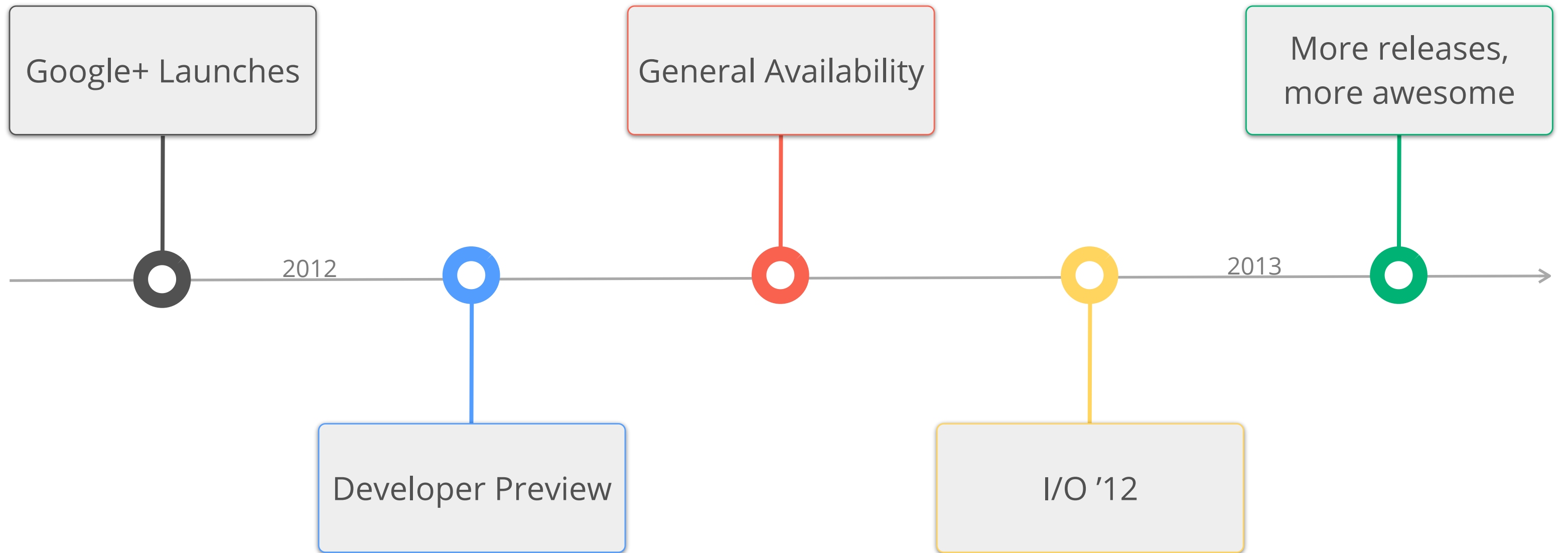
Conversation enhancers





A Bit of History

Timeline



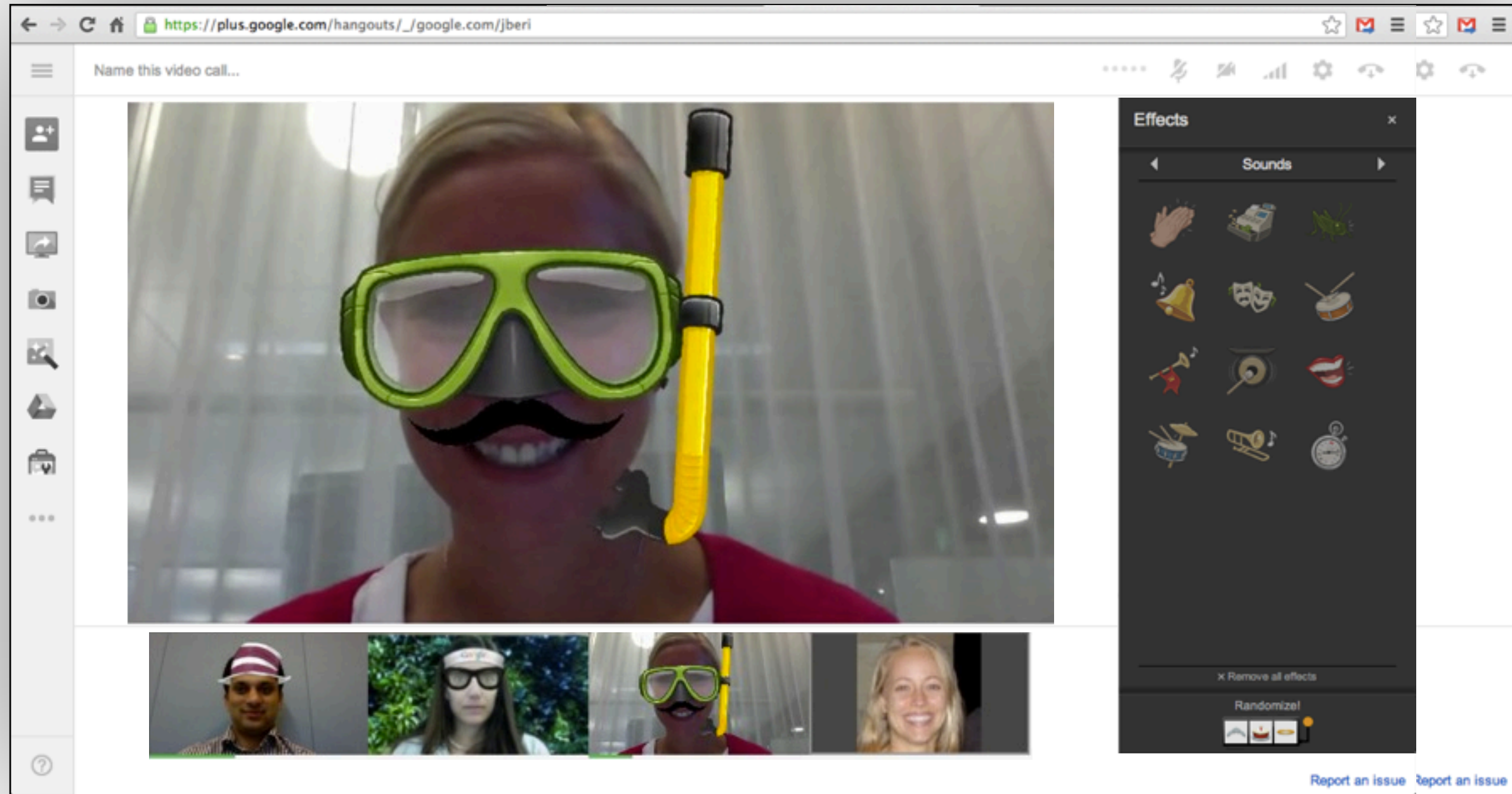
Timeline

The screenshot displays a mobile YouTube interface. At the top, there's a status bar with signal strength, Wi-Fi, and battery icons. Below it, a navigation bar contains icons for home, search, and a red play button. The main content area features a video player for "A robot that flies like a bird" by TEDtalksDirector. The video player includes a title, a play button, a progress bar (0:04 / 6:20), and a "Push to talk" button. To the right of the video player is a playlist section with "Add videos to playlist" and "Save playlist" buttons. The playlist includes a "Now Playing" section with the current video and a "Recommended Videos" section with four video thumbnails and their titles: "Ramesh Raskar: Imaging at a trillion f...", "Corgi Flop: The Cartoon", "Most Human Like Robot Ever", and "Morgan Spurlock: The greatest TED T...". At the bottom of the screen, there is a video call gallery with four participants: a man with a white headband, a woman with black glasses, a man with green goggles, and a woman with blonde hair. A "Report an issue" link is visible in the bottom right corner.

ability



Timeline



Mo
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2013

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Timeline

Google

The screenshot shows a Google Hangouts video call interface. At the top, the browser address bar displays https://plus.google.com/hangouts/_/google.com/jjberi. Below the address bar, there's a header area with a menu icon, the text "Name this video call...", and several utility icons. The main content area features a digital drawing application. The application has a toolbar on the left with icons for adding participants, chat, screen sharing, camera, drawing tools, and a help icon. The drawing canvas is filled with a colorful illustration. At the top left of the canvas is the "Scoot & Doodle" logo with a cat icon and a "beta" label. The illustration includes a blue cat with glasses, a purple dog with a blue hat, a large purple creature with yellow and green patterns, a yellow creature with a red mouth, and a black ant. To the right of the canvas is a "COLOR PALETTE" with 12 color swatches and "BRUSH SIZES" with four circular options. Below these are icons for "eraser", "clear", and "save". At the bottom of the screen, there's a video gallery with five thumbnails: a woman, a dog with a mustache, two children, a boy, and a woman with a child. A "Report an issue" link is visible in the bottom right corner.

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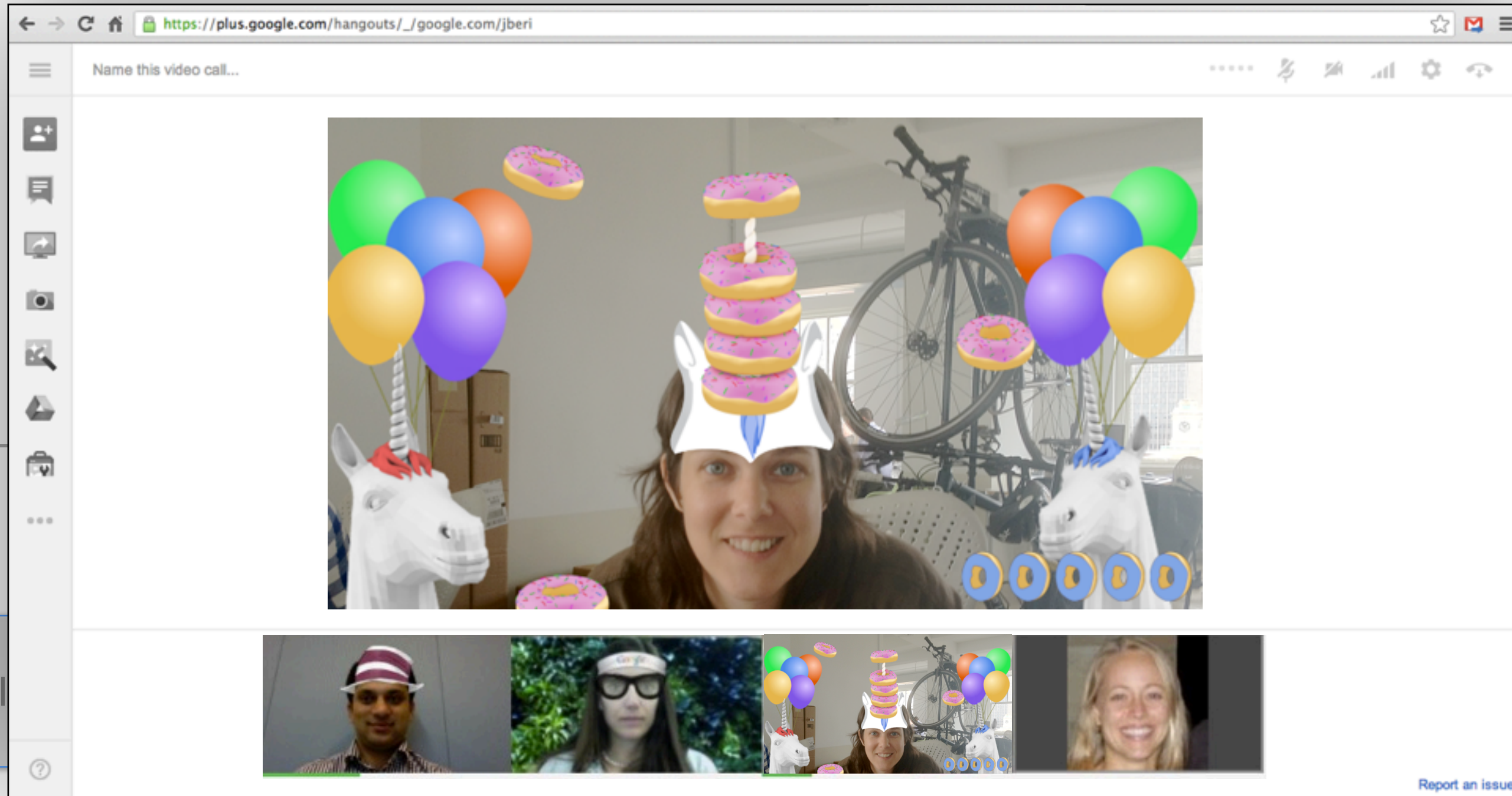


Timeline

ches

2012

Devel



Timeline

Genera

view

The screenshot shows a Google+ Hangout interface during a broadcast. At the top, it says "On Air aelOuy" and "0 viewers". There are buttons for "Embed" and "END BROADCAST". A toolbar on the left contains various icons for chat, video, and other features. The main video area shows a woman, Amy Walgenbach, with a name tag that includes "USA", an American flag, "Amy Walgenbach", and a "Google+" logo. Below her name tag is a "Forty Love" logo. A "Tennis" label is visible in the top left of the video frame. Below the main video is a gallery of four smaller video thumbnails for other participants: Amy Walgenbach, Chirag Shah, Jon Berl, and Jenny Murphy. A "Report an issue" link is at the bottom right. On the right side, a "Cameraman" panel is open, explaining that it allows control over when each participant is shown. It features a circular thumbnail of Amy Walgenbach with a "Cameraman button" (a camera icon) overlaid on it. Below this, there is a question: "As guests join, hide their audio and video from my broadcast?" with radio buttons for "Yes" and "No", where "No" is selected.





Using the API

hangouts.js

The Hangouts API

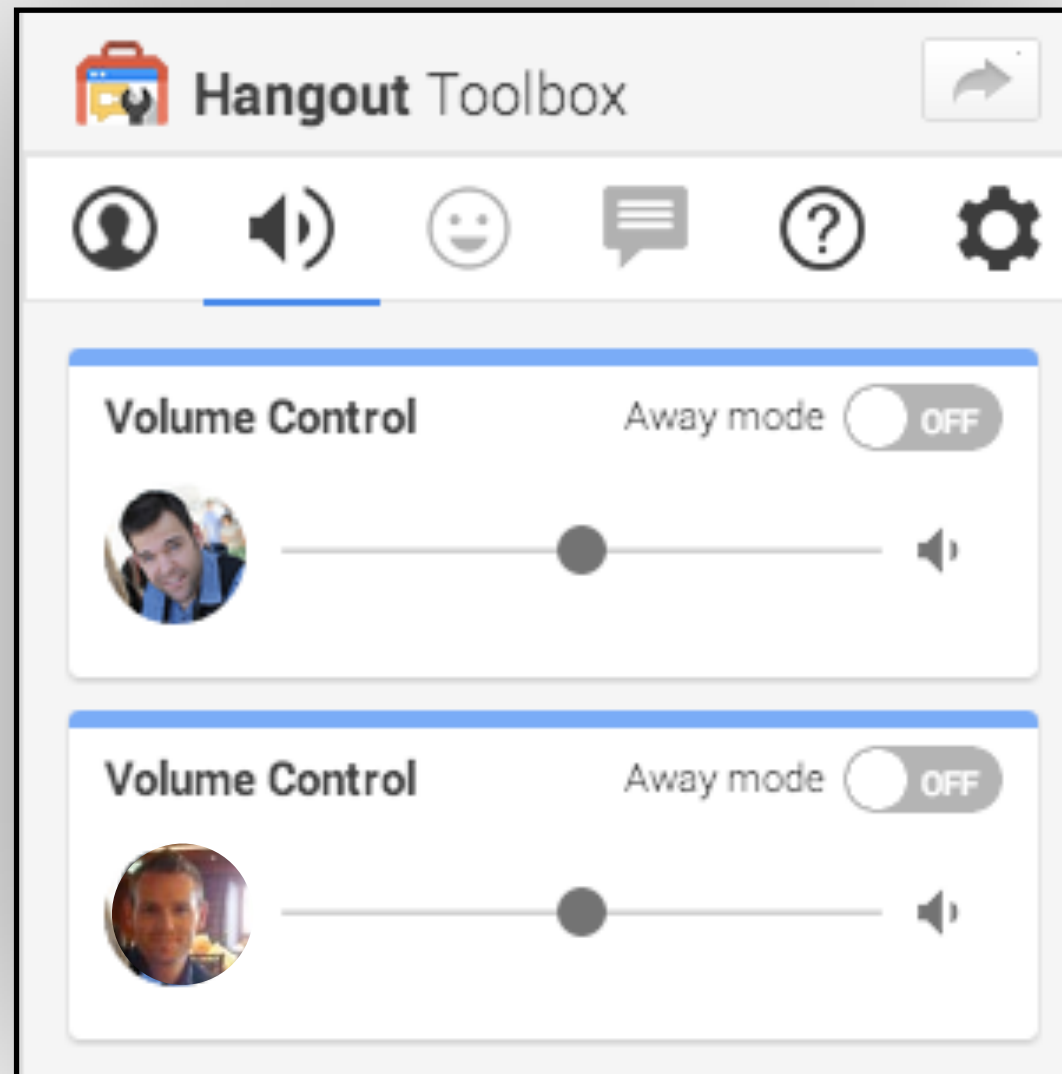
- Including hangout.js gives you access to many hangout features, including:
 - Participants
 - Data Channels
 - A/V
 - Effects
 - Metadata





The API: it starts with people

Show Who is Talking





The API: collaboration with data

Watch While Someone Draws

The screenshot shows a Google Meet interface. At the top, a browser address bar displays a URL. Below it, a toolbar contains icons for adding participants, chat, screen sharing, camera, microphone, and a menu. The main content area features the 'Scoot & Dogdle' drawing application. The app's interface includes a logo with a fox and dog, a 'beta' label, and a 'Learn more...' link. The drawing canvas is filled with colorful, stylized illustrations of a dog wearing glasses, a large purple creature with various patterns, a yellow creature, and a black ant. To the right of the canvas is a 'COLOR PALETTE' with 12 color swatches and 'BRUSH SIZES' with four circular options. Below these are 'eraser', 'clear', and 'save' buttons. At the bottom of the screen, a video gallery shows five participants: a woman, a person with a dog mask, two children, a young boy, and a woman with a child. A 'Report an issue' link is located in the bottom right corner.





The API: Playing with the video stream

Use Your Face as a Controller





Richard Dunn

Technical Lead, Hangouts API

goo.gl/wb01D



Where the Platform is Headed

Where the Platform is Headed

- Made lots of progress on building rich APIs
- Now focus on faster, more flexible releases
- Get developer feedback early and often
- More cool stuff!





Release channels

Release channels

- No more versions!
- Stable channel: APIs as they are finished
 - `<script src="//plus.google.com/hangouts/_/api/v1/hangout.js"></script>`
- Developer channel: Playground for new features
 - `<script src="//plus.google.com/hangouts/_/api/dev/hangout.js"></script>`





Developer experience

Developer experience

- No more sandbox!
- Private apps run privately
- OR share with others in your Hangout





Auto-load apps

Auto-load apps

- Set your app to auto-load, user confirms
- Consider Drive to save data
- Your Hangout the way you want it





Developer channel effects

Developer channel effects

- Hand tracking, background replacement, background blur
- Please try them out
- Let us know what works, what doesn't





Community engagement

Working with the Community

- Google+ Developers, Hangouts category
- Will post API updates on both channels here
- Feedback about APIs and feature requests



Codelab

Building Amazing Hangouts Applications - Make Magic Interactions!

When: May 17, 2:00PM - 4:00PM PDT

Where: Room 4



<Thank You!>

developers.google.com/+hangouts
plus.google.com/+GooglePlusDevelopers

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